



ADVANCES IN  
LABOUR STUDIES

Edited by  
Iyanatul Islam and David Kucera

**BEYOND  
MACROECONOMIC  
STABILITY**

Structural Transformation  
and Inclusive Development



# Beyond Macroeconomic Stability

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## Structural Transformation and Inclusive Development

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Iyanatul Islam and David Kucera

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# Introduction

*Iyanatul Islam and David Kucera*<sup>1</sup>

## **The context: a return to ‘business as usual’?**

The Great Recession of 2008–2009, while wreaking havoc on the lives of millions, also raised expectations that the preoccupation with a conservative strain of macroeconomics under the rubric of the ‘Washington consensus’ that dominated the 1980s and 1990s would eventually come to an end.<sup>2</sup> This in turn entailed the expectation of a new beginning: namely, macroeconomic and sectoral policies geared towards supporting the quest for structural transformation and inclusive development. The countercyclical policies that were adopted by systemically important countries across the world to stave off a global depression in 2008–2009, the renewed commitment to assist developing countries to attain the Millennium Development Goals (MDGs) by 2015 and the endorsement of the ‘social protection floor (SPF) initiative’ by the United Nations (UN) system in April 2009 appeared to signal a robust affirmation of the international community’s commitment to meet the key aspirations of the global development agenda.

Unfortunately, all indications are that, in the spheres of macroeconomic and labour market policies at least, a ‘business as usual scenario’ might prevail. Evidence gleaned from a study of 67 International Monetary Fund (IMF) Article IVs for 27 countries of the European Union (EU) for 2008–2011 suggest that the emphasis on fiscal consolidation is particularly strong and many countries have also embarked on wide-ranging labour market and so-called structural reforms.<sup>3</sup> Another study that draws on 314 IMF national reports in 174 countries identifies three phases of policy developments between 2008 and 2015. The first phase, entailing fiscal expansion, covers 2008–2009. The second phase runs from 2010 to 2012, which entails the onset of fiscal



contraction. The third phase pertains to 2013–2015 and is expected to culminate in an intensification of fiscal contraction. The average degree of projected downward adjustment in public spending is 3.7 per cent for a sample of 68 developing countries compared to a cut in public expenditure of 2.2 per cent in 26 high income countries. For the entire sample, the study finds that 25 per cent of the countries covered will experience ‘excessive fiscal contraction’ defined as cutting public expenditure below pre-crisis levels. Thus, we seem to have entered a global ‘age of austerity’.<sup>4</sup>

What were the key reasons behind the shift from counter-cyclical policies to fiscal austerity, which is often euphemistically called fiscal consolidation? Farrell and Quiggin (2012) have suggested that an implicit collusion between some leading conservative economists in the United States and influential members of the policy elite in Europe (most notably European Central Bank (ECB) and Germany) managed to sow the seeds of discord against a globally synchronized fiscal expansion. This discord reflected several factors:

- the long-standing intellectual ascendancy of a conservative strain of conventional (or post-1980s) macroeconomics in which counter-cyclical fiscal policy within a Keynesian framework is seen to be ineffective, which is, in turn, a reflection of the historical influence of ‘dangerous ideas’ in economics;<sup>5</sup>
- the fact that, by mid-2009, the Global Recession was considered to be over; and
- the unleashing of a sovereign debt crisis in Greece in late 2009 and early 2010.

In addition, 2010 saw the launch of the much publicized work of Harvard economists Reinhart and Rogoff in which a key conclusion based on historical data was that crossing the 90 per cent debt-to-GDP (gross domestic product) threshold led to a sharp growth slow-down in a sample of high income countries. It was also the year in which Alesina, also a Harvard economist, was invited by the European finance ministers to present his case of ‘expansionary fiscal consolidation’, that is, the seemingly paradoxical idea that fiscal austerity can promote growth. More importantly, he argued that fiscal austerity was not an electoral and political liability.

Thus, by 2010, dealing with, and reducing, unsustainable public debt in advanced economies became the key challenge in a post-crisis world. An IMF Staff Discussion paper by Blanchard, Dell’Arricia and Mauro

offers a succinct statement of this view (Blanchard et al. 2013). It suggests that 'strong fiscal stimulus' was appropriate 'early in the crisis' which prevented a 'much worse decrease in demand than actually took place ... Once the collapse was averted, the increase in debt ... led the IMF to recommend a shift from fiscal stimulus to fiscal consolidation. Further fiscal consolidation would have made the debt unsustainable, leading eventually to sovereign default' (Blanchard et al. 14). In contrast to the 2010 version of 'rethinking macroeconomic policy' by these authors, which made the case for rehabilitating the counter-cyclical role of fiscal policy, its 2013 sequel focuses primarily on public debt management, although it has maintained a more eclectic stance on monetary policy (Blanchard et al. 2010, 2013).

The move to fiscal consolidation was endorsed in the June 2010 Toronto declaration of the G20 Summit. The G20 leaders noted that 'advanced economies have committed to fiscal plans that will at least halve deficits by 2013 and stabilize or reduce government debt-to-GDP ratios by 2016.' To be fair, the Toronto G20 Summit also highlighted the 'risk that synchronized fiscal adjustment across several major economies could adversely impact the recovery' and that attention should be given to 'strengthening social safety nets'. Nevertheless, the G20 declaration was based on the optimistic premise that a global recovery was well underway and that an ambitious agenda of 'structural reforms' cutting across both labour and product markets would lift global output significantly, create 'tens of millions more jobs', sustain poverty reduction and reduce global imbalances significantly.<sup>6</sup> In addition, central banks in systemically important advanced countries embarked on unconventional monetary policies – known as 'quantitative easing' – to offset the possible contractionary consequences of fiscal austerity knowing full well that this is a difficult task when an economy is caught in a 'liquidity trap'.

In the case of developing countries, the emphasis on fiscal consolidation was less emphatic. Nevertheless, global reports on MDGs prepared by the IMF and World Bank echoed the need to remain vigilant about the sustainability of public finances.<sup>7</sup> In any case, as noted already, there is evidence of significant retrenchment of public expenditure in the developing world.

The reassertion of a 'business as usual scenario' entailing a combination of fiscal consolidation, unconventional monetary policy and structural reforms, especially in the advanced countries, has, however, been confronted by a good deal of empirical scrutiny by its critics. Serious questions have been raised about the empirical credibility of the

canonical work of Alesina (2010) and Reinhart and Rogoff (2010) that appeared, for a while at least, to provide academic respectability to the agenda of fiscal austerity. Alesina's work has been questioned on the ground that it contains factual errors as well as for describing the key findings in a misleading way (Islam and Chowdhury 2012). Reinhart and Rogoff's work has been criticized for committing coding errors, arbitrary exclusion of countries and inappropriate weighting schemes used to aggregate the results (Herndon, Ash and Pollin 2013). The IMF (2012; Blanchard and Leigh 2013) also conceded that it underestimated the contractionary consequences of fiscal policy. At the same time, even economists sympathetic to the cause of conventional macroeconomics opined that quantitative easing has not been particularly effective in dealing with the liquidity trap (Woodford 2012).

Perhaps the most compelling case against the *status quo ante* is that global economic recovery has been much slower than expected; the Euro area and the EU in general continues to be in the grip of stagnation and high unemployment; the recovery in the United States has been tepid. Considerable political and social unrest have wracked the peripheral economies of the Eurozone that bore the brunt of fiscal austerity. At the same time, the much-touted sovereign default caused by debt sustainability concerns was limited to the particular circumstances of the peripheral economies of the Eurozone and simply did not materialize in the case of countries such as the United States, United Kingdom and Japan, that continue to enjoy historically low interest rates despite high debt-to-GDP ratios. This is largely because they can issue debt in credible domestic currencies, granting such sovereign bonds a 'safe haven' status (Grauwe 2011).

Cracks are also beginning to emerge in the façade of unity among the G20 that was projected at the Toronto Summit. The emerging economies of the G20 group have raised concerns about the deleterious spillover effects on their economies, which they claim are being triggered by short-term capital inflows caused by quantitative easing. G20 efforts at a renewed and unified commitment to fiscal targets along the Toronto Summit lines remain uncertain largely because of opposition from the United States, Japan and some emerging economies.<sup>8</sup> Key policy-makers from the EU that spearheaded the fiscal austerity movement between 2010 and 2013 now concede that it has reached its 'political limits'.<sup>9</sup> The G20 communique from the finance ministers and central bankers, released on 19 April 2013, refers only in general terms to the importance of 'fiscal sustainability' for advanced economies and there are no references to specific targets.<sup>10</sup>

## The three thematic pillars of this volume

In light of these salient and unresolved issues that dominate the global policy agenda, this edited volume seeks to go beyond the narrow conceptualization of macroeconomic stability in the conventional framework and explores the link between structural transformation and inclusive development. The volume rests on three distinct, but interrelated, thematic pillars. The first consists of three chapters addressing the limits of conventional macroeconomics. Chapter 1 by Iyanatul Islam, Ishraq Ahmed, Raquel Ramos and Rathin Roy delineates the 'one-size-fits-all' nature of the policy advice dispensed by the IMF to developing countries. Chapter 2 by Anis Chowdhury and Iyanatul Islam builds up an evidence-based case against fiscal consolidation. Chapter 3 by Sarah Anwar and Iyanatul Islam critically examines whether developing countries should set low, single-digit inflation targets to promote growth and employment.

The second thematic pillar encompasses three chapters that deal with the long-run agenda of structural transformation and the development of capabilities. Chapter 4 by David Kucera and Leanne Roncolato enunciates an empirical approach to track the various sources of structural transformation and applies it to sectoral data for a large number of countries. Chapter 5 by Irmgard Nübler and Christoph Ernst nurtures the thesis that investment in infrastructure leads to the inculcation of capabilities, broadly defined to include knowledge accumulation, dissemination and application. Such capabilities in turn provide the key to the transformational potential of developing countries. Chapter 6 by Christina Behrendt reinterprets social protection from the perspective of inclusive development and structural transformation.

The final thematic pillar, consisting of two chapters, deals with the highly topical issues of inequality, the relative wage share and their macroeconomic consequences. Current concerns about inequality, both global and country-specific, have emerged in the wake of the Great Recession of 2008–2009. Chapter 7 by Massimiliano La Marca and Sangheon Lee examines secular trends in the functional distribution of income, most notably the relative wage share, and explores their possible macroeconomic consequences by developing and applying a two-country macroeconomic model. Chapter 8 by David Kucera, Rossana Galli and Fares Al-Hussami discusses the contemporary debate on income inequality and seeks to establish whether it, combined with stagnant real incomes, is one of the sources of the crisis.

## **The limits of conventional macroeconomics: Why one needs to focus on structural transformation and inclusive development**

The preoccupation with public debt-to-GDP ratios that typifies global policy discourse on macroeconomic policy is an illustration of how disconnected it has become from core development concerns. As Part I of this volume argues, this is part of an overall framework that has a rather narrow conceptualization of economic stability. It means a focus on inflation, debts, deficits and current account sustainability (in terms of adequacy of foreign exchange reserves) for developing countries based on certain thresholds: low, single-digit inflation (usually less than 5 per cent), deficits less than 3 per cent of GDP, debt-to-GDP ratio of 40 per cent or less and foreign exchange reserves that can meet at least three months of import coverage. Sustaining these thresholds engenders 'market confidence' that is key to fostering investment, growth, employment and poverty reduction. This template provides the motivation for the observation in the World Bank's 2013 *World Development Report (WDR)* when it claims that macroeconomic stability is one of the 'fundamentals' of growth and employment and even suggests that counter-cyclical fiscal policy is ineffective in developing countries. The *Jobs and Growth Report* by the IMF (2013b: 1) complements the 2013 *WDR* by observing that 'one element of the approach on which there is little disagreement is the critical importance of macroeconomic stability ... as the essential foundation for any growth strategy'. Macroeconomic stability is then defined in terms of 'low inflation and sustainable public finances and external positions' (IMF 2013b: 41). The preoccupation of the conventional macroeconomic framework with stability is a reflection of the way it has evolved in the institutional environment of the advanced economies. The notion that one should observe thresholds pertaining to debts, deficits and inflation was led by policy-makers in the developed world. Thus, the widespread practice of targeting low, single-digit inflation was initiated by the monetary authorities in New Zealand in 1990 (see Chapter 3). Two years later, the Maastricht Treaty became the most famous example of both inflation targets and fiscal rules that were formally adopted by a group of developed countries (the members of the Eurozone).<sup>11</sup> These rules and targets pertaining to macroeconomic management influenced the design of macroeconomic policy in developing countries, such as the convergence criteria of currency unions and regional economic groups in Africa.<sup>12</sup>

Another example of the disconnect between core development concerns and macroeconomic policy is that the 2010 thesis of ‘rethinking macroeconomic policy’ as well as its 2013 sequel are written largely from the perspective of advanced economies (Blanchard et al. 2010, 2013). For example, the authors note that conventional macroeconomics gained primacy during the 1980s and 1990s when the ‘Great Moderation’ (entailing reduced inflation and output volatility relative to previous decades) prevailed in the rich world. Yet they seem oblivious to the fact that the 1980s and 1990s marked the ‘lost decades’ for the median developing country that experienced stagnation relative to the 1960s and early 1970s. These were also the decades of the highly controversial structural adjustment experiment that was eventually withdrawn in 1998.<sup>13</sup>

It would be foolish to argue that macroeconomic stability does not matter. Hyperinflation and out-of-control debts and deficits kill growth. On the other hand, as the chapters in Part I argue, the restoration of stability will not automatically engender self-sustaining growth. Upholding the entirely appropriate principles of price stability and fiscal sustainability should not be reduced to some simple and restrictive targets. Neither theory nor evidence supports such an approach.

In understanding the limits of conventional macroeconomics, one needs to reiterate the customary distinction between growth and development. The latter is best characterized by a process of structural transformation in which resources shift from low to high productivity sectors, which in turn induces the within-sector and macroeconomic productivity growth that lies at the root of rising living standards. It is this process of structural transformation that occupied the attention of ‘first-generation’ development economists: they recognized that it is possible to have the ‘wrong’ kind of structural transformation (discussed further in this Introduction). One needs to go beyond sustained growth of per capita income. Such growth needs to be accompanied by ‘inclusive’ development, an epithet that is now widely embraced by international agencies. Inclusive development entails multiple dimensions:

- (1) sustained and significant decline in both income and non-income dimensions of poverty;
- (2) sustained and significant decline in the proportion of those at risk of poverty;
- (3) significant progress towards full and productive employment at decent wages and working conditions; and
- (4) low and stable levels of inequality or a sustained and significant decline in inequality.

This is a broader conceptualization than the current MDGs framework that focuses on (1) and, to some extent, (3).

Equatorial Guinea represents a particularly glaring example of how insufficient a yardstick growth of per capita income can be from the perspective of structural transformation and inclusive development.<sup>14</sup> A small country (population of less than 800,000) in sub-Saharan Africa, Equatorial Guinea grew at spectacular rates after the discovery of oil at the end of the 1980s. Its per capita GDP grew fivefold between 1990 and 2000. Today, it is classified as a 'high income non-OECD [Organisation for Economic Co-operation and Development] country' by the World Bank. Not surprisingly, it has the highest per capita income in the African continent. The vast bulk of the growth was propelled by the oil sector, which now accounts for 78 per cent of GDP. Within the space of ten years, Equatorial Guinea was transformed from a largely agrarian economy to one of the most heavily oil-dependent economies in the world. Clearly, there was a great deal of structural transformation, but it was not of the kind that engenders development, much less 'inclusive' development.

Equatorial Guinea also ran persistent and large fiscal surpluses for many years. Between 2003 and 2008, for example, the fiscal surplus ranged between 15.1 per cent of GDP and 26.2 per cent of GDP. Equatorial Guinea has very little debt: domestic debt and external debt were 1 per cent of GDP and 4.7 per cent of GDP respectively in 2011. Foreign exchange reserves amounted to more than eight months of import coverage (as at 2011), which is well in excess of the threshold considered to be prudent from the perspective of current account sustainability. Equatorial Guinea did less well on the inflation front, but at a little over 7 per cent per annum it is unlikely that Equatorial Guinea runs the risk of hyper-inflation. It is difficult to argue that getting the inflation rate down to the preferred threshold of 5 per cent or even lower will somehow fundamentally transform the structure of the economy.

The numbers pertaining to fiscal surpluses and foreign exchange reserves do not mean much when viewed from the multiple dimensions of inclusive development. An apparently 'high income, non-OECD country' like Equatorial Guinea has a poverty rate of 77 per cent (as at 2006 and based on US\$2 per day) and a life expectancy of 51.4 years (as at 2012), which is below the average for Sub-Saharan Africa. The improvements in terms of these core social indicators have been quite modest, especially when contrasted with the growth boom. Expected mean years of schooling (based on cross-country regressions) declined by 0.8 years

between 1980 and 2012. In terms of the United Nations Development Programme's (UNDP) Human Development Index (HDI), Equatorial Guinea ranked 136 out of 187 countries in 2012. There is an 'acute youth unemployment problem'.<sup>15</sup> This is perhaps not surprising given that the non-oil sector generates employment for only 4 per cent of the workforce. There are no available estimates of inequality in Equatorial Guinea, but it would seem to have grown a great deal in recent years.<sup>16</sup>

The conspicuous case of Equatorial Guinea suggests that the challenge is to find ways in which conventional macroeconomics can be more closely connected to the agenda of structural transformation and inclusive development. This means going beyond a mere reiteration of the virtues of macroeconomic stability. One needs a 'dual mandate' for macroeconomic policy managers in developing countries. This dual mandate emphasizes the role of macroeconomic policy managers along two dimensions: (1) as a guardian of stability; (2) as an agent of inclusive development.

Being a guardian of stability does not merely mean passively accepting exogenous targets on debts, deficits and inflation derived from a 'one-size-fits-all' approach. It means upholding the principles of price stability, fiscal and financial sustainability using a country-specific approach. It means protecting people from the vagaries of business cycles and other exogenous shocks through sustainable counter-cyclical policies based on a mix of automatic stabilizers and discretionary interventions.

Being an agent of inclusive development entails various obligations on developing country macroeconomic policy managers. At the very least, it entails an emphasis on a sustainable resource mobilization strategy to support the attainment of core development goals, as Chapter 1 of this volume argues. A recent study by United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP) (2013) highlights what that means. The study – influenced by similar exercises conducted by other UN agencies (e.g. ILO 2010) – specifies six elements of a policy package that cut across the provision of job guarantee schemes, social protection and environmental sustainability. The authors of the report show that developing countries in the Asia-Pacific region would need public expenditures of 5–8 per cent of GDP to meet the resource requirements of such a policy package at the national level. How to implement such public expenditure programmes in an efficient and fiscally sustainable fashion through tax and other revenue mobilization measures then becomes a core issue in development policy.

The notion of macroeconomic policy managers as agents of inclusive development should also be interpreted to suggest how they can



facilitate the process of structural transformation. One way of engaging with this issue is to identify binding constraints on sectors with the most potential for productive job creation. This is the approach that is adopted by a recent McKinsey Report (2012) on Africa. In common with findings from enterprise-level surveys undertaken by the World Bank and others, the McKinsey report finds that lack of financial inclusion and inadequate infrastructure are the two most commonly identified constraints that inhibit the expansion of sectors with the potential to create 'good jobs' in Africa. Drawing on such work, one can argue that promoting financial inclusion and addressing infrastructure deficits are best done by using standard macroeconomic policy instruments, such as giving priority to raising adequate domestic revenue, incentive-compatible credit allocation schemes and appropriate regulatory changes by monetary and financial authorities.

The exchange rate regime can also be used to forge closer links between macroeconomic policy, structural transformation and inclusive development. This can happen when the exchange rate is used as a tool of industrial policy that supports structural transformation by shifting resources from non-traded to traded goods sectors. The expansion of the traded goods sector due to increased international competitiveness can create new employment opportunities. Although not exhaustive, Table I.1 provides an overview of recent findings. The majority of the studies presented find that real exchange rate depreciations have a positive employment effect.

There is, however, an important caveat that is not reflected in Table I.1. This is the potentially adverse impact that currency depreciations can have in economies with high liability dollarization, that is, where private sector debt is denominated in foreign currency while assets are denominated in domestic currency. This renders the private sector sensitive to balance sheet effects – increased indebtedness of firms through a currency mismatch of assets and liabilities – through real exchange rate depreciations. Such negative effects can exceed the positive effects of domestic firms' increased competitiveness (Islam 2011).

A study by Galindo, Izquierdo and Montero (2006) analyses the impact of real exchange rate movements on employment, with varying degrees of trade openness and debt dollarization. Based on a panel dataset for nine Latin American countries, the authors show that the positive effect of real exchange rate depreciations is reversed, and can be negative, with increasing liability dollarization. Similarly, for Mexico, Lobato, Pratap and Somuano (2003) find that the balance sheet effect outweighs the competitiveness effect engendered currency depreciations. While the balance sheet effect is not undisputed (see, for instance,

Table I.1 Effect of real exchange rate (RER) movements on employment

Source	Effect on employment	Sample of countries
Bahamani-Oskooee et al. (2007)	RER depreciation has a significant employment-enhancing effect in the short run, but not in the long run.	United States
Burgess and Knetter (1998)	Appreciation leads to a decline in manufacturing employment.	G7 countries
Campa and Goldberg (2001)	Depreciation increases employment in the manufacturing industry (significant for low mark-up industries, but insignificant for high mark-up industries).	United States
Eichengreen (2008)	RER depreciation has a statistically significant positive effect on industry employment.	40 emerging market countries
Faria and León-Ledesma (2005)	In the United States, an appreciation leads to a decrease in employment. In the United Kingdom, the employment effect is positive, albeit not statistically significant.	United Kingdom, United States
Filiztekin (2004)	Depreciation has a negative employment effect in the manufacturing industry.*	Turkey
Frenkel and Ros (2006)	RER appreciation is associated with an increase in the unemployment rate.	Argentina, Brazil, Chile, Mexico
Gourinchas (1999)	RER appreciation leads to job reduction.	France
Hua (2007)	Statistically significant negative effect of RER appreciation on manufacturing employment.	China
Kandil and Mirzaie (2003)	Decrease in employment growth in several industries in response to dollar appreciation, but increase in employment growth in the mining sector.	United States
Klein et al. (2003)	RER appreciation significantly affects net employment through job destruction and reduction of net employment growth rate in the manufacturing industry.	United States
Ngandu (2009)	Appreciation can have a negative employment effect in the traded sector, but not in the non-traded sector.	South Africa

\* This finding can be ascribed to the high dependency on foreign inputs of production.

Bleakley and Cowan 2005; Luengnaruemitchai 2003), liability dollarization poses a risk to contractionary depreciation.

It is thus clear that the presence of liability dollarization acts as a binding constraint on central banks' ability to use exchange rate policy to support productive employment creation because of the fear that depreciation will engender potentially negative balance sheet effects. Therefore, it is crucial to attenuate high levels of liability dollarization through active capital account management and prudential regulation of the financial system – a message that is echoed by Van Der Hoeven (2010) and Ocampo, Rada and Taylor (2009) in their seminal text on structuralist approaches.

In sum, the case for macroeconomic policy to be closely connected to the agenda of structural transformation and inclusive development means a lot more than a mere focus on macroeconomic stability. Unfortunately, due to its conservative nature, conventional macroeconomics, reared in the institutional environment of advanced economies, has not adequately explored how macroeconomic policy managers can fulfil the dual mandate of acting as guardians of stability and as agents of inclusive development. Country-specific applications of such a dual mandate in the developing world are perhaps the best collective response to a reversion to the 'business as usual' mind-set among various members of the global policy elite.

## **Structural transformation and the development of capabilities**

Whereas conventional macroeconomics focuses on aggregates, structuralist perspectives address the broad shifts that underlie processes of economic development, most typically population shifts from rural to urban areas and related employment shifts from agriculture to industry and services. Though rural-to-urban migration characterizes structural transformation, it has often given rise to urban unemployment and informal employment, the subject of a rich strand of development economics including the Harris-Todaro model (Harris and Todaro 1970). The Harris-Todaro model provides an explanation of why the number of rural-to-urban migrants could exceed the number of available urban jobs and so result in open urban unemployment, and has also served as a foundation for subsequent theories of informal employment (e.g. Fields 1975, 2005). Yet successful economic development must also create shifts over time from informal to formal employment and towards better paid and better quality employment more generally.

These broad shifts, though compositional, are also related to macroeconomic aggregates, notably in the work of Kaldor in which shifts towards industry and manufacturing in particular are argued to induce higher aggregate productivity and output growth (1966, 1967, 1968). Indeed, productivity growth is central to the notion of structural transformation. Here one must bear in mind a pivotal relationship among macroeconomic aggregates: by definition, employment growth is equal to output growth minus labour productivity growth. The definition is dynamic in the sense that more rapid output growth is argued to generate more rapid labour productivity growth through the introduction of new technologies, Kaldor-Verdoorn mechanisms of static and dynamic economies of scale, and positive macroeconomic spillovers. Manufacturing is argued to be particularly amenable to such economies of scale and the creation of positive spill-overs, and in this sense is traditionally characterized as a 'leading sector'.

At the same time, there is a lively debate with important policy implications on the extent to which advanced services, such as information technology, can function as a leading sector and the relationship between advanced services and manufacturing. More specifically, to what extent can advanced services function as a substitute for manufacturing, with the prospect for leapfrogging? Or must advanced services co-evolve with manufacturing, whether as a leading or lagging complement? There is also a renewed interest in rural development, farm and non-farm, and the potential that agricultural products offer for diversification and upgrading capabilities (e.g. Haggblade et al. 2007; Hidalgo 2011). Indeed one of the key policy implications of the Harris-Todaro model is the need to support rural development, which reduces urban unemployment and informal employment by reducing rural poverty.

Significantly, though archetypal leading sectors like manufacturing may be the main drivers of productivity and output growth, they are often weak drivers of employment growth. Timely transitions to formal employment are further challenged by the phenomena of 'jobless growth', which we define as low employment growth – particularly of formal employment – relative to output growth but also relative to the growth of the labour force and working age population. This represents a fundamental problem for development and employment policies. Jobless growth is greatly exacerbated in cases of rapid technology transfer from richer to poorer countries, given the typically greater capital-intensity of production methods in richer countries. The relationship between employment and output growth is commonly discussed under the rubric of the 'employment intensity' of growth, yet employment

intensity can be measured in different ways (see Crivelli et al. 2012; Kapsos 2005). This is illustrated by the hypothetical but broadly plausible scenario shown in Figure I.1, in which the long-run ratio of employment to output is declining, long-run employment elasticity is constant and short-run employment elasticity (or relative employment volatility) is increasing (with the long run and short run represented by the solid and dashed lines, respectively).<sup>17</sup>

The concern here is with the first measure of employment intensity, the long-run ratio of employment to output in Figure I.1. In this sense, the answer to the challenge of jobless growth cannot simply be to increase the employment intensity of growth. For the declining employment intensity of growth is an ambiguous problem. Put differently, employment intensity measured in this way is the direct inverse of aggregate labour productivity (whether labour is measured by the number of people employed or hours of work). Increasing the employment intensity of growth means lowering labour productivity growth, whether through employment reallocation to more labour-intensive sectors or through the use of more labour-intensive production methods within sectors (reallocation and within-sector effects, respectively). As Ocampo et al. point out, ‘Historically, labor productivity increases have been the major contributing factor to growth in real GDP per capita’ (2009: 42). The closer employment is to population, the closer this is to

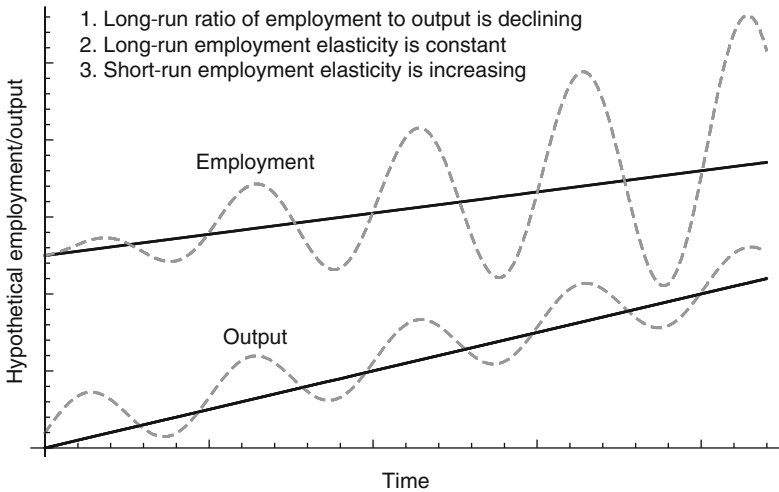


Figure I.1 Defining employment intensity

being true by definition. In this sense, employment intensity declines – that is, labour productivity increases – making possible the very things that define successful economic development: rising living standards alongside more leisure and less work over the course of lifecycles.

One can list examples of employment intensity declines that unambiguously represent progress. Some act to lower employment rates, such as less child labour, later entry into the labour force as a result of more years of education, retirement while still able-bodied, and, arguably, declining female employment rates in earlier stages of economic development (see Goldin 1994). Others act on a given employment rate, such as shorter workweeks and more vacation time. The possibility for such progressive employment intensity declines depends, though, on how productivity gains are distributed to workers through higher earnings and – in turn – through reduced working time in the broadest sense of the term, over the course of lifecycles and indeed across generations. In this sense, the challenge of jobless growth is inseparable from the challenge of the distribution of productivity gains, of particular concern in countries experiencing growing inequality and where sizeable numbers of workers face stagnant or even declining real earnings.

These are among the issues addressed in Chapter 4. The joint challenges of distribution and inequality on the one hand and jobless growth and transitions to formal employment on the other hand also provide the thematic bridge between the second and third parts of this volume. In the context of structural transformation, an essential consideration is that higher wages for both rural and urban workers strengthens the domestic market for goods of leading sectors, particularly manufactures, since the income-elasticity of demand for these goods is generally high (see Dasgupta and Singh 2005). Increasing demand for these goods contributes, in turn, to Kaldor-Verdoorn economies of scale and positive spillovers.

To the extent that formal employment is comprised of employment in formal establishments, most often characterized by higher productivity and earnings, the time frame over which transitions from informal to formal employment can be realized depends on a small set of hard numbers.<sup>18</sup> That is, the number of those currently holding informal jobs, the number of new labour force entrants and the number of new formal jobs created. In all-too-common scenarios where the combination of the first two numbers is large and the last number is small, the time frame for the transition can stretch out a great many years. For these reasons, it makes sense to focus not just on promoting the transition from informal to formal employment but also on improving the

quality of informal employment and the living standards of informal workers and their families more generally.

Optimally, such initiatives should serve as more than stop-gap measures and as investments in their own right, investments in developing capabilities with their own positive spillovers and potential to contribute to structural transformation and economic development. Part II of this volume focuses on two such initiatives, skills-enhancing investments in labour-intensive infrastructure in Chapter 5 and the extension of social security through national SPFs in Chapter 6. Relevant to both Chapters 5 and 6 is the evidence provided in Chapter 2, which argues for the financial viability of investments in infrastructure and social protection in developing countries in the course of an assessment of the relationship between public debt and GDP growth.

Advocating labour-intensive investments may seem at odds with the above discussion of the inverse relationship between labour productivity and employment intensity. This returns us to the ambiguous problem of the declining employment intensity of growth. For in contexts of jobless growth and long transitions from informal to formal employment, it is important to consider a strategy addressing both the distribution of productivity gains as well as a balanced expansion of leading sectors, characterized by economies of scale and positive spillovers, and employment-intensive sectors, largely non-tradable but also creating positive spillovers or lessening negative spillovers. Such employment-intensive investments can be found in infrastructure, the construction of education and health facilities, and climate change adaptation and mitigation measures, as exemplified by the work of the ILO's Employment Intensive Investment Programme. Such investments are also vitally important for the development of rural areas and domestic markets, as addressed in Chapter 5 in the context of a 'dynamic framework of catching up'. (See Nübler (2013) for a full discussion of this framework.) Chapter 5 also addresses how the choice of technology can best contribute to skills attainment as well as to employment creation not only directly but through indirect and income-induced effects by greater reliance on domestically-produced inputs.

The balance between leading and employment-intensive sectors must depend on evolving country-specific considerations, but for a start requires a consideration of rates of aggregate output and productivity growth, the extent of under- and unemployment and informal and formal employment, and the strength of productivity distribution mechanisms, including labour market institutions such as minimum wages, trade unions and other worker organizations, and collective bargaining.

These labour market institutions act on primary income distribution (pre-tax and transfer), and this Introduction will shortly turn to the effects of social protection on secondary income distribution (after-tax and transfer).

Also of potential importance is the strategic use of employment-intensive methods in leading sectors, as illustrated by Unni and Rani's study of the automobile components industry in India (2008). One of the characteristics of vertically disintegrated production, as embodied in global production systems, is that it can create linkages between informal and formal establishments as well as the potential for informal establishments to become increasingly formal. As Unni and Rani write, 'There is absolutely no doubt that the present competitive environment and flexible production processes have given small firms and informal enterprises an opportunity to innovate and grow' (2008: 126).

This discussion is rather schematic, perhaps raising more questions than it answers, such as regarding the employment and production linkages among leading and employment-intensive sectors and informal and formal establishments and how these might co-evolve alongside the strengthening of distribution mechanisms. Deepening general understanding of how this works in practice, or could work in practice, is a worthwhile line of inquiry.

As with investments in infrastructure, investments in social protection can promote structural transformation and economic development. Chapter 6 describes the causal channels through which this can occur based on a survey of the empirical literature on the impacts of such investments, particularly on the effects of social protection through facilitating greater income security and access to health care and education, while also reflecting on the debate on conditional versus non-conditional cash transfers. By providing pensions and greater access to education, social protection can also enable retirement for the elderly and reduce child labour, examples of what we have referred to as progressive employment intensity declines. National SPFs encompass rural and urban areas and informal and formal workers, serving to reduce poverty and promote equality, including gender equality. Social protection floors are thus of central importance for truly inclusive development. Employment guarantee schemes are a form of income-stabilizing social protection that can result in infrastructure investments and the development of domestic markets. Chapter 6 addresses how these considerations as well as the consequences of the Great Recession led to a growing international coalition of support for SPFs.



We have noted that rural-to-urban migration and structural transformation can create urban unemployment and informal employment. In this sense, it is structural transformation itself that creates the need for stronger social protection with respect to income security – all the more so insofar as rural-to-urban migration weakens traditional family support. The very nature of structural transformation thus calls for addressing social protection, transitions from informal to formal employment and rural development as part of the same policy package.

This volume does not pretend to do justice to these long-standing and fundamental development challenges. Rural development, for example, is discussed only in passing. It is hoped, though, that the volume provides useful insights into some of these challenges as well as fruitful directions for future work.

### **Inequality, wages and their macroeconomic consequences**

Addressing the problem of jobless growth via the distribution of productivity gains is likely to pose a particular dilemma in developing countries with extensive rural and urban informal employment, comparable with what Lewis referred to as the ‘traditional sector’ as opposed to the ‘modern sector’ (Lewis 1954, 1979). To use Lewis’s phrase, these are countries with ‘unlimited supplies of labour,’ in which case:

there can be ... an enormous expansion of new industries or new employment opportunities without any shortage of unskilled labour becoming apparent in the labour market. From the point of view of the effect of economic development on wages, the supply of labour is practically unlimited.

(1954: 145)

In such cases, the argument is that higher productivity in the modern sector will not translate into substantially higher wages for workers in this sector until the country has exhausted the supply of unskilled workers in the traditional sector, commonly referred to as the ‘Lewisian turning point’. The Lewis model has been criticized for its theoretical inconsistencies (e.g. Dagdeviren et al. 2001), yet the implications of extensive underemployment in developing countries for the distribution of productivity gains remain relevant. Looking back over the period since the publication of his 1954 paper, Lewis wrote that ‘[u]rban wages [in less developed countries] have been rising faster than

we would have predicted' (1979: 223). He attributes this to several factors: trade unions and their 'strict control of entry', 'civil service unions raising government pay', the 'pressure of governments on foreign employers' and minimum wage regulations (1979: 225, 227). Consistent with his narrow reliance on the neoclassical demand curve for labour, Lewis's concern was that these factors give rise to less employment in the modern sector and more in the traditional sector. The underlying logic of the neoclassical demand curve is questionable in its own right (e.g. Garegnani 1990). But it has also been argued that higher wages boost the domestic market demand for goods of leading sectors, given the generally high income elasticity of demand for these goods, from which positive output and labour-productivity growth dynamics follow.

Also relevant in this context is the so-called Kuznets curve, described graphically by an inverted 'U' shape between income inequality on the vertical axis and economic development on the horizontal axis (Kuznets 1955). In other words, the Kuznets curve represents inequality rising in early stages of economic development and declining in latter stages, with causality running from economic development to inequality in the context of transitions from agricultural to non-agricultural sectors, particularly industry. Kuznets discusses several possible determinants of declining inequality in later stages of development, but emphasizes political determinants – in particular the role of governments in influencing income distribution through forms of direct and indirect progressive taxation, which he argues 'is a vital force that would operate in democratic societies even if there were no other counteracting factors' (1955: 9). In short, Kuznets argues for the importance of governments in distributing productivity gains, at least in democracies.<sup>19</sup>

Democracies can influence primary as well as secondary income distribution, for, as Rodrik demonstrates, democracies 'pay higher wages', after accounting for differences in labour productivity (1999). Rodrik's finding is consistent with the emphasis here on the role of labour market institutions in the distribution of productivity gains in that more democratic countries also tend to have stronger trade union rights (Kucera 2002). There is also evidence that even though more democratic countries tend to pay higher wages, they also enjoy better economic performance by a number of measures, including having higher shares of formal employment, receiving more foreign direct investment and having better export performance (see Asiedu and Lien 2011; Galli and Kucera 2004; Kucera and Principi 2013; Kucera and Sarna 2006). Addressing the challenge of jobless growth through the distribution of productivity gains is thus a more likely prospect in countries that

are more democratic and have stronger trade union rights, as well as stronger labour market institutions more generally.

Chapter 7 addresses the effect of changes in wage shares – that is, functional income distribution – on economic growth. More specifically, the chapter develops and applies a two-country theoretical macroeconomic model to illustrate the policy implications of alternative scenarios of wage-led and profit-led growth for open economies. An economy is said to be wage-led if higher wage shares result in higher growth rates and profit-led if higher wage shares result in lower growth rates. Blecker summarizes three main determinants of wage-led versus profit-led growth as follows:

*Underconsumptionism.* The greater is the difference between the savings rates out of profit and wage income, the more likely such a system is to be wage-led. Narrowing the gap between these two savings rates makes the system more likely to be profit-led. *The investment function.* A strong accelerator effect (usually modeled as the response of the desired accumulation rate to the utilization rate) makes a system more likely to be wage-led. In contrast, a strong profitability effect (the response of the desired accumulation rate to the profit share) makes a system more likely to be profit-led. *International competitiveness.* Exposure to strong international competition implies that rising wages (adjusted for productivity) tend to reduce net exports, thus slowing growth; this tends to make the economy more likely to be profit-led since a wage cut (or a devaluation) is expansionary. Insulation from competitive pressures, either through protectionism or other means, makes a wage-led outcome more likely.

(1996: 24–25)

Consistent with Blecker's discussion of international competitiveness, wage-led growth is a particular challenge for open economies, particularly those whose exports and imports are price sensitive (Blecker 2011). The considerable innovation of Chapter 7 is that it addresses the policy complications that can arise from the interdependence of open economies. Among the possible outcomes is what the authors refer to as a wage-led or profit-led 'paradise', in which countries can effectively increase their output by changing their wage shares without coordination. But interdependence can also result in self-defeating coordination failures, in which countries endeavouring to boost their growth in this manner end up lowering global effective demand and, in turn, lowering their growth. Chapter 7 has particular resonance given

the prevalence of policies followed by many countries in recent years – leading up to and in the wake of the Great Recession – in which the weakening of labour market institutions resulted in lower wages shares and greater inequality more generally (see Berg (forthcoming); Freeman 2007, 2009; Hayter and Weinberg 2011; on the effects of labour market institutions on inequality and other labour market outcomes).

The orientation of this volume is more towards the developing than the developed world, but the Great Recession illustrated how closely the fates of the two are intertwined. Even countries with minimal exposure to the crisis through financial channels, such as India and South Africa, suffered sizeable income and employment losses as a result of declining exports to the EU and United States in what has been called ‘The Great Trade Collapse’ (Kucera et al. 2012). As Baldwin appropriately puts it, ‘For most nations in the world ... this is not a financial crisis – it is a trade crisis’ (Baldwin 2009: 12).

With this rationale in mind, Chapter 8 addresses the literature on whether growing inequality as well as stagnant or declining real incomes were significant causes of the US subprime mortgage debacle at the origin of the crisis, as well as how inequality in other countries may have contributed to the crisis in the context of regional and global current account imbalances. A wide range of inequality measures are addressed, including top income shares for the richest 1 per cent or fewer of households, real hourly earnings by wage percentiles, functional income distribution, as well as consumption inequality in an analysis of patterns of consumption expenditure and debt for US households at different income levels. As explanations of rising household debt, the chapter considers the relative income hypothesis, wealth effects and weakened social protection and labour market institutions in the years leading up to the crisis, and finds the evidence on weakened social protection and labour market institutions particularly compelling.

In the wake of the crisis, labour market institutions were further weakened in many countries, ostensibly to reduce unemployment by increasing labour market flexibility and to reduce current account deficits by lowering labour costs (so-called ‘internal devaluation’). But the strength of labour market institutions did not cause the crisis. On the contrary, the weakening of labour market institutions in the years leading up to the crisis were an important cause of stagnant or declining real incomes, which also manifested itself in growing inequality. In this context, Chapter 8 argues that non-discretionary consumption expenditures – simply keeping one’s head above water – played a key role in contributing to rising household debt in the United States. In Taylor’s account,

unsustainable household debt provided the ‘crucial link’ between the financial crisis and the crisis of the real economy (2011: 352).

Labour market institutions are also highly relevant to the discussion of automatic stabilizers. In the context of ‘rethinking macroeconomic policy’, automatic stabilizers are addressed in the IMF Staff Discussion paper referred to earlier, which provides as examples ‘automatic changes in tax or expenditure policies’ in cases where existing automatic stabilizers are weak (Blanchard et al. 2013: 16–17). A key reason that automatic stabilizers are larger in the EU than the United States is that the EU has more generous unemployment insurance benefits (Dolls et al. 2012). Yet the IMF, in its Article IV reports, has advocated weakening these benefits in a number of EU countries (Weisbrot and Jorgensen 2013). Other labour market institutions, such as minimum wages, employment protection and collective bargaining, can also act to stabilize incomes during a crisis (Glassner and Kuene 2010; Hermann 2011). Looked at in these ways, the attack on labour market institutions is perhaps the bitter irony of the Great Recession.

## Notes

1. For their helpful comments on this chapter, the authors would like to thank Uma Rani, Susan Hayter, Xiao Jiang and Sangheon Lee.
2. See Beeson and Islam (2005) for a critical appraisal of the Washington Consensus.
3. Weisbrot and Jorgensen (2013). The IMF Article IVs are traditional bilateral surveillance instruments that the IMF seeks to undertake annually. They are called ‘Article IVs’ because they emerged from the original ‘Article of Agreements’ of the IMF that set the foundation for the IMF as an international institution.
4. Ortiz and Cummins (2013).
5. Blyth (2013).
6. The G20 Toronto Summit, available at: [http://www.g20.utoronto.ca/2010/g20\\_declaration\\_en.pdf](http://www.g20.utoronto.ca/2010/g20_declaration_en.pdf) (accessed 20 August 2013).
7. See Chapter 3 for more details.
8. Reuters, April 19, 2013, available at: <http://www.reuters.com/article/2013/04/19/us-g-idUSBRE93105Z20130419> (accessed 20 August 2013).
9. *The Guardian*, 22 April 2013, available at: <http://www.guardian.co.uk/business/2013/apr/22/eurozone-crisis-markets-rally-italian-president> (accessed 20 August 2013).
10. The G20 Communiqué of Finance Ministers and Central Bankers, available at: <http://www.g20.utoronto.ca/2013/2013-0419-finance.html> (accessed 20 August 2013).
11. Member states of a currency union should have low, single-digit inflation rates, sticking to a –3 per cent annual fiscal deficit and annual 60 per cent debt to GDP ratio.

12. For an example of regional convergence criteria in the case of East Africa, see Kuteesa (2012). The East African Community has three 'primary criteria' for economic convergence, namely, budget deficit of less than 2 per cent (including grants), inflation rate of less than 5 per cent, foreign exchange reserves worth more than six months of import coverage. These primary criteria should be attained by 2014 (Kuteesa 2012: 150).
13. Islam and Verick (2011, chapter 1).
14. This account of Equatorial Guinea draws on African Economic Outlook (2002, 2012), IMF (2012), World Bank (2013b), UNDP (2013).
15. African Economic Outlook (2012).
16. Sand, W. (2012), 'Malabo: Equatorial Guinea's Invisible City', 15 February, available at: <http://pulitzercenter.org/reporting/equatorial-guinea-malabo-sipopo-camp-yaunde-inequality-poverty-wealth-buena-esperanza> (accessed 20 August 2013).
17. Figure I.1 describes a scenario of stable trend increases in labour productivity alongside increasing shares of non-regular workers with less job security (such as informal employment within formal establishments) or a shift towards an employment system characterized by greater numerical employment flexibility.
18. See Hussmanns (2005) for a valuable discussion of the ILO's definitions of formal and informal work and how these have evolved.
19. See Lee and Gerecke (forthcoming) for a similar reading of Kuznets. Note also that Van Der Hoeven argues that the availability of more data has 'discredited the Kuznets curve' (2010: 81). Yet Kuznets' arguments about the role of government remain relevant. Indeed, the contingent nature of such political determinants suggests that one should not expect a very regular relationship between income inequality and economic development.

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# **Part I**

## **Limits of the Conventional Macroeconomic Policy Framework**

# 1

## Dispensing Macroeconomic Policy Advice to Developing Countries: The IMF's Article IV Consultations<sup>1</sup>

*Iyanatul Islam, Ishraq Ahmed, Rathin Roy and Raquel Ramos*

### **Introduction**

Under the IMF article of agreements, Article IV consultations play an important surveillance role. As the IMF observes:

Article IV consultations usually take place once a year. IMF economists visit the member country to gather information and hold discussions with government and central bank officials, and often private investors and labor representatives, members of parliament, and civil society organizations. Upon its return, the mission submits a report to the IMF's Executive Board for discussion. The Board's views are subsequently summarized and transmitted to the country's authorities. Currently, nine out of ten member countries agree to publication of a Public Information Notice (PIN), which summarizes the staff's and the Board's views, and four out of five countries agree to publication of the staff report itself.<sup>2</sup>

Public access to Article IV consultations is of comparatively recent origin. It emanates from a pilot project that the IMF initiated in April 1999 to improve its transparency.<sup>3</sup> These consultations are an excellent source of information on the nature of macroeconomic policy advice offered by the IMF to member states. Yet unlike the extensive – albeit contentious – literature on the nature and impact of conditionalities that are enunciated under the IMF's lending arrangements, relatively little effort has been invested in undertaking a 'content analysis' of staff reports that support the Article IV consultations in order to decipher the nature of the macroeconomic policy advice that is offered to member

states.<sup>4</sup> This chapter intends to deal with such a lacuna by undertaking a content analysis of 2009–2010 Article IV consultations (and equivalent country reports if such consultations are not available) for a sample of 30 low income and 20 middle income countries on the following themes:

- (1) fiscal adjustments;
- (2) inflation targeting; and
- (3) employment generation, poverty reduction and expansion of social protection.

The list of low and middle income countries is compiled from World Bank sources. This is supplemented by drawing on another study that assesses the IMF Article IV consultations for 25 low and middle income countries.<sup>5</sup>

A discourse on the nature of macroeconomic policy advice as dispensed by the IMF to a selected sample of its member states is timely because of the proclamations by the Fund that it is now necessary to engage in a ‘wholesale re-examination of macroeconomic policy principles’ in the wake of the Great Recession of 2008–2009 that was triggered by the US-driven financial crisis of 2007–2008.<sup>6</sup> Critics have argued that both the financial crisis and the Great Recession represent the inadequacies of the standard macroeconomic framework, with the IMF widely seen as the internationally recognized custodian of this framework. This is a critique that has been exacerbated by the current debate on the efficacy and relevance of fiscal austerity measures in the debt-distressed economies of the Eurozone and elsewhere.<sup>7</sup>

The standard macroeconomic framework assigns a central role to macroeconomic stability as a prerequisite for economic growth. Macroeconomic stability is assessed in terms of the ability of countries to attain and sustain preferred nominal targets (whether implicit or explicit) pertaining to debts, deficits inflation and the balance of payments. The rationale is that predictability in terms of key nominal targets engenders market confidence, boosts investment, propels growth and supports employment creation and poverty reduction. In principle, these nominal targets should be tailored to country-specific circumstances, but in practice they have often tended to become part of a ‘one-size-fits-all’ approach. Thus, in the case of inflation, the target suggested by the IMF for developing countries is usually less than 5 per cent, while for debt-to-GDP ratios the prudential thresholds are set at 40 per cent, despite the fact that they do not seem to be anchored in robust

empirical evidence.<sup>8</sup> There is also a growing body of evidence that the relationship between macroeconomic stability and growth is asymmetric. Extreme instability – such as hyperinflation and out-of-control budget deficits – kills growth, but it does not follow that restoration of stability will be both necessary and sufficient to promote self-sustaining growth and lead to durable and productive job creation. Hence, as noted, a re-thinking of the standard macroeconomic framework is underway, a process in which leading IMF economists themselves have played an important role.<sup>9</sup>

The content analysis undertaken in this chapter seeks to assess the extent to which the Article IV consultations reveal the persistence of a ‘one size fits all’ approach as they pertain to targets on debts, deficits and inflation; and the extent to which the consultations focus on employment creation, poverty reduction and extension of social protection that go beyond a mere re-affirmation of the view that the primary – if not the sole – role of macroeconomic policy managers is to act as guardians of stability. Such an assessment is important given that the IMF has claimed that, in response to its critics, it has become more flexible in the design of its lending arrangements and in offering policy advice to both borrowing and non-borrowing countries. In the context of low income countries, the IMF makes the point that ‘macroeconomic policies [are] intended to become more supportive of growth and poverty reduction objectives, including by safeguarding social and other critical spending in times of adjustment’ (IMF 2009: 29).<sup>10</sup> Hence, it seems appropriate to assess the IMF Article IV consultations through the prism of employment creation, poverty reduction and extension of social protection.<sup>11</sup>

The rest of the chapter is structured as follows. The second section describes the methodology that is used to undertake the content analysis of the Article IV consultations (and equivalent country reports where such consultations are not available). The chapter then reports the results based on this methodology on the themes of fiscal adjustment, inflation targeting, employment creation, poverty reduction and extension of social protection. A consistent attempt is made to locate the discussion in a broader development context. The concluding section offers a summary of key findings and their implications for the future evolution of the Article IV consultations.

## **Methodology**

The content analysis drew on the 2010 Article IV consultations of each country, and if the 2010 reports were not available a country report

under a lending arrangement was used instead. Some countries (four) did not have any Article IVs or equivalent reports for 2010, in which case the last available report (2009) was used (see Appendix A for the full country list). The policy recommendations that are analysed are usually for the medium term, that is, from 2010 onwards until 2015.

### **Variables representing fiscal adjustment**

As noted in the Introduction, one of the themes explored in this study is the issue of fiscal adjustment. This topic is selected because it is very much part of the current global policy discourse on fiscal consolidation. This is taken to represent IMF advice of urging the government to adopt fiscal discipline through a combination of expenditure adjustments and revenue mobilization. Within the broad sphere of fiscal adjustments, the following areas are highlighted.

- (1) **Explicit spending restraint:** the variable is defined as the IMF recommendation for explicit control or cuts in public spending.
- (2) **Manage public sector debt:** for the purposes of the research, the variable is defined to include cases where the IMF proposes a country to rein in its public debt to more sustainable levels. The IMF also sets a threshold for public debt – if the present value of public debt to GDP ratio exceeds a certain threshold, then that country is at a risk of debt distress, which in turn is classified into ‘high’, ‘medium’ or ‘low’.
- (3) **Mobilize revenue:** the variable is defined to include aspects of tax and non tax revenues along with efforts to reform and simplify the administration and collection process.

### **Variables representing inflation targeting**

This topic is selected because leading IMF economists believe that inflation targeting represents macroeconomic orthodoxy that is in need of revision in the wake of the Great Recession of 2008–2009. For some countries, the IMF explicitly addresses the issue of inflation, while for others there is no such guideline. The IMF usually recommends combating inflation using specific tools entailing a combination of restrictive fiscal and monetary policies

### **Variables representing employment creation, poverty reduction and extension of social protection**

One of the central policy debates in global development is the extent to which the conventional macroeconomic framework is able to support the process of employment creation and poverty reduction other



than through the process of growth itself. The global poverty reduction agenda now rests on two interrelated pillars: (1) the attainment of the MDGs by 2015 as endorsed by the UN system in 2000 and (2) progress towards a social protection floor (SPF) as endorsed by the UN system in 2009. The targets and indicators pertaining to MDGs underwent a significant change in 2005 when a new target of ‘MDG 1b’ was selected as part of the global monitoring system and was defined to represent progress towards ‘full and productive employment and decent work for all, including young men and women’. MDG 1b is the product of a long campaign by the International Labour Organization (ILO) to establish an explicit link between employment and poverty as part of the global poverty reduction agenda. The IMF is a co-author with the World Bank of an annual *Global Monitoring Report* (GMR) that focuses on tracking progress towards the MDGs. Recent GMRs have included a succinct discussion of MDG 1b.

As noted, a global campaign towards a SPF envisages progress towards a minimal set of social protection measures (such as conditional cash transfers) across the developing world in particular. The lead agencies are now the ILO and the World Health Organization (WHO) while the Bretton Woods institutions are cooperating agencies.

In representing variables pertaining to employment creation and poverty reduction, this chapter makes a distinction between ‘explicit references’ to MDGs, MDG 1b and a SPF and ‘general references’ to employment creation and poverty reduction.

Explicit reference to MDGs: this is defined to include any mention of the MDGs in terms of creating and mobilizing resources towards attaining them. For Benin, the IMF has stated that ‘the authorities’ main challenge is to contain the impact of the crisis ... and achieve higher sustainable growth in the medium term to make progress toward the MDGs’.

- (1) Explicit reference to a SPF: this is defined to include any mention of a SPF in terms of directing resources towards its attainment.
- (2) General reference to poverty reduction: this is defined to include any suggestions regarding the improvement of quality and access of education and health services and the efforts to alleviate poverty.
- (3) General reference to social protection: the variable is defined to include any reference to social security transfers, old age pensions and essential health care.

- (4) Explicit reference to MDG 1b: this variable is defined to include any reference to MDG 1b and the ways in which macroeconomic policies can be geared towards supporting it.
- (5) General reference to employment generation: the variable is defined as the IMF advice of suggesting the countries to focus on job creation through economic growth or any other policies concerning employment.

A method of coding was then followed to identify if the IMF recommends or refers to a certain policy or not. A binary coding is used, with 1 = 'Yes' if policy A is recommended for a country and 0 = 'No' if policy A is not recommended for the country. Specific key phrases and sentences were taken into account in order to capture the incidence of policy advice. For example, the policy advice of controlling inflation was checked as 1 if the phrases like 'authorities should remain vigilant and respond appropriately if higher food prices persist' or 'the central bank should be ready to tighten monetary conditions if inflation picks up' appeared in the reports. Similarly, in order to distinguish whether a country is a low income country or a middle income one, a dummy was assigned.

### **Fiscal adjustment and the Article IV consultations: key findings and implications**

This section discusses the theme of fiscal adjustment, demonstrates its prominence in the Article IV consultations and suggests that this is in line with the global advice offered by the IMF. The discussion then explores the extent to which the IMF in its country-level advice reveals a predilection for adopting across-the-board prudential targets pertaining to debts and deficits. This section also highlights the challenge of revenue mobilization to finance core development needs and concludes by noting the risks of adopting a 'one size fits' all approach.

#### **Fiscal adjustment: the alignment between country-level advice and the IMF's global posture**

As can be seen from Figure 1.1, the issue of fiscal adjustment looms large in the IMF staff reports analysed for a sample of 50 low and middle income countries. In 48 cases out of 50, the standard recommendation is that countries should engage in fiscal discipline. In many cases, this generic advice is followed up by specific recommendations entailing some combination of expenditure restraint (24 countries), containment

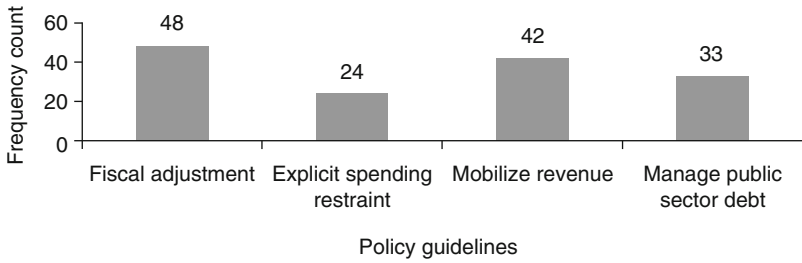


Figure 1.1 IMF policy recommendations for 50 countries

Source: IMF Article IV consultations and equivalent reports (2009–2010, see Appendix 1 for documentation details).

of public sector debt (33 countries) and additional revenue mobilization (42 countries). One study that focuses on PINs finds that the IMF's assessment of the fiscal situation on emerging economies is typically negative.<sup>12</sup>

This emphasis on fiscal adjustment is consistent with the advice that the IMF has issued in its recent global reports. Certainly, during the Great Recession there was a much greater willingness by the Fund to support the cause of counter-cyclical macroeconomic policies. Thus, it observes in the 2010 *Global Monitoring Report* (GMR: 9):

More than one-third of (developing) countries introduced discretionary fiscal stimulus plans in 2009. Absent such support, the impact on individual countries' growth and the shortfall in global demand would have been even greater.

Yet, the Fund and its sister organization the World Bank sees the need for fiscal policy to adapt to the post-Great Recession era and argues that the 'rapid expansion of fiscal deficits and greater reliance on domestic finance in many countries may not be sustainable'. It warns that '[T]he deterioration in debt ratios in low income countries is particularly worrisome'. Hence '[a]ll countries should adopt credible medium-term fiscal adjustment plans to bolster confidence in macroeconomic policies'.<sup>13</sup> This is a theme that is also reflected in the 2011 *GMR* in which the Bretton Woods institutions express the need for developing countries to 'tighten' policies through a combination of restrictive monetary policy, fiscal consolidation and appreciation of the real exchange rate. In particular, the IMF expresses concerns about lax credit conditions that might inhibit the pursuit of fiscal consolidation.<sup>14</sup>

Both the 2010 and 2011 global reports are consistent with the IMF's 2009 review of conditionalities for low income countries. The review notes that '(e)xpenditures that were intended to provide temporary support to the economy will likely need to be scaled back, and fiscal deficits should be reduced as revenues recover' (IMF 2009: 30).

### **Debts and deficits: prudential targets and the Article IV consultations**

Does the Fund adopt a preferred fiscal deficit target or targets when advising developing countries to engage in fiscal adjustment? In its 2005 review of macroeconomic policy design for 15 low income countries with access to concessional lending that were classified as 'mature stabilizers',<sup>15</sup> the IMF noted that several studies showed that the 'level at which deficit reduction no longer boosts growth ranges between 1.5 per cent and 2.5 per cent, although it acknowledged that these estimates were 'subject to considerable uncertainty' (IMF 2005: 40). The 2005 report also pointed out that the observed average deficit was 4.5 per cent of GDP for the countries under review, but it did not see the benefits from further fiscal consolidation. Hence, one can infer that an average fiscal deficit of 4.5 per cent of GDP was deemed appropriate for low income countries.

Is such a norm being used in assessing the conditions of today? A more stringent limit seems to be implicit in the 2010 GMR. For example, the average fiscal deficit of developing countries is projected to expand from approximately 1.5 per cent of GDP 2008 to 4.5 per cent of GDP (GMR 2010: 79). Yet, this expansion is deemed to be 'unsustainable' in many cases. Hence, the implication is that developing countries as a group should aim for fiscal deficits that are closer to the levels that prevailed in 2008 (less than 2 per cent of GDP).

On prudential thresholds pertaining to public debt, the IMF is more explicit in its guidance. A 2002 report noted that, for developing economies, a 40 per cent debt-to-GDP ratio should be used as a prudential threshold when monitoring the sustainability of external borrowing.<sup>16</sup> A 2010 report issued by the Fiscal Affairs Department used this threshold to offer illustrative examples of the extent of fiscal adjustment that would be required for developing countries to stabilize the debt-to-GDP ratio by 2030.<sup>17</sup>

Of course, one can raise questions about the empirical robustness of the prudential thresholds on public debt that are being used for policy guidance. Studies on the public debt-growth link suggest that the level at which public debt harms growth in developing countries

and emerging market economies ranges from 20 per cent of GDP to 90 per cent of GDP (see Table 1.1). Furthermore, the relationship between initial debt-to-GDP ratio and subsequent growth for developing economies is weak. The ‘slope’ in the ‘line of best fit’ is rather shallow. For example, one study (Kumar and Woo 2010: 4) that served as a key input in the IMF’s 2010 *Fiscal Monitor* notes that: ‘a 10 percentage point increase in the initial debt-to-GDP ratio is associated with a slowdown in annual real per capita GDP growth of around 0.2 percentage points per year’. Even this modest negative effect on growth can be easily offset by other variables that promote growth (such as schooling) which, in the aforementioned study, has a positive and statistically significant coefficient that is substantially larger in magnitude than the coefficient on public debt.<sup>18</sup>

The IMF itself is cautious about a rigid adherence to prudential thresholds on public debt. The 2002 report points out, ‘it bears emphasizing that a debt ratio above 40 percent of GDP by no means necessarily implies a crisis – indeed ... there is an 80 percent probability of not having a crisis (even when the debt ratio exceeds 40 percent of GDP).’ Another IMF 2010 paper on fiscal space observes that the debt limit found in the research ‘is not an absolute and immutable barrier ... Nor should the limit be interpreted as being the optimal level of public debt.’ (Ostry et al. 2010).<sup>19</sup> In its 2012 *World Economic Outlook*, the IMF has made the following observation: ‘(T)here is no simple relationship between debt and growth. In fact, our ... analysis emphasizes that there are many factors that matter for a country’s growth and debt performance. Moreover, there is no single threshold for debt ratios that can delineate the “bad” from the “good”.’<sup>20</sup>

This observation pre-dates the controversy that broke out in April 2013 on the empirical credibility of highly influential work that posits a debt-to-GDP threshold of 90 per cent beyond which growth in advanced economies slows down sharply. This controversy has been noted in the Introduction and is re-visited in Chapter 2.

Another point raised in the Introduction should also be emphasized: the issue of public indebtedness cannot be separated from the currency in which the debt is issued. Countries such as Japan, the United Kingdom and the United States appear to have high debt-to-GDP ratios and yet enjoy ‘safe haven’ status largely because they are able to issue debts in credible domestic currencies. Public indebtedness can become a major problem in the presence of what might be called ‘liability dollarization’; that is, a significant portion of debts are held in foreign currency while assets are denominated in domestic currency. It also can

Table 1.1 Public debt and growth: revisiting the evidence

Countries (years)	Public debt and growth: a sample of studies that identify threshold effects	Year
93 developing countries (1968–1998)	The average impact of debt changes from positive to negative at a threshold of about <b>35–40% of GDP</b> . <sup>21</sup>	2002
55 low-income countries (1970–1999)	The average impact of debt changes from positive to negative at a threshold of around <b>30–37% of GDP</b> . <sup>22</sup>	2003
61 developing countries (1969–1998)	The average impact of debt changes from positive to negative at a threshold of about <b>35–40% of GDP</b> . <sup>23</sup>	2004
79 developing countries (1970–2002)	The marginal effect of debt on growth changes from positive to negative, for countries with good policies and institutions, at a threshold of about <b>15–30% of GDP</b> . <sup>24</sup> At a <b>threshold of 70–80% of GDP</b> debt becomes irrelevant to growth. <sup>25</sup>	2005
56 heavily indebted poor countries (1969–2000)	The relationship between debt and growth changes from positive to negative at a threshold of about <b>45% of GDP</b> . <sup>26</sup>	2009
44 developed and emerging countries (200 years and 3700 annual observations)	The relationship between debt and growth changes from positive to negative, for emerging markets, at a debt threshold of <b>60% of GDP</b> . <sup>27</sup>	2010
38 advanced and emerging market economies (1970–2007)	The impact of debt only has a significant effect on growth at a threshold of above <b>90% of GDP</b> . <sup>28</sup>	2010
79 developing countries (1970–2002)	The relationship between debt and growth changes from positive to negative, for countries with good policies and institutions, above the <b>threshold of 20–25% of GDP</b> ; however, debt becomes irrelevant to growth at the threshold <b>above 70–80%</b> . <sup>29</sup>	2010
92 low- and middle-income countries (1990–2007)	Public debt has a negative impact on output growth up to a <b>threshold of 90% of GDP</b> , beyond which its effect becomes irrelevant. <sup>30</sup>	2010
101 developing and developed countries (1980–2008)	The relationship between debt and growth changes from positive to negative at a <b>threshold of 64%</b> for developed countries. <sup>31</sup>	2010
93 low-income countries and emerging markets (1975–2004)	The relationship between noninflationary debt and growth changes from positive to negative at a threshold of <b>35% of bank deposits</b> . <sup>32</sup>	2010

become a major problem for individual members of a currency union who cannot control the currency in which debt is acquired.

In light of the discussion here and caveats attached to preferred targets on deficits and debts, how do the Article IV consultations in the countries under review deal with the theme of fiscal adjustment? The texts of the consultations usually do not incorporate explicit numerical targets on debts and deficits, as can be seen from Table 1.2. Nevertheless, some inferences can be drawn using the fiscal statistics that pertain to the countries under review.<sup>33</sup> With very few exceptions (Albania, India, Kenya, Liberia), the projected fiscal deficits lie below 4 per cent of GDP. There are wide variations in the public debt-to-GDP ratios, but for countries that are classified as having low risk of 'debt distress' by the IMF, the maximum projected debt-to-GDP ratio is 42 per cent.<sup>34</sup>

Table 1.3 captures the fact that both the mean for the observed and projected fiscal deficit for 48 countries that are recommended to undertake fiscal adjustments lie well below 3 per cent of GDP, while the mean of the actual debt-to-GDP ratio is expected to decline from 56 per cent of GDP to 39.7 per cent between 2010 and 2015. This is consistent with GMR 2011, which shows that the projected debt path for the period 2011–2015 for all low income countries converges to 40 per cent of GDP.<sup>35</sup> Thus, the available fiscal statistics suggest that the average debt and deficit projections lie within the norms of prudential targets that the IMF refers to in its global reports and programme reviews.

There are additional ways in which one can evaluate if the advice on fiscal adjustment converges towards common numerical targets or whether they vary on the basis of country-specific characteristics. These are shown in Tables 1.4 and 1.5. In Table 1.4, the key finding that is reported is that even if countries are classified by various criteria (whether they are low income or middle income, whether they are asked to engage in spending restraint and control of public debt, whether they are currently participating in IMF lending arrangements) the differences in the mean values of both the actual and projected debts and deficits are not statistically significant at the 5 per cent level. This is supplemented by Table 1.6 which shows, based on the coefficient of variation (CV), that the projected deficits and debts have lower dispersion than the baseline numbers (2007–2010). This suggests some convergence towards a common target.

A noteworthy feature of the Article IV consultations is the emphasis given to revenue mobilization (42 countries). This is consistent with the 2005 review of macroeconomic policy design for 15 low income countries in which the IMF has clarified the role of enhanced revenue

Table 1.2 Nature of IMF advice on fiscal adjustment

<b>Country</b>	<b>IMF reference to fiscal adjustment</b>
Albania	'They [directors] recommended both one-off and structural revenue and expenditure measures.' Fiscal consolidation a priority.
Armenia	'In addition to their wide-ranging tax reform agenda (described below), strengthening public expenditure and debt management will be critical to achieving fiscal policy goals.'
Bangladesh	'Continued prudent management of expenditures while protecting priority spending are the keys to ensure improvement in the debt indicators.'
Belize	It was considered 'important to create space for priority social spending and infrastructure investment in a manner consistent with the fiscal consolidation strategy.'
Benin	'Directors encouraged the authorities to resist spending pressures in the run up to the 2011 elections.'
Bolivia	'Directors recommended improving the efficiency and equity of the tax system, better balancing spending responsibilities and revenue at different levels of government.'
Burkina Faso	None.
Burundi	'Make spending more efficient by implementing recent public financial management (PFM) reforms and enhancing governance and accountability in the use of public resources.'
Cambodia	'Efforts should also continue to strengthen PFM to ensure effectiveness of priority social and infrastructure spending.'
Cameroon	'Emphasized that it was critical to strengthen expenditure and cash management to maintain fiscal and financial stability, ensure effectiveness of public spending ... reprioritize spending programs; to keep a tight control over budget execution.'
Cape Verde	'Net domestic debt should be kept below 20 per cent of GDP, including by tightly controlling recurrent spending, improving tax administration, and rationalizing tax exemptions.'
Central African Republic	'The authorities need to continue to focus on efficient government revenue mobilization, prudent expenditure and debt management...'
Chad	'The staff recommends a fiscal adjustment strategy based on achieving a steady reduction of the non-oil primary deficit while focusing spending on priority areas.'
Democratic Republic of the Congo	'Comprehensive implementation of the PFM reform agenda is critical to improve the effectiveness of public spending.'

*(continued)*



Table 1.2 Continued

Country	IMF reference to fiscal adjustment
Egypt	'Tightening expenditure controls. ... Expanding the tax base to boost revenue through policy measures and improved tax compliance helps enable long-lasting consolidations.'
El Salvador	'Strict control of government spending in 2010–11 will be critical. ... Fiscal performance would be enhanced by actions to improve public expenditure.'
Ethiopia	None.
The Gambia	'The mission welcomes recent measures to increase government revenues, but strong political will is also needed to ensure that spending is contained. ... Improving fiscal operations depends upon achieving a reliable stream of government revenues, together with firm expenditure control.'
Ghana	'Reduction of the budget deficit to 8 percent of GDP in 2010 will require tight controls over spending. ... Shortfalls in fiscal consolidation are an important risk.'
Guinea-Bissau	'Staff encourages the authorities to implement decisively the policies underlying the draft budget to control spending and raise domestic revenue through the implementation of new tax measures and better revenue administration next year.'
Guyana	'It will be important to strike a balance between allowing for a more gradual fiscal consolidation while staying the course of prudent policies to consolidate fiscal and debt sustainability.'
Haiti	'More efficient and transparent spending and renewed efforts to increase revenue would enhance the credibility of the state.'
Honduras	'It will also be important to exercise strict control over current expenditure, improve the composition of public spending, and strengthen the financial position of public enterprises and pension funds.'
India	'Fiscal consolidation must rest on tight control of nonproductive expenditure. Furthermore, given high government debt and large capital inflows, fiscal consolidation would be the preferred macroeconomic tool to cool the economy.'
Indonesia	'While supporting the strategy, staff also stressed that achieving the medium-term growth targets would require redirection of spending priorities, better budget execution, and improving tax revenue ratios.'
Jordan	'Envisaged fiscal consolidation will have to come largely from the spending side. Wages, pensions to be controlled.'

(continued)

Table 1.2 Continued

Country	IMF reference to fiscal adjustment
Kenya	'The program targets a gradual reduction in the central government primary balance through tax reform and strict control of current spending to bring the debt-to-GDP ratio below 45 per cent at the end of the program period.'
Kyrgyzstan	'Need for near and medium term fiscal consolidation.'
Lao People's Democratic Republic	'Staff noted that the overall fiscal deficit should be put on a medium-term consolidation path, building on recent revenue gains and the phasing out of off-budget spending, while strengthening expenditure management.'
Liberia	'Develop great expertise in expenditure planning and according a higher priority to capital spending at all levels.'
Malawi	'Directors welcomed the tightening of monetary policy and encouraged the Malawian authorities to control the growth of monetary aggregates by ensuring fiscal discipline and prudent credit expansion. ... Continuing reforms in public financial management and tax administration, designed to enhance capacity and strengthen both expenditure control and revenue performance.'
Malaysia	'They stressed that a sound and sustained fiscal adjustment is necessary to put the public debt ratio on a downward path.'
Mali	'Advancing the agenda in PFM reform will be vital to enhancing the quality of expenditure, strengthening cash management, and improving fiscal transparency.'
Mauritania	'Authorities are asked to pursue fiscal consolidation, contain nonpoverty related current spending and enhance the quality of public spending.'
Mexico	'Additional measures are recommended over the medium term in terms of widening the tax base and the introduction of a medium term expenditure planning framework.'
Moldova, Rep. of	'Staff advised a greater emphasis on reducing current spending.'
Mongolia*	'Strict adherence to the targets in the medium-term fiscal framework and fiscal responsibility law will be essential.'
Nepal	'Domestically financed deficits are recommended to be contained along with bolstering of revenue and widening of tax base.'
Niger	'Fiscal policy should be designed to ensure long-term fiscal sustainability by smoothing expenditure over time and avoiding over-borrowing.'

*(continued)*

Table 1.2 Continued

Country	IMF reference to fiscal adjustment
Russian Federation	'Staff welcomed the revenue measures under consideration, but noted that most of the adjustment would need to take place on the expenditure side, through reforms and reductions in discretionary spending.'
Rwanda	'Gradually reduce spending while protecting priority spending.'
Sierra Leone	'Given tight budget constraints and weak project implementation capacity, staff advised the authorities to select projects with the highest priority, contain nonpriority spending, and strengthen domestic revenue collections. ... Expressed concern about the recent acceleration in fiscal spending and the continued use of central bank financing for budget expenditures.'
Solomon Islands	'Staff urged limiting the growth of recurrent spending, in particular the wage bill and parliamentary entitlements, to ensure adequate resources were available for high-impact outlays to consolidate fiscal gains and help achieve development objectives.'
South Africa	'Recommends against procyclical bias in fiscal policy. Avoid allocations to public sector wages.'
Tajikistan	'Staff argued that, as the crisis wanes and external support declines, a bolstering of revenues and some expenditure cuts will be necessary.'
Tanzania, United Rep. of	'Reining in fiscal expenditure is necessary to avoid sharp increases in interest rates and help rebuild the policy buffers that will be needed to mitigate future downturns.'
Togo	'Furthermore, the authorities should be prepared to curtail spending plans if revenue mobilization falls short or adequate financing cannot be identified on concessional terms.'
Turkey	'In addition, the mission urged continued implementation of measures to control health care, wage, and pension expenditure.'
Zambia	'Over the medium term, the IMF recommends "improving spending efficiency".'
Zimbabwe	'They strongly encouraged the authorities to return to cash budgeting, and reduce the wage bill and other low-priority expenditures. Recommends move towards "fiscal sustainability".'

Source: IMF Article IV consultations and equivalent reports (2009–2010).

*Table 1.3* Fiscal statistics and the countries in the Article IV consultations (%)

Variables	Mean observed fiscal deficit (2007–2010)	Mean fiscal deficit projections (2015)	Mean observed debt (2007–2010)	Mean debt projections (2015)
Total (48 countries)	-2.5	-2.36	56.3	41.25
LICs (28)	-1.8	-2.575	62	38
MICs (20)	-3.36	-2.09	47.93	45.53
Programme countries (22)	-2.37	-2.53	62.60	36.09
Non-Programme countries (26)	-2.56	-2.218	50.72	45.96

Source: IMF Article IV consultations and equivalent reports (2009–2010). (LICs: Lower Income Countries and MICs: Middle Income Countries.)

*Table 1.4* Tests of statistical significance (at 5 per cent level) of different mean values of debts/deficits

Country categories	Are the differences in mean values of actual fiscal deficits (2007–2010) statistically significant (at 5% level)?		Are the differences in mean values of projected fiscal deficit (2015) statistically significant (at 5% level)?		Are the differences in mean values of Mean Actual Debt (2007–2010) statistically significant (at 5% level)?		Are the differences in mean values of Projected Debt (2015) statistically significant (at 5% level)?	
	Yes	No	Yes	No	Yes	No	Yes	No
LICs vs MICs		X		X		X		X
Spending restraint vs no spending restraint		X		X		X		X
Control of public debt vs no control						X		X
IMF Programme countries vs non-programme countries		X		X		X		X

Source: IMF Article IV consultations and equivalent reports (2009–2010).

Table 1.5 CV to measure dispersion/uniformity in projections

	Total (48)	LICs (28)	MICs (20)
CV observed fiscal deficit (2007–2010)	1.58	2.54	0.67
CV projected fiscal deficit (2015)	0.85	0.63	1.16
CV observed debt (2007–2010)	0.84	0.94	0.43
CV projected debt (2015)	0.62	0.80	0.39

Source: IMF Article IV consultations and equivalent reports (2009–2010).

mobilization in developing countries. ‘Few countries’, the report observes, ‘have sustained minimally acceptable living standards at tax ratios below 10 per cent’. The review then proceeds to suggest that most ‘low to lower-middle income countries’ should aim for a 15 per cent tax-to-GDP ratio as a ‘reasonably medium-term target’ and even notes that ‘(a) ratio closer to 20 per cent would provide more room for productive expenditures’. Nevertheless, the advice on revenue mobilization as reflected in the Article IV consultations is usually not linked to explicit and rigorous estimates of financing needs in, say, infrastructure investment and more generally for the attainment of the MDGs and the provision of social protection. In other words, the country-level consultations on fiscal policy, while full of general references to revenue mobilization, are not usually accompanied by estimates of the required financing for attaining core development goals and a strategy of sustainable resource mobilization to meet those financing requirements.<sup>36</sup>

### **Fiscal adjustment and the risks of a ‘one-size-fits-all’ approach: some country-specific examples<sup>37</sup>**

One of the key findings is that the emphasis attached to fiscal adjustment in developing countries suggests a predilection for a ‘one size fits all’ approach. The risk of this approach is that the advice on fiscal adjustment might be issued without sufficient attention being paid to country-specific circumstances. The discussion in this section highlights a number of cases that lend some support to this thesis.

The 2010 Article IV for Jordan stated that the government has pursued fiscal consolidation plans for the year 2010 and the medium term, against the backdrop of a downturn in economic activity. The IMF advice stressed that the government should formulate a medium-term debt strategy to curb debt levels and also pursue fiscal consolidation by cutting back on spending, in particular on wages and pensions. The

IMF advice of such a fiscal tightening was prescribed regardless of the forecast of lower growth rates in 2010.

In the case of Nepal, the report acknowledges that debt reduction has created fiscal space that could be used for 'much needed infrastructure, human capital and peace process'. Nonetheless, the report highlights that low levels of external reserves requires debts and deficits to remain at current low levels. This advice on maintaining prudential targets is made regardless, even though the IMF acknowledges concerns that the 2007–2009 global economic crisis had an adverse impact on remittances and tourism earnings.

For Guinea-Bissau, which is currently under an IMF lending arrangement, the IMF referred to the fact that the country will face an uncertain economic outlook. The Fund even acknowledged in the report that Guinea-Bissau will face downside risks from low levels of spending during an era of fiscal adjustment.

Albania has been recommended to undergo fiscal consolidation despite its 'fragile economic recovery'. Fiscal consolidation in this scenario is risky as this might complicate Albania's economic recovery in terms of falling consumption and production levels. There is no specific recommendation for Albania to bolster its revenues, although there is a reference to the reform of tax administration in terms of the underreporting of the taxable income from wealthy individuals and the informal sector.

There are also cases of countries – such as Colombia, Viet Nam, Peru, Indonesia and Botswana – where the Article IVs recommend further fiscal consolidation despite a healthy fiscal situation (measured by a variety of indicators: low risk of debt distress, low debt to GDP ratios, low fiscal deficits).

As a concluding comment, it might be noted that the current pre-occupations with public debt and fiscal consolidation have had the consequence of distracting attention from the crucial role that fiscal policy plays in promoting growth and development. This point is made forcefully in an insightful 'interim report' that informed the deliberations of the Development Committee of the IMF and World Bank in April 2006. The authors of the report note that debts and deficits are useful indicators for 'controlling the growth of government liabilities, but (they) offer little indication of longer term effects on government assets or on economic growth. Conceptually, the long-term impact is better captured by examining the impact of fiscal policy on government net worth'. The report argues that 'there is clearly a need for fiscal policy to incorporate, as best as possible, the likely impact of the level

and composition of expenditure and taxation on long-term growth'.<sup>38</sup> This is where more work needs to be done.

### **Inflation targeting and the Article IV consultations: key findings and implications**

This section discusses the theme of inflation targeting, demonstrates its significant presence in the Article IV consultations and suggests that this is in line with the global advice offered by the IMF. The discussion then explores the extent to which the IMF in its country-level advice reveals a predilection for adopting across-the-board prudential targets pertaining to inflation. This section also highlights the challenge of inflation targeting in the face of supply-side shocks, most notably food price inflation, and concludes by noting the risks of adopting a 'one size fits all' approach. The section emphasizes the need to go back to the refreshing eclecticism of the founding fathers of the IMF who advocated the notion of 'reasonable' price stability within a framework of growth-promoting policies.

#### **Inflation targeting and developing countries: an overview<sup>39</sup>**

A core element of the mainstream macroeconomic framework is the role that is assigned to monetary policy. Ever since New Zealand adopted an 'inflation targeting framework' in 1990, it has become *de rigueur* among most orthodox economists to regard this as a 'best practice' approach. Thus, the primary role of the central bank, both in developing and developed countries, is to foster price stability within a medium-term framework by pursuing low, single-digit inflation using the interest rate as a key policy instrument. This in turn is expected to promote policy credibility and to support growth.

Presently, 44 countries around the world have adopted inflation targeting (IT). Eighteen are emerging and developing countries. The median inflation target of these 18 countries is 3.5 per cent. Excluding the countries in transition, Armenia, Czech Republic, Hungary, Poland, Romania and Serbia, there are 12 developing countries, with a median inflation target of 4.25 per cent.

How were these inflation targets set? Are they anchored in the historical experience of developing countries or on robust empirical evidence? It appears that:

- the inflation targets that are set for emerging economies and developing countries are well below the long-run rate inflation rate

(1961–2009, excluding the very high inflation episode of 1989–1995) and, in many cases, below the actual inflation rate of the 2000s;

- the inflation targets that are set do not take account of nonlinearities in the growth–inflation relationship, that is, there is a threshold below which inflation is likely to have a positive impact on growth, while above this threshold inflation is likely to have a negative effect on growth.

As in the case of setting prudential targets for debts and deficits, the existence of a threshold effect in the growth–inflation relationship should be taken into account when setting inflation targets. Based on an analysis of 19 studies, the threshold effects for the developing world vary from 11 per cent to 40 per cent in cross-section estimates and 6 per cent to 11 per cent in country-specific estimates. Hence, the recorded median targeted inflation rate for the 12 developing economies of 4.25 per cent appears to be ‘too low’ in the sense that it might impose opportunity costs in the form of foregone growth. It should also be noted that the growth–inflation trade-off itself appears to have changed over time, with data from the 2000s suggesting a positive relationship between inflation and growth. This is unlike previous decades when the growth–inflation relationship was negative, but even this negative trend is sensitive to the presence of outliers. In addition, when a comparison is made between a group of IT and non-IT countries at similar levels of income and human development, IT countries do not exhibit better employment and labour market outcomes than their non-IT counterparts.

One of the expected benefits of an IT regime is that it generates a premium for the private sector by reducing inflation risks. This should then lead to reduced costs of borrowing, which should in turn spur private sector investment. Unfortunately, this does not seem to be the case as the available evidence shows that the median cost of borrowing in least developed countries (LDCs) has either remained at elevated levels or gone up in the 2000s (a period of low inflation) relative to previous decades.

One reason why borrowing costs may not come down to capture the premium of reduced inflation risks is that such costs might be determined largely by structural factors. It is likely that in many developing countries the banking system is dominated by a few large financial (and multinational) institutions. Such market imperfections might mean that the premium of reduced inflation risks is being largely captured by these institutions rather than being passed on to borrowers in the form of lower cost of credit. These market imperfections are likely to be compounded by the weak institutional and legal environment



prevailing in many developing countries. IT regimes – however flexible and effective – cannot deal with these structural issues and hence are limited in their capacity to make a major contribution to employment creation.<sup>40</sup>

Perhaps the biggest challenge of pursuing low, single-digit inflation targets for developing countries in the current global climate is the challenge of tackling food price inflation. The correlation coefficient between median inflation rates in LDCs and a global food price index is 0.8.<sup>41</sup> One estimate suggests that about 44 million people might have been pushed into an at least transient episode of poverty in 2008 and 2009 as a result of high and rising food prices.<sup>42</sup> Unfortunately, an IT regime that relies heavily on using the interest rate to foster price stability is not really designed to deal with food price inflation. Not surprisingly, the Bretton Woods institutions take a circumspect view in dealing with inflationary pressures in the current global environment. Thus, in the case of the low-income countries, the *GMR* 2011 (64) offers the following advice:

Most low income countries ... must closely monitor the effects of commodity prices on their domestic inflation rates, given risks associated with rising world prices for food and fuel. If these global shocks persist and feed through to local prices, monetary policy should accommodate the direct impact; however it may need to be tightened in some cases to counter second round effects.

**Inflation targeting and the Article IV consultations:  
a continued emphasis on low, single-digit inflation**

In light of the discussion in the previous section on the appropriateness of setting low inflation targets, what is the position of the IMF on this critical issue? Here, once again, the 2005 review that has been extensively discussed previously is very insightful. It notes that '[t]he desirability of single-digit inflation targets has been questioned' and adds:

[T]he scope for monetary policy to impede growth far exceeds its ability to create it: high inflation above, for example, 40 per cent – is certainly inimical to growth, but keeping inflation low will not by itself induce a growth boom.<sup>43</sup>

It also noted that the empirical literature has identified nonlinearities and threshold effects (ranging from 3 per cent to 40 per cent) in the inflation–growth nexus and that 'one strong argument in support

of higher inflation targets for developing countries is the need to accommodate exogenous shocks'.<sup>44</sup> Despite these concerns and caveats, the IMF concluded that, on balance, 'the broad objective of monetary policy ... should continue to be keeping inflation in the single digit range'.<sup>45</sup> It is perhaps not surprising that a 2007 review by the Independent Evaluation Office (IEO) found that an inflation rate below 5 per cent was usually targeted in 29 sub-Saharan African (SSA) countries that had IMF-supported programmes in the 2000s.<sup>46</sup>

What about the advice that the IMF has given to the countries under review here in terms of controlling inflation? The content analysis reveals that the IMF explicitly recommended control of inflationary pressures as a priority of monetary policy in 27 out of the 50 countries covered by this study (Tables 1.6 and 1.7).<sup>47</sup> This is consistent with its global advice that developing countries need to respond to renewed inflationary pressures in the late 2000s – although this applies mainly to middle income rather than low income countries (GMR 2011: chapter 3).

Table 1.6 records the projected inflation rates for the 27 countries that vary from 2.2 per cent (Jordan) to 8.25 per cent (Democratic Republic of Congo), but the mean projected inflation rate for all 50 countries is very close to the 5 per cent threshold that appears to have been used by the Fund in its policy advice in the past and is consistent with the predilection for single-digit inflation rates that it endorsed in its 2005 review.

Table 1.7 highlights the nature of advice issued to the aforementioned countries on inflation control. An important feature of Table 1.7 is that it suggests that in the majority of cases the sources of inflation are both demand and supply driven; in some cases they are exclusively supply driven. This implies that prescribing control of inflation through standard monetary policy instruments in cases where inflation is not largely or exclusively demand driven might not be effective. Indeed, as noted already and argued at length in Chapter 2, the major challenge that many developing countries now face is the resurgence of food price inflation against which the use of standard monetary policy instruments is likely to be ineffective.

In a number of cases, the need to use the exchange rate as an anti-inflation tool is highlighted, although the standard advice is to aim for exchange rate flexibility.<sup>48</sup> This raises additional issues of the trade-off that is implicit in the use of the exchange rate as an instrument of inflation control (by restraining imported inflation) and the use of the exchange rate to sustain international competitiveness.<sup>49</sup> If the exchange rate is used as an anti-inflation tool and becomes part of the monetary policy framework, then it might impede the capacity of policy-makers

Table 1.6 IMF on inflation projections in 27 countries

Country	Inflation projections (medium term 2015, in %)
Albania	3
Armenia	4
Bangladesh	4.50
Benin	West African Economic and Monetary Union (WAEMU) convergence criterion of 3
Bolivia	3.50
Cambodia	3
Democratic Republic of Congo*	8.25
Egypt	6.50
Ethiopia	6.10
Ghana	5
Guyana	4
Haiti	5
Honduras	5
India	5.20
Indonesia	3.80
Jordan	2.20
Kenya	5
Kyrgyzstan	6.20
Malawi	5.90
Mauritania	5
Moldova, Rep. of	4
Mongolia	5
Russian Federation	5.20
Rwanda	5
Solomon Islands	4–5 range
Turkey	4.10
Zambia	5

Source: IMF Article IV Consultations and equivalent reports (2009–2010).

\**World Economic Outlook*, October 2010.

to use it to influence resource allocation between traded and non-traded goods sectors. This is an important concern given that the empirical literature suggests that competitive and stable real exchange rates have a statistically significant impact on international competitiveness.<sup>50</sup>

### **Moving beyond a single-digit inflation targeting framework: distinguishing between general principles and numerical targets**

The pursuit of low, single-digit inflation in developing countries within a ‘one-size-fits-all’ approach seems to be reflected to some extent in the Article IV consultations reviewed here. For the 27 countries on which

Table 1.7 Nature of IMF advice on inflation targeting

Country	Source(s) of inflation	IMF recommendation
Albania	Supply side and demand side	Recommended cautious monetary stance to be followed with emphasis on 'anchoring inflation expectations'.
Armenia	Supply side	Recommended that policy rates should be raised further if there is evidence of demand pressures or supply shocks on inflation.
Bangladesh	Demand side	Has been asked to <i>hike up interest rates</i> to prevent inflation because of the accommodative conditions.
Benin	Supply side	Recommended to use <i>monetary policy</i> monitor inflation and <i>use exchange rate as nominal anchor</i> if needed.
Bolivia	Demand side	Recommended to tighten monetary conditions to prevent excess liquidity, credit creation and inflation.
Cambodia	Demand side	Recommended to reduce the injection of riel liquidity to avoid inflationary pressures and authorities asked to monitor 'liquidity overhang'.
Democratic Republic of Congo	Supply side	Central Bank asked to refrain from lowering interest rates until inflation subsides and welcomes the tightening of the monetary policy. 'Maintaining low inflation is critical to consolidating macroeconomic stability and alleviating its effect on the DRC's poor and vulnerable households, who have no protection against rising prices.'
Egypt	n.a.	The central bank should be ready to tighten monetary conditions if inflation picks up.
Ethiopia	Demand side	'Maintaining a low reserve money growth policy in 2010/11 is needed to sustain a low inflation environment along with raising interest rates.'
Ghana	Supply side	'The authorities should stand ready to tighten policies, if needed, to avoid an upturn in inflation expectations.'
Guyana	Demand side	'It will be important to prevent an emergence of inflationary pressures as the recovery ensues.'
Haiti	Supply side and demand side	'Further improvements in the monetary framework will be critical to ensuring the absorption of aid inflows while avoiding excessive inflationary pressures.'
Honduras	n.a.	'The monetary and exchange rate policies should be geared at keeping inflation low...'
India	Supply side	Further monetary tightening required to lower inflation.

(continued)

Table 1.7 Continued

Country	Source(s) of inflation	IMF recommendation
Indonesia	Supply side	A 'continued effective communication of a proactive policy' required to lower the level of inflation.
Jordan	Supply side	The central bank should be ready to tighten monetary conditions if inflation accelerates. The exchange rate provides an 'appropriate' nominal anchor.
Kenya	Demand side	If inflationary pressures arise, the central bank should be ready to tighten liquidity conditions. Should also adopt a formal inflation targeting framework.
Kyrgyzstan	n.a.	Monetary policy to be used against signs of exchange rate or inflationary pressures. Central bank to 'mop up excess liquidity' as well.
Malawi	Demand side	Recommends that monetary policy should rely more heavily on interest rate adjustments to inflation targets.
Mauritania	Supply side	Recommended authorities to be vigilant and 'respond appropriately' if <i>higher food prices and foreign exchange market pressures intensify</i> .
Moldova, Rep. of	Supply side	The IMF 'agreed' that the current monetary stance is appropriate to control inflation.
Mongolia	n.a.	'The increase in spending, however, will increase inflation (especially the wage and pension increase) and place a heavier burden on monetary policy to contain inflation.'
Russian Federation	Demand side	Monetary policy should be focused on inflation control.
Rwanda	Supply side and demand side	Recommends the authorities to combat inflation by ' <i>strengthening monetary and exchange rate policies to ensure low and stable inflation</i> '. Exchange rate used as a nominal anchor to reduce imported inflation.
Solomon Islands	Supply side	Recommended the central bank to act if demand led inflationary pressures rise.
Turkey	Demand side	Credit growth should be moderated to dampen inflation expectations.
Zambia	Demand side	'Staff and the authorities agreed that a moderate tightening of monetary policy was appropriate, particularly given the liquidity injection stemming from the recent maize purchase.'

Source: IMF Article IV consultations and equivalent reports (2009–2010). The classification of 'demand-side' and 'supply-side' sources of inflation are based on descriptions provided in the country-specific documents.

there are specific references to the need to control inflation, there is only one case where the projected inflation seems to be significantly above the 5 per cent target. The setting of low, single-digit inflation is not anchored in robust empirical evidence as the IMF itself noted in its insightful 2005 review. In addition, such a monetary policy framework based on low, single-digit inflation is not equipped to deal with food price inflation nor has it brought about any sustained decline in the cost of borrowing in low income countries. This is an important point given that access to finance and the cost of credit are identified as important constraints by the private sector in developing countries in enterprise surveys.

A possible way forward in dealing with the issue of setting appropriate targets for inflation in developing countries is to focus on general principles rather than numerical benchmarks that are of questionable empirical validity. The core principle of price stability must be upheld but tailored to suit country-specific circumstances. This is the substance and spirit of the IMF's articles of agreement. Thus, one of the key obligations of each member state is that it should:

endeavor to direct its economic and financial policies toward the objective of fostering orderly economic growth with reasonable price stability, with due regard to its circumstances.<sup>51</sup>

Hence, there is a case for emphasizing this principle when prescribing macroeconomic policy advice to developing countries.

### **Employment creation, poverty reduction and social protection and the Article IV consultations: key findings and implications**

This section focuses on the theme of employment creation, poverty reduction and social protection and explores the manner in which, and the extent to which, they are reflected in the Article IV consultations in the sample of 50 countries assembled for this study. The discussion makes a distinction between 'explicit references' to MDGs, MDG 1b and the 'social protection floor initiative' and 'general references' to employment, poverty and social protection. It also seeks to clarify the extent to which the Article IV consultations consider employment generation and poverty reduction as by-products of growth and the extent to which there needs to be determined public action. In particular, the issue of the financing requirements of meeting the MDGs and the SPF initiative is highlighted. The discussion notes that donor assistance through traditional means will simply not be able to meet

the financing requirements implicit in the attainment of the MDGs and the SPF initiative. This means that domestic resource mobilization will have to play a key role. This will need to be augmented by the need to find alternative means of expanding traditional sources of development assistance.

### **The employment–poverty link: the long road to MDG 1b**

The MDGs, launched after the UN Millennium Summit of September 2000, represented a renewed commitment by the international community to global poverty reduction. At the time the MDGs were unveiled, there was no reference to the attainment of ‘full and productive employment and decent work for all’ as a vehicle for sustainable reductions in global poverty. This omission happened despite the fact that the World Summit on Social Development that led to the Copenhagen Declaration of 1995 had ‘full employment as a basic policy goal’ and was an integral part of its ‘ten commitments’.<sup>52</sup> It took more than a decade before ‘full and productive employment and decent work for all’ became a key target (target 1b) under the first MDG goal of eradicating extreme poverty and hunger.<sup>53</sup>

MDG 1b is the result of a long campaign by the ILO, but how has the IMF and its sister organization reacted to its incorporation in the global monitoring framework? One way of assessing its importance to the work of the Fund is to focus on its use and citation in the *GMRs* jointly produced by the Fund and the World Bank. As noted at previous junctures, the *GMRs* focus on reviewing the global progress towards attaining the MDGs. There is usually at least one chapter that is devoted to macroeconomic policy issues. The *GMR* 2010 briefly discusses MDG 1b and concludes that ‘progress on full and productive employment, especially for women, was lacking even before the crisis’ (18). In *GMR* 2011, however, any discussion of MDG 1b is notably absent, an omission that is also reflected in the Article IV consultations as will be shown. Of course, one challenge in monitoring MDG 1b is that the target has a universalistic orientation and is not time-bound. This is unlike many other MDGs. Despite this, the use of MDG 1b can serve as a basis for discussing labour market and employment dimensions of development that have so far received relatively little attention in the *GMRs*.

### **From narrowly targeted programmes to a social protection floor: an overview<sup>54</sup>**

The traditional literature on targeted poverty reduction programmes argues against adopting a comprehensive approach to social protection

because it maintains that, given budget constraints, governments in developing countries should target the poor in providing income transfers and minimize 'leakages' of such transfers to the non-poor and the near-poor. This approach is inadequate in coping with the socio-economic consequences of large-scale macroeconomic crises. Furthermore, the need to build political support for progressive social policies requires a broader conceptualization of poverty that focuses not just on the currently poor, but also the near poor and the interests of the burgeoning middle class in developing countries who often lack economic security.<sup>55</sup> In addition, the limitations of a fragmented approach to social protection, which highlights specific policy instruments rather than the importance of adopting a system-wide approach, are also increasingly being recognized in the post-crisis era.

Elements of a SPF are gradually being built up in developing countries. Currently, there are basic social welfare schemes in 'around 30 developing countries reaching more than 300 million beneficiaries'.<sup>56</sup> Conditional cash transfers, including employment guarantee schemes, are regarded as among the most lauded social policy innovations in developing countries in recent years.

Despite these innovations, there is a long way to go given that the majority of the world's population do not have access to adequate social security coverage. In low income countries, more than 90 per cent do not have access to social protection. It is against such a context that the notion of a 'social protection floor' initiative emerged and was endorsed by the UN system in April 2009. Its philosophical premise is that all citizens in the developing world are entitled to nationally adapted social protection coverage entailing both labour market and other social assistance and social insurance programmes. ILO estimates have shown that even low income countries can afford a SPF with transitional donor assistance.<sup>57</sup> The challenge is to harness the necessary resources to invest in the SPF initiative and to ensure that it acts as an automatic stabilizer to temper the consequences of economic volatility.<sup>58</sup>

The lead agencies for promoting the agenda of a SPF are ILO and WHO, while the IMF and World Bank are cooperating agencies. The Fund's position is summarized by the IMF's special representative to the UN who extolled the merits of a SPF but also noted that such a scheme requires a 'very careful assessment of its long and medium-term financing implications'.<sup>59</sup> He drew attention to ILO-IMF collaboration in a few pilot countries where the ILO would analyse the gaps in the social protection system and costs of attaining a SPF while the IMF would analyse its fiscal sustainability.



## Employment, poverty and social protection and the Article IV consultations: key findings

As Figure 1.2 shows, in a majority (31 out of 50) cases, the Article IV consultations make ‘general references’ to poverty reduction and social protection. However, ‘explicit references’ to MDG 1b and SPF are virtually non-existent. While one could argue that the SPF initiative is of very recent origin and has not had time to make its way to the 2010 Article IVs, the same cannot be said about MDG 1b, which has been part of the global poverty reduction agenda since 2005 and was formally incorporated in the global monitoring system of the MDGs by the UN system since 2008. As noted, despite the lack of time-bound indicators, MDG 1b can serve as a basis for discussing progress towards ‘full and productive employment’ in developing countries.

One could argue that a failure to anchor the discussion in the Article IV consultations in MDG 1b is not a concern so long as employment dimensions of development are adequately discussed. This is where the Article IVs also have not paid a great deal of attention. Where an analysis is made, it is usually through the particular prism of high public sector wages, labour market rigidities and lack of sufficient growth as causes of unemployment. Policy menus then entail structural reforms, including public sector pay and labour market reform, to increase growth and a renewed commitment to macroeconomic stability. Table 1.8 summarizes the IMF perspectives on employment in a sample of staff reports associated with the 2010 Article IV consultations.

There are 31 cases in which there is a ‘general reference’ to poverty reduction in the Article IVs. In many of these cases, but by no means all,

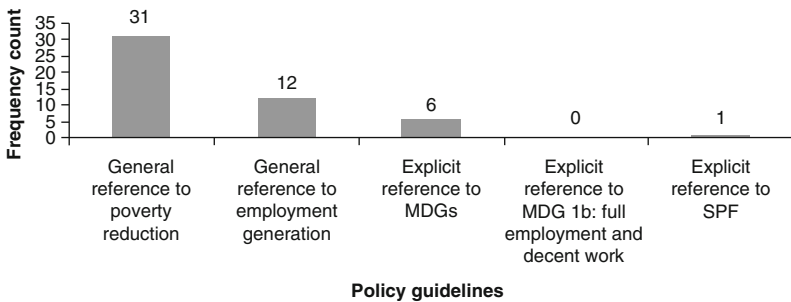


Figure 1.2 IMF policy recommendations on employment generation, poverty reduction and social protection

Source: IMF Article IV Consultations and equivalent reports (2009–2010).

*Table 1.8* Nature of employment analysis in the Article IVs: some country-specific examples

<b>Nature of employment analysis</b>	<b>Countries</b>
Impact of exchange rate appreciation on employment and labour market rigidities.	China
Employment statistics quoted, but not analysed.	Colombia, India, Indonesia, Paraguay, Peru, Thailand
Structural reforms and attention to macrostability will boost growth and assist employment creation.	Egypt, Jordan
High public sector wages and labour market rigidities as causes of unemployment.	Benin, Botswana, Cape Verde, South Africa, Senegal, Turkey
Training and skills development to improve employability.	South Africa, Turkey

*Source:* Roy and Ramos (2012) out of a sample of 25 countries.

*Table 1.9* Nature of poverty analysis in the Article IVs: some country-specific examples

<b>Nature of poverty analysis</b>	<b>Countries</b>
Sustained labour-intensive growth.	Rwanda
Finding fiscal space to support financing of pro-poor spending and enhancing access to basic services.	Benin, Ethiopia, Mauritania, Rwanda
Promoting financial inclusion within a framework of prudential regulation.	Liberia, Rwanda
Poverty as a by-product of growth.	Egypt, The Gambia, Guyana, Kyrgyzstan, Niger

*Source:* IMF Article IV consultations and equivalent reports (2009–2010).

the Article IVs interpret poverty reduction as a by-product of growth. Where specific recommendations are made, they entail initiatives to promote financial inclusion, fiscal space to support financing of pro-poor spending and to enhance access to basic social services and the need for ‘sustained labour-intensive growth’ to reduce poverty and unemployment (Table 1.9).

As noted at a previous juncture in the discussion, a key policy challenge is the sustainable financing of the MDGs and the SPF initiative. Given the IMF’s recognized expertise on fiscal sustainability analysis, it is fair to suggest that the Article IV consultations should pay considerable

attention to an assessment of the financing needs pertaining to interventions to support employment creation, poverty reduction and enhancing social protection coverage. Yet this is an area where there is paucity of analysis. There are 19 cases where there is a discussion of, or at least some reference to, budgetary allocations to pro-poor spending and public expenditure on social protection are made, and seven cases where financing needs pertaining to infrastructure are noted (Tables 1.10 and 1.11).

Table 1.10 Financing needs for infrastructure

Country	Financing needs for infrastructure investment
Burkina Faso	Capital expenditure is projected at 12.5 per cent of GDP, with an important share allocated to the rehabilitation of infrastructure. <i>It is reasonable to estimate at least 5%-10% of GDP may be needed to finance infrastructure.</i>
El Salvador	'Boost tax revenue by at least 1½ per cent of GDP. Such a reform would establish a sustainable resource base for financing needed infrastructure...' An indirect mention of a figure maybe.
India	'...But a mooted figure of US\$1 trillion would boost infrastructure investment to 9 percent of GDP' – Authorities' views for the next Plan.
Liberia	'Over the next ten years, meeting Liberia's infrastructure needs would require at least US\$3.7 billion (382 per cent of 2010 GDP). This is the conclusion of the multi-stakeholder Africa Infrastructure Country Diagnostic (AICD), completed in 2010, which covered roads, power, ports, water and sanitation, and telecommunications, but excluding ports that are assumed to be privately financed.'
Sierra Leone	'For 2011–13, the government estimates an infrastructure need of US\$1.4 billion, of which, based on current commitments, donors are projected to finance about US\$176 million and the government US\$161 million. This leaves a financing gap of about US\$1.1 billion, or 15 per cent of 2011–13 GDP. The government expects that donors could provide an additional US\$335 million. Furthermore, the plan is to attract private investors to construct and own the Bumbuna II hydropower station at an estimated cost of US\$624 million. The remaining financing gap is US\$96 million, which accounts for 1.4 percent of 2011–13 GDP.'
Tanzania	'The government reasserts its commitment to use the programmed domestic financing of 1 per cent of GDP each year...'
Zambia	'A recent World Bank study assesses that Zambia needs to spend an average of US\$1.6 billion a year over the next decade to develop its infrastructure.'

Table 1.11 Financing needs for pro-poor spending

Country	Pro-poor expenditure and social protection financing needs
Albania	'Social protection transfers' projected to be 1.7 per cent of GDP in 2011.
Armenia	Currently, health and education spending at 4 per cent of GDP is low for the given income level. 'Social allowances and pension' projected to be 6.5 per cent of GDP in 2012 and 2013.
Benin	'Expenditures will be targeted to support growth and poverty reduction. Total expenditure is expected to represent 25.9 per cent of GDP.' Authorities' view.
Bolivia	'Social programmes' projected to be 2.2 per cent of GDP for 2011.
Burkina Faso	Total poverty reducing expenditure projected to be 6.4 per cent of GDP in 2010.
Burundi	Pro-poor expenditure projection for 2011 is 18.9 per cent of total expenditure.
Democratic Republic of Congo	Projected pro-poor spending for 2011 is 6.7 per cent of GDP.
Egypt	'Transfers to Social Insurance Fund' projected to be 0.6 per cent of GDP in 2010/2011.
El Salvador	Refers to the 'General AntiCrisis Plan (PGA), which channels spending of about 1 per cent of GDP to social programs'. Refers to subsidy reforms to free resources of 0.3 per cent of GDP in 2011 to be redirected towards social spending.
Ethiopia	Projected 2010/2011 'poverty reducing expenditure' is 4.7 per cent of GDP.
Ghana	'Total poverty spending' projected to be 9.1 per cent of GDP in 2011.
Guinea-Bissau	'In 2010–2012, the government is committed to using at least 50 per cent of tax revenues for current and domestically financed capital spending in health, education, agriculture, and infrastructure.'
Honduras	'The government has committed resources equivalent to 1.6 per cent of GDP to all social investment programmes in 2011.'
Kyrgyzstan	Social Fund projected expenditures for 2011 is 9 per cent of GDP. Transfers to Social Fund is 3.1% of GDP, projected for 2011.
Moldova, Rep. of	Transfer to 'Social Insurance Fund' contributions projected 12.6 per cent of GDP for 2011. Refers to 'The amended budget will thus provide for a 37 per cent

*(continued)*

Table 1.11 Continued

Country	Pro-poor expenditure and Social Protection financing needs
Russian Federation	increase in capital expenditure and over 50 per cent increase in social assistance spending relative to 2009'.
Sierra Leone	'Social policies' 2010 projected to be 0.8 per cent of GDP. Total projected poverty expenditure for 2011 is 5.5 per cent of GDP.
South Africa	Projected 'social spending' for 2012/13 is 16 per cent of GDP.
Zambia	'Financing for the social sectors and infrastructure development is projected to increase to 50 per cent of the budget'.

Source: IMF Article IV consultations and equivalent reports (2009–2010).

Yet, a dissection of the Article IVs suggests that the discussion is often a reference to government-provided estimates or estimates generated by others. They cannot really be regarded as an in-depth assessment of financing needs.

## Conclusion

The Article IV consultations play an important surveillance function and are an excellent source of information on the nature of the macroeconomic policy advice that the IMF offers to its member states. Since 1999, as a result of a much welcome effort by the Fund to enhance transparency, a large majority of the staff reports that support the Article IV consultations have become publicly accessible and electronically downloadable documents. Yet a content analysis of these documents has not been undertaken as extensively as the analysis of IMF conditionalities. This study thus attempted to address this gap by assessing the nature of the macroeconomic policy advice that the IMF provided to a sample of 30 low and 20 middle income countries in 2010 (and in a few cases in 2009) through the Article IV consultations. This was supplemented by drawing on an assessment of IMF Article IV consultations that focused on 25 low and middle income countries. Three themes were explored: (1) fiscal adjustment, (2) inflation targeting and (3) employment, poverty and social protection. The themes were in turn linked to the broader development context. This study was deemed to be timely because the IMF has, in various policy statements, rightly highlighted the need to pay more attention to the social dimensions of growth in

undertaking macroeconomic policy reviews and has even suggested a wholesale re-examination of macroeconomic policy principles.

The evidence assembled in this chapter does not seem to support the view that a lot has changed in terms of the country-level advice that the IMF offered to its developing country member states in 2010. Fiscal adjustment loomed large (48 out of 50 cases) with a predilection for a 'one-size-fits-all' approach characterized by an implicit preference for low fiscal deficits (usually 2 per cent of GDP) and low public debt to GDP ratios (usually 40 per cent of GDP). These targets are also consistent with the global posture of the IMF. The 'one size fits all' approach – while useful in reducing the monitoring costs of multilateral policy surveillance – has an uneasy existence with the empirical literature as well as the IMF's own analyses that numerical targets pertaining to deficits and debts are not anchored in robust evidence and not compatible with the need to align macroeconomic policy advice with country-specific circumstances.

The IMF maintained after a 2005 review that, despite the ambivalent nature of the evidence, there is on balance the need to emphasize low, single-digit inflation as an appropriate target for developing countries. The study found that the pursuit of low, single-digit inflation (5 per cent or less) seemed to be a key implicit benchmark in the IMF's policy advice in 27 cases where control of incipient inflationary pressures is seen as a priority of macroeconomic policy. The projections for the 50 countries under review showed that there was indeed an expected convergence towards a 5 per cent inflation rate for the 2011–2015 period.

The study noted that perhaps the biggest challenge facing a single-digit inflation targeting framework is that it is not effective enough in dealing with food price inflation. It also has not yielded the expected dividends in terms of reducing the cost of borrowing. As a result, lack of access to finance and high cost of credit persist as major constraints on the growth of the private sector in developing countries.

In some cases, the Article IVs suggested that member states should continue to use the exchange rate as an anti-inflation tool. The study noted that this raised additional issues of a trade-off between use of the exchange rate as a means of restraining imported inflation and its use as a tool for fostering international competitiveness.

The study found that the Article IV consultations contained ample references to poverty reduction, but the discussion is usually rudimentary. In the case of employment, there are no references to MDG 1b or to the UN-endorsed SPF. This lacuna is in line with the insufficient coverage of MDG 1b in the *GMRs* that the Fund co-authors with the World

Bank. In the small number of cases in which employment analysis was undertaken, job creation was usually either seen as a by-product of growth or perceived through the particular prism of high public sector wages and labour market rigidities.

What lessons can be drawn for the future evolution of the Article IV consultations? There is a case for moving beyond monitoring debts, deficits and inflation from the perspective of simple numerical targets that are of questionable empirical validity. One should, of course, uphold the core principles of fiscal sustainability and price stability, but they need to be tailored to country-specific circumstances, rather than being linked to a formulaic approach that highlights the monitoring of a few nominal targets. This is in line with the substance and spirit of the Article of Agreements of the IMF.

The discussion of fiscal issues needs a more explicit development dimension. This means a more regular and rigorous analysis of the sustainable financing of the MDGs and the SPF. There are, in some Article IVs, references to financing needs of developing countries in the areas of infrastructure and pro-poor expenditure, but they are usually no more than a citation of estimates provided by the government or other agencies. Given the IMF's long-standing expertise on the analysis of fiscal issues, one hopes that the future generation of Article IVs will address this gap. This will transform the IMF's continued and justified emphasis on domestic resource mobilization from an issue of fiscal adjustment to the much more profound and long-term issue of dealing with core development challenges.

There is a case for redressing the insufficient emphasis given to the poverty-employment link. As noted, where employment analysis is undertaken, it is usually of a perfunctory nature. The authors of future staff reports that underpin the Article IV consultations can substantially enrich the nature and scope of the macroeconomic policy advice if a determined attempt is made to show how the macroeconomic policy framework can support sustained and productive employment creation.

Finally, it is worth reporting here that there have been some important changes in 2012 and 2013 that suggest that the IMF is indeed beginning to engage more seriously with some of the deficiencies in the Article IVs that have been documented in this chapter. To start with, templates on employment projections that can be included in the Article IVs have been developed and are already in use (IMF 2012).

The IMF has also undertaken its own content analysis of Article IVs – perhaps the first time that it has done so in a systematic manner. In its overarching *Jobs and Growth* report (IMF 2013), there is a brief section

dedicated to 30 Article IVs spread across advanced economies (8), emerging economies (12) and low income economies (10).<sup>60</sup> The evaluation concludes that the approach taken in bilateral surveillance is to recommend policies that are ‘best suited to bringing about or maintaining macroeconomic stability’ (IMF 2013: 34). The evaluation finds that the discussion of labour market issues ‘appear limited’, while ‘enhancing (labour market) flexibility is a frequent theme’ (IMF 2013: 35). The evaluation is candid in noting that there is ‘only a limited discussion of efficiency-equity trade-offs and there is little apparent tailoring of policies to country preferences’ (IMF 2013: 35).

The *Jobs and Growth Report* then proceeds to recommend that in its country and policy work the Fund should focus a lot more on analytical work on the determinants of inclusive growth and that advice on labour market policies should include collaborative work with other international institutions, most notably the World Bank, the OECD and the ILO. The expectation of the international community is that these recommendations will, over time, be consistently implemented.

## Appendix A1

The following is the list of countries reviewed in this chapter. All documents consulted pertain to 2010, except four cases which pertain to 2009.

Albania, Armenia, Bangladesh, Belize, Benin, Bolivia, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, Central African Republic, Chad, Democratic Republic of Congo, El Salvador, Ethiopia, The Gambia, Ghana, Guinea-Bissau, Guyana, Haiti, Honduras, India, Indonesia, Jordan, Kenya, Kyrgyzstan, Lao People’s Democratic Republic, Liberia, Malawi, Malaysia, Mali, Mauritania, Mexico, Republic of Moldova, Mongolia, Nepal, Niger, Russian Federation, Rwanda, Sierra Leone, Solomon Islands, South Africa, Tajikistan, United Republic of Tanzania, Togo, Turkey, Zambia, Zimbabwe.

## Notes

1. This is a revised version of Islam et al. (2012).
2. See <http://www.imf.org/external/ns/cs.aspx?id=51> (accessed 20 August 2013). Edwards et al. (2012) trace the evolution of greater transparency with respect to the IMF Article IVs. Note that there are significant variations by regions in the public release of the IMF Article IV reports ranging from 46 per cent in sub-Saharan Africa to 100 per cent in the OECD countries.
3. See <http://www.imf.org/external/pubs/pilot.htm> (accessed 20 August 2013).
4. For a meta-analysis of studies that assess the impact of IMF conditionalities, see Steinwand and Stone (2008). As noted, the literature on the content



analysis of Article IV consultations is relatively scarce. Two good examples are Momani (2006) focusing on the case of Canada and Fratzscher and Reynaud (2011) focusing on 36 emerging economies. See Momani (2006); Fratzscher and Reynaud (2011). Note that, unlike this chapter, Fratzscher and Reynaud use the PINs rather than the full staff reports.

5. Roy and Ramos (2012).
6. Blanchard et al. (2012).
7. See Grauwe (2011) 'The Governance of a Fragile Eurozone', University of Leuven and CEPs', April, for an insightful account of the predicament faced by debt-distressed Eurozone countries.
8. These 'preferred' targets are discussed more fully at a later juncture.
9. See Blanchard et al. (2012). Note that the introductory chapter to this volume points out that the 2013 update of 're-thinking macroeconomic policy' reflects a preoccupation with public debt management and hence a possible reversion to 'business as usual'.
10. IMF (2009).
11. One could argue that the discussion in this chapter omits some important issues, such as capital controls. On the other hand, seeking to cover a wider range of issues would dilute the focus of this chapter.
12. Fratzscher and Reynaud (op. cit).
13. Global Monitoring Report (2010).
14. Global Monitoring Report (2011).
15. The moniker 'mature stabilizers' refers to countries that have managed to consolidate macroeconomic stability.
16. IMF (2002).
17. IMF (2010).
18. See Chapter 2 in this volume.
19. Ostry et al. (a)(2010). Note that the analysis is in reference to high income countries only.
20. IMF (2012, chapter 3: 9).
21. Pattillo et al. (2002).
22. Clements et al. (2003).
23. Pattillo et al. (2004).
24. Cordello et al. (2005)
25. In countries with bad institutions, the threshold is 15–53 per cent.
26. Baseerit (2009).
27. Reinhart and Rogoff (2010).
28. Kumar and Woo (2010).
29. Cordello et al. (2010).
30. Presbitero (2010).
31. Caner et al. (2010).
32. Abbas and Christensen (2010).
33. Data from the *World Economic Outlook* (WEO) was used in cases where the relevant fiscal statistics from the country reports were missing.
34. Debt sustainability analyses that lead to various categories of 'debt distress (low, medium, high) are standard features of IMF Article IV consultations.
35. Global Monitoring Report (2011: chapter 2).
36. These issues are revisited in the section on employment creation, poverty reduction and expansion of social protection.

37. This section draws on Roy and Ramos (2012).
38. Development Committee (2006: i). This report was attached to the 23 April 2006 World Bank's Development Committee meeting.
39. The discussion summarizes findings that are discussed in greater depth in Chapter 3 in this volume.
40. See Chapter 3 in this volume.
41. Authors' estimates.
42. The March 2013 issue of the World Bank's 'Food Price Watch' notes that '... international food prices remain very high and still close to their historical peaks', despite sustained declines between October 2012 and February 2013. See World Bank (2013) 'Food Price Watch', Year 4, Issue 13, March. See also ADB (2011) on the causes and consequences of food price inflation in developing Asia.
43. IMF (2005: 18).
44. IMF (2005: 20).
45. IMF (2005: 53).
46. IMF (2007). See also Goldsbrough et al. (2007). The authors show that in 22 of the 32 IMF programme countries, the IMF targeted an inflation rate of 5 per cent or less as part of its policy surveillance.
47. The reasons why the remaining countries in the sample were not given explicit advice on inflation control are unclear. Presumably, significant inflationary pressures were perceived by the IMF in 27 countries, but not in others.
48. As Roy and Ramos (2012: 8) observe: 'The IMF's recommendation of allowing greater exchange rate flexibility is a common practice throughout the (Article IV) reports'. On the other hand, The IMF, based on data available as at April 2008, identifies 115 cases among its member states that use the exchange rate as 'an anchor' based on either the US dollar, the Euro, a composite basket or other currencies. See <http://www.imf.org/external/np/mfd/er/2008/eng/0408.htm> (accessed 20 August 2013).
49. See Krueger (1997) who emphasizes that this trade-off cannot be ignored. The role of the exchange rate as an anchor from the perspective of mainstream macroeconomics militates against its allocative role from the perspective of international trade theory.
50. See, for example, Rodrik (2008).
51. See <http://www.imf.org/external/pubs/ft/aa/aa04.htm#1> (accessed 20 August 2013).
52. See <http://undesadspd.org/Home/WorldSummitforSocialDevelopment1995/AgreementsWSSD1995/PAWSSDChapter3.aspx> (accessed 17 October 2013).
53. Even scholars who have assiduously sought to construct the evolution of the MDGs have paid insufficient attention to this anomaly. See Hulme (2009). The new MDG target on employment was launched in 2008. See ILO (2009b). Hence, it took 13 years to make the transition from the 1995 Copenhagen Declaration to the 2008 version of the MDGs. Rodgers et al (2009) argue that the 2000 version of the MDGs were influenced by the OECD, the Bretton Woods institutions and the UN to 'redefine the international agenda and narrow its focus'. See Rodgers et al. (2009) For a critical look at the MDGs, see Chang (2010). See also Easterly (2006).
54. For further details, see Chapter 6 in this volume.

55. Kanbur (2010) explores the traditional theory of targeting and highlights its limitations. He argues for the case of a more comprehensive approach to social protection. See also *Commission on Growth and Development* (2010). The vulnerability of the developing world's 'middle class' (those above \$US 2 per day) is analysed in Ravallion, Martin (2009). Birdsall (2010) provides new evidence on the middle class using higher standards than the conventional US\$ 2 per day. Brady offers a powerful argument for a universalistic approach to social policy in 'rich democracies'. See Brady (2009).
56. ILO (2009a: 22).
57. ILO (2009a).
58. ILO (2011).
59. As reported in ILO (2011a).
60. The Report also evaluates Fund-supported programme countries.

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# 2

## Fiscal Consolidation: Issues and Evidence<sup>1</sup>

*Anis Chowdhury and Iyanatul Islam*

### Introduction

The 2007–2009 global economic and financial crisis led to a sharp increase in public debt across various parts of the world, especially in advanced countries. This has heightened concerns about fiscal sustainability and their broader economic and financial market consequences. In particular, many believe that public debt has hit levels that are unsustainable and could lead to sovereign default risks. The fact that the peripheral economies of Eurozone did indeed face the risk of sovereign debt defaults starting around late 2009 appeared to vindicate this sense of apprehension.

The policy discourse, most notably in the rich nations, is that governments must engage in fiscal consolidation and bring back public finances to sustainable levels. As *The Economist* (2010) observed, ‘Across much of the rich world an era of budgetary austerity beckons’. But signs of budgetary austerity also seem to be emerging in a sizeable number of low and middle income countries – see, for example, Ortiz and Cummins (2013). The IMF *Fiscal Monitor* (May 2010) highlighted the need for major fiscal consolidation over the years ahead – a theme that is revisited in the April 2013 update (IMF 2013a). The 2010 *Fiscal Monitor* stated that, though the increase in budget deficits played a key role in staving off an economic catastrophe, as economic conditions improve, the attention of policy-makers should now turn to ensuring that doubts about fiscal solvency do not become the cause of a new loss of confidence. Moreover, an equally important risk to be averted is that the accumulated public debt, even if it does not result in overt debt crises, becomes a burden that slows down long-term potential growth. This message remains largely intact in the April 2013 update of the IMF

*Fiscal Monitor*. Thus, it notes: ‘High debt – even if stable – retards potential growth’.<sup>2</sup>

This chapter critically examines the key empirical evidence that is assembled to support the fiscal consolidation argument. In particular, we review the evidence on the debt–growth relationship. The authors find that the negative relationship between debt and GDP growth is based on fragile empirical evidence. Historical experience does not lend support to the concerns that the current situation is likely to cause rapid upward spiralling of public indebtedness that will push up interest rates (as well as risk premium) on government securities, thereby putting greater pressure on deficits to widen and on public debt to increase. It is also found that the argument that fiscal consolidation is possible without adversely affecting growth is not based on robust empirical evidence.

Finally, the chapter briefly considers an emerging orthodoxy that fiscal consolidation can be combined with quantitative easing and structural reforms to ensure that both growth and austerity work hand in hand. It is argued here that this orthodoxy is of doubtful validity.

A caveat is in order at this juncture. The reader will note that the discussion and debate on fiscal austerity is being shaped by developed country experiences. This is understandable because, unlike past episodes, sovereign debt crises have emerged in the context of developed countries (most notably some Eurozone economies). Nevertheless, the chapter does offer, where possible, a global perspective.

## **Debt–growth relationship**

The IMF’s *Fiscal Monitor* May 2010, which strongly advocated for fiscal consolidation, acknowledged that to date there are only a few studies that assess the magnitude and significance of potentially adverse effects of high public debt on growth. Thus, the IMF attempted to fill this gap by undertaking empirical analysis of the relationship between initial government debt and subsequent economic growth in a panel of advanced and emerging economies for the period 1970–2007.<sup>3</sup> It involved examination of nonlinearities and threshold levels beyond which debt begins to have an adverse effect on growth. It also did a growth accounting exercise to explore the channels through which government debt may influence growth. The analysis paid particular attention to a variety of estimation issues – such as ‘reverse causality’ or the presence of a third variable affecting both growth and debt – that can have an important bearing on the estimation. The study also undertook various robustness

checks. Therefore, the IMF study seeks to provide a solid empirical foundation for fiscal consolidation.

Yet, a closer look at the scatter plot in Figure 2.1 (IMF *Fiscal Monitor* May 2010: 63) reveals that the claim of a negative relationship between growth and initial debt to GDP ratio is influenced by a few outliers, characterized by either debt to GDP ratio well above 100 per cent or very high per capita GDP growth exceeding 8 per cent. This is not surprising given the insignificant existence of any relationship between debt to GDP ratio and macroeconomic instability as a closer look at Figure 2.4 (IMF *Fiscal Monitor* May 2010: 67) reveals.

As part of our critical examination of the pertinent evidence on public debt and growth, we construct a simple scatter plot between initial debt to GDP ratios and subsequent years of growth for the 1981–2010 period using a large sample of countries. As can be seen from Figure 2.1, the slope of the debt–growth ‘line of best fit’ is rather shallow as it was found in the IMF’s *Fiscal Monitor*. To reinforce this point we construct bar diagrams with median debt to GDP ratios and median growth rates for different sub-periods in Figure 2.2. As can be seen, despite the major differences in median debt to GDP ratio, the differences in median growth rates are not significant or pronounced. Interestingly, the median growth rate of countries with debt to GDP ratio between 90 and 120 per cent increased from around 2 per cent during 1981–1985

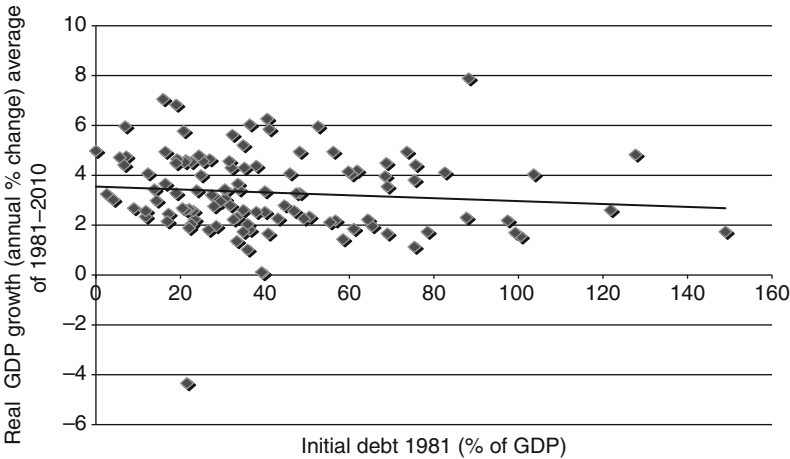


Figure 2.1 Initial debt to GDP ratio (1981) and subsequent real GDP growth (annual % change) average of 1981–2010

Source: Authors’ calculations based on the IMF’s historical debt database.



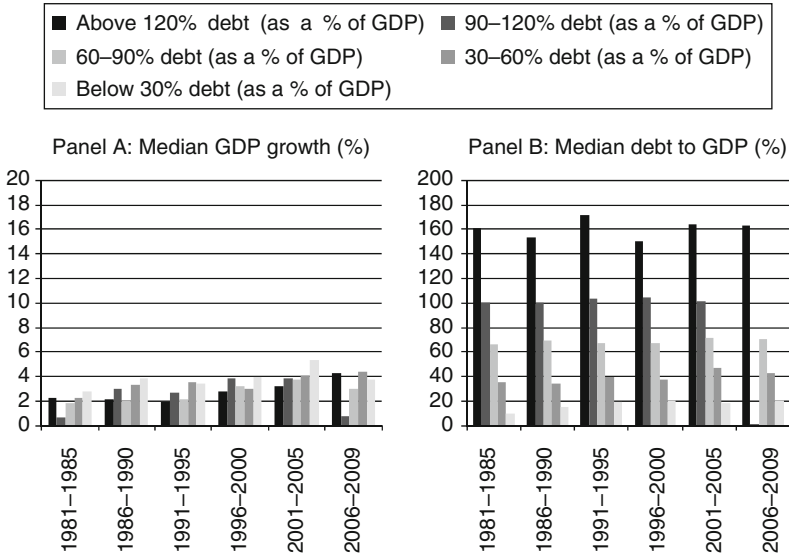


Figure 2.2 Median growth and debt to GDP ratios, 1981–2009

Source: Authors' calculations based on the IMF's historical debt database.

to around 4 per cent during 2006–2009. After a median growth rate of about 2 per cent until 1995, the median growth continued to rise despite high median debt to GDP ratio.

It seems that the claimed negative debt–growth relationship is due to extreme values or outliers. To substantiate this point, this sample has been used to identify countries that have the highest median debt to GDP ratio (approximately 171 per cent) for the 1981–2009 period and to contrast them with countries that have the lowest median debt to GDP ratio (approximately 19 per cent) by focusing on median growth rates for the two groups. As shown in Figure 2.3, a more than nine-fold increase in the median debt to GDP ratios is associated with a 2.1 percentage point decline in the growth rate.<sup>4</sup> This is, of course, an extreme scenario and unlikely to represent the norm in the global evolution of public indebtedness. Indeed, the dominant trend since the mid-1990s is that the majority of countries lie in the 'moderate' (30 to 60 per cent) and 'low' debt categories (less than 30 per cent) – see Figure 2.4. This trend is worth bearing in mind as this can be easily forgotten in the current alarmist discourse over rising public indebtedness in a few countries.

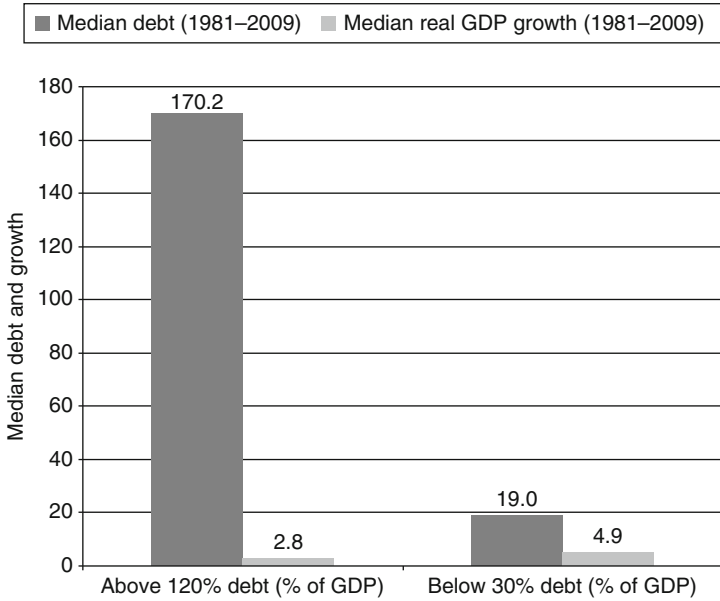


Figure 2.3 Highest and lowest median initial debt to GDP ratios and median GDP growth, 1981–2009

Source: Authors’ calculations based on the IMF’s historical debt database.

The absence of a clear negative debt–growth relationship raises considerable doubts about the nature of the theoretical and empirical foundations of those who espouse the cause of fiscal austerity. The ‘consensus’ view of mainstream macroeconomics – derived from synthesis of ‘new classical’ and ‘new Keynesian’ approaches – is that there is no role for counter-cyclical fiscal policy. The latter should focus primarily on debt and deficit management, while monetary policy deals with ‘business cycle stabilisation and inflation control’ (Kirsanova et al. 2009: 482). Even its proponents argue that this works well in the case of modest demand shocks, but when monetary policy is constrained (such as a liquidity trap – entailing the so-called ‘zero bound’ on nominal interest rate – or where there is a currency union) in the face of large demand shocks (which characterizes the Great Recession of 2008–2009), then focusing on this consensus assignment of macroeconomic policy instruments can turn out to be welfare-reducing (Blanchard et al. 2010; Wren-Lewis 2012).

Concerns about the effectiveness of fiscal policy – and the need to focus on debt/deficit management – can also be rationalized in terms of

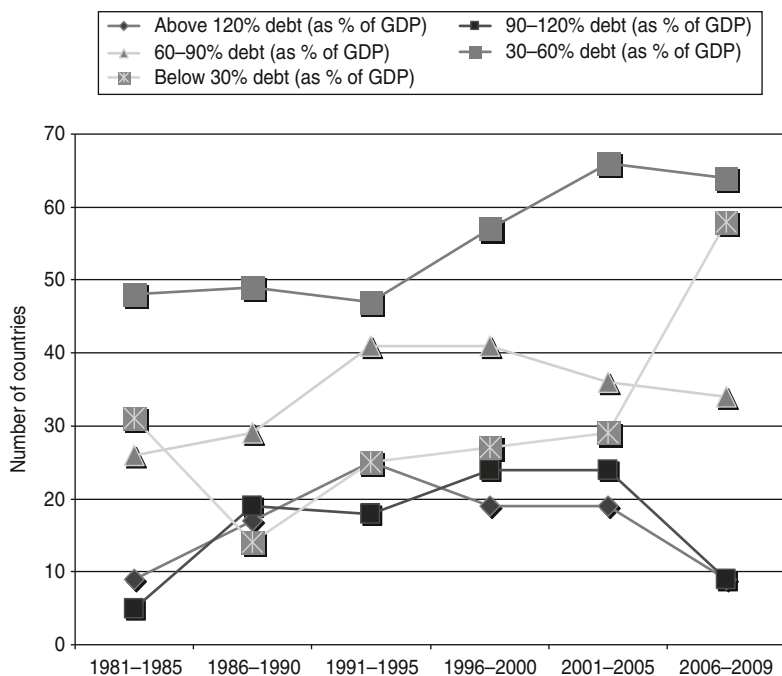


Figure 2.4 Debt trend – number of countries with different debt levels, 1981–2009

Source: Authors' calculations using the IMF's historical debt database.

three views: (1) 'crowding out', (2) 'Ricardian equivalence' and (3) 'market confidence'. The crowding out hypothesis, that is, government borrowing drives up interest rates and adversely affects private investment and consumption, ignores the consequences (e.g. low profitability, bankruptcies etc.) of a depressed economy in the absence of increased government spending. It also ignores the productivity enhancing impact of government spending on infrastructure, education, and research and development (R&D). In any case, even in a simple IS–LM model, 'full' crowding out takes place in the special case when the LM curve is vertical. As long IS and LM curves have normal shapes, there will be 'partial' crowding out, which means that a fiscal expansion will raise aggregate demand and output and facilitate the move towards 'full employment'. Admittedly, 'full' crowding out is possible in open economy IS–LM models through the exchange rate channel. This suggests that the efficacy of fiscal policy is context-specific. It is

thus difficult to sustain the assertion that ‘crowding out’ is a general phenomenon.

The Ricardian equivalence argument that individuals have to save more in anticipation of higher future tax to redeem public debt is spurious as revenues rise with an expanding economy.<sup>5</sup> The discussion of Ricardian equivalence requires a distinction between temporary and permanent fiscal expansions. As Wren-Lewis (2011: R38) has pointed out, in a Ricardian economy, ‘fiscal expansion that involves cutting lump sum taxes would have no impact on demand, because the tax cut would be saved. However, exactly the same model implies that a temporary increase in government spending will increase demand’.

It is also a myth that government expenditure must always be financed by raising taxes, so that government budget remains in balance. As Abba Lerner pointed out more than half a century ago, ‘taxing is *never* to be undertaken merely because the government needs to make money payment’.<sup>6</sup> Just as government expenditure, taxes must also be judged from their impact on the economy.

In any case, there is scant evidence supporting negative impact of fiscal expansion either due to crowding out or Ricardian equivalence. After surveying a large body of empirical literature on IMF study, Hemming, Kell and Mahfouz (2002: 36) concluded that ‘estimates of fiscal multipliers are overwhelmingly positive ... there is little evidence of direct crowding out through interest rates and exchange rate. Nor does full Ricardian equivalence or a significant partial Ricardian offset get much support from the evidence’. Another study on Asian economies has the following observation to make:

The evidence from both cross-country panel data and country-specific time-series data indicate that the crowding out effect is at best limited in developing Asia. By and large, fiscal expansion does not seem to have a significant negative impact on private consumption and investment in the region.

(Hur et al. 2010: 16)

Finally, the least theoretically grounded, but the most influential, view is that fiscal austerity is necessary because it will instil ‘market confidence’ that lies at the core of private sector spending decisions. As Jean-Claude Trichet, the former president of the ECB, put it during a media interview:

It is an error to think that fiscal austerity is a threat to growth and job creation. At present, a major problem is the lack of confidence

on the part of households, firms, savers and investors who feel that fiscal policies are not sound and sustainable.<sup>7</sup>

As Nobel Laureate Paul Krugman has often lamented, this represents an undue faith in the 'confidence fairy' to spur growth. Borrowing costs are at a historic low for advanced countries, such as the United Kingdom, the United States and Japan, despite high public debt. This probably reflects the fact that there is a flight to safe assets issued by advanced country governments who 'still own their currency'.<sup>8</sup>

### Composition matters

The problem with the simple debt–growth analyses is that they ignore other factors that affect growth. Kumar and Woo (2010) include variables that are commonly used in growth regressions, but their reporting is partial. For example, in their Between Estimator (BE) model, the coefficient of the initial years of schooling is 4.2, which is significant at 1 per cent level. This is significantly larger than the coefficient of the initial debt to GDP ratio. However, when Kumar and Woo claim that 'a 10 percentage point increase in the initial debt-to-GDP ratio is associated with a slowdown in annual real per capita GDP growth of around 0.2 percentage points per year' (2010: 4), they do not consider how the initial debt was spent. If the initial debt was incurred to improve the initial years of schooling, certainly the likely negative impact of high initial debt would be more than offset, leaving a large net impact of 42 percentage points. Likewise, the initial high debt should affect the size of government, which has a coefficient of 0.1 (significant at 5 per cent level). This too would lead to a net positive impact of increased public indebtedness on growth. The story does not change much between different estimation techniques employed and in the robustness check using the parsimonious specification.

The importance of composition of public expenditure is also revealed in the econometric exercise reported in the IMF's *World Economic Outlook 2010* (WEO 210). It finds that the estimated impact on output of fiscal consolidation based on cuts to government transfers are relatively benign, whereas for adjustments based mainly on cuts to government consumption or investment, the output costs are larger. Indeed, estimates of fiscal multipliers, based on a range of structural models, suggest that the highest multiplier values pertain to government expenditure and capital expenditure (Coen et al. 2012).

What this discussion has shown is that even if there is a downward sloping debt–growth relationship curve, when the growth effect of

government's productive investment expenditure and consequent 'crowding-in' effect of private investment are considered, the curve will shift to the right, producing a positive relationship between public debt and growth. This can be illustrated by using the simple diagram in Figure 2.5.

Let us assume that the public debt–growth relationship is negative as in Figure 2.5. Let us suppose an economy is growing at  $g_1$  and the corresponding debt-to-GDP ratio is  $DGR_1$ . Now, suppose that there is a secular increase in the public debt to GDP ratio from  $DGR_1$  to  $DGR_2$ . If the focus is simply on a movement along a given public debt–growth curve (from A to B), then the prediction is that the growth rate will decline from  $g_1$  to  $g_2$ . Indeed, this will be the typical conclusion of any study that focuses only on the partial impact of debt on growth. On the other hand, the composition of public debt matters a great deal.<sup>9</sup> If it is assumed that the increased public debt will finance productivity enhancing investments in infrastructure and in enhancing public

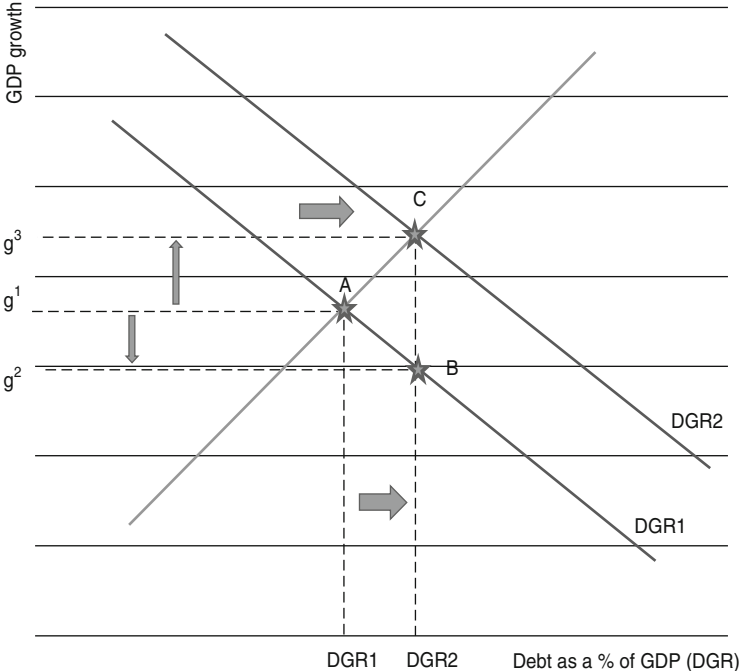


Figure 2.5 Debt and growth relationship (movement versus shift)

service delivery, then this would be represented as a rightward shift of the downward sloping public debt–growth curve and hence create the possibility of a movement from B to C. Incorporating this ‘shift’ effect thus means a net positive impact of higher debt on growth. Empirical studies that ignore ‘shift’ effects will, therefore, arrive at misleading conclusions on the debt–growth relationship.

## Tipping point

Reinhart and Rogoff (2010) summarized evidence from 44 developed and developing economies, and found a threshold of 90 per cent for central government debt to GDP, after which the real growth rate declines. Although this study received considerable attention in the press, which has referred to it as a ‘tipping point’ (Pozen 2010), it uses histograms to describe some stylized facts, and hence cannot ascertain causality with any statistical significance. As growth declines, debt to GDP ratio rises; so the causality may run from low growth to high debt to GDP ratios.

An examination of various studies that provide an econometric investigation of the so-called ‘tipping point’ enables one to come to the following conclusions. First, the estimated thresholds vary widely – from as low as 15–30 per cent to 64 per cent of GDP for developing countries; for developed and emerging economies, the threshold ranges from 60 per cent to 90 per cent. It is difficult to advise policy-makers based on these estimates. More specifically, it becomes difficult to sustain the view that one can use reliable prudential targets to monitor the sustainability of public debt.

Second, at least one study (Grennes et al. 2010) notes that the coefficient below the threshold (64 per cent of GDP) is much larger than that above the threshold (+0.065 versus –0.017), implying that crossing the threshold is costly in terms of lost growth, but pushing below the threshold is even more costly. Furthermore, the high cost of lost output (reduction in growth rate) highlighted in that study is due to one extreme case (Nicaragua) and is also based on the strong assumption that a high degree of public debt will persist for nearly 30 years. For most countries, the estimated annual percentage point loss in real GDP growth is small.

Other studies draw attention to the notion of ‘debt irrelevance’. In other words these studies (Cordello et al. 2005, 2010; Presbitero 2010) show that the public debt–growth relationship flattens beyond the threshold, implying that rising public debt has no statistically significant impact on growth after a certain point.

One should also highlight – as the Introduction does – that work undertaken by Herndon, Ash and Pollin (2013) (henceforth Herndon et al.) shows that the Reinhart–Rogoff results are particularly sensitive to coding errors, arbitrary exclusion of a number of countries from the data coverage and conceptually contentious aggregation procedures. When these adjustments are made, Herndon et al. are able to show that, for the post-Second World War period, GDP growth in the advanced countries declines modestly after crossing the 90 per cent threshold rather than turning to negative territory as posited in the Reinhart–Rogoff estimates.

The work of Herndon et al. has attracted worldwide media attention. Eichengreen (2013) maintains that the Herndon et al. critique triggered ‘the most conspicuous and incendiary scholarly controversy since 1974, when two earlier economists, Robert Fogel and Stanley Engerman, published a notorious book, *Time on the Cross*, defending the efficiency of the American plantation slavery.’<sup>10</sup> To this one can add the observation of Krugman (2013) that the Herndon et al. critique, more than any others, led to the crumbling of the pro-austerity case.

### **Risk of debt spiralling**

Both the IMF’s Fiscal Monitor 2010 and the 2013 update warn that without progress in addressing fiscal sustainability concerns, high levels of public indebtedness could weigh on economic growth for years. If governments fail to signal a credible commitment to reduce debt ratios, the resulting increase in interest rates (and decline in growth rates) could put greater pressure on deficits to widen and on public debt to increase. These kind of dynamics have clearly affected Greece, Ireland, Portugal, Spain and several economies in Eastern Europe, countries that still have a relatively limited tax capacity, making the vicious forces at work more powerful. However, despite these experiences, there is scant evidence supporting strong dynamics between public indebtedness and the cost of servicing the debt in developed countries. Mounting public debt in the United States, the major economies of the Eurozone and Japan has not pushed real interest rates up; the real interest rates have even declined in some countries – as was already noted.

The historical evidence also does not support the claim for such dynamics to emerge under all circumstances. For example, interest rates remained low since the late 1980s in Japan, where public debt soared to 200 per cent of GDP during two decades of deflation. The higher debt to GDP ratio in Japan is partly due to very low inflation. A higher, but still moderate, inflation rate will raise nominal GDP and lower the



public debt to GDP ratio unless there is an actual increase in the government's gross liabilities. At the end of the Second World War, the level of public debt in the United States increased to over 100 per cent of GDP, but it did not cause any major increase in interest rates. Several studies on public finances in the United States found no significant relationship between debt to GDP ratios and inflation or interest rates over the period 1946–2008.<sup>11</sup> As long as there is spare capacity in the economy or unemployment, higher fiscal deficits add to purchasing power and do not exert much upward pressure on interest rates or inflation, nor do they cause large current account deficits.

Following De Grauwe (2011), it can also be argued that the adverse impact on real interest rates depends on whether the debt is denominated in domestic or foreign currencies. This is evident in the contrasting experiences of Spain and the United Kingdom during the current episode of rapid public debt build-up. The UK public debt as a per cent of GDP was 17 percentage points higher than the Spanish government debt (89 per cent versus 72 per cent) in 2011. Yet, since the beginning of 2010 the yield on Spanish government bonds has increased strongly relative to the United Kingdom, suggesting that international bond markets price in a significantly higher default risk on Spanish than on UK government bonds. This difference rose to 200 basis points in early 2011. One of the reasons why the financial markets have singled out Spain and not the United Kingdom for the possibility of getting entangled in a government debt crisis is that they know Spain as member of a monetary union does not have control over the currency in which its debts are issued, while the UK public debt is mostly in its own currency.

A study prepared for the United Nations *World Economic Situation and Prospects 2011* (WESP 2011) traced the flow cost of servicing the public debt in developed countries in the present-day context. It finds that so far the cost of public debt in the United States and the major economies of the Eurozone have remained very low. Interestingly, for most countries, the flow cost of servicing the debt is below 2 per cent of GDP, except for Greece, Italy and Finland. For most of the developed countries, including the United States, it finds that the projected expected public debt burden is zero or negative. Most countries with low projected debt ratios have lower uncertainty in future debt burdens, and this uncertainty does not increase monotonically with the size of the projected debt. Thus, *WESP 2011* notes:

From this perspective, one could conclude that, insofar as future growth depends on short-term stabilization during or in the aftermath

of a financial crash and a deep recession, the additional debt incurred for such stabilization may not translate into excessively high medium-term flow costs of public debt for an important part of the developed countries.

(WESP 2011: 26)

Therefore, the risk of triggering vicious public debt dynamics depends critically on the growth scenarios. On the other hand, premature fiscal consolidation may slow or delay economic recovery, and could well trigger such a vicious circle.

### **Fallacy of ‘expansionary fiscal contractions’<sup>12</sup>**

In the chapter so far, the weak and doubtful empirical bases for public debt–growth link based on cross-country data have been highlighted. This section examines more closely the claim that it is possible to construct ‘expansionary fiscal contractions’ and even ‘growth-based’ fiscal consolidation. Both cross-country studies and country-specific experiences are considered. Based on this evaluation, one is reminded of Domar’s (1944, 1993) key message that fiscal sustainability crucially hinges on economic growth, given the cost of debt servicing. More specifically, whether a country can sustain a given debt to GDP ratio depends critically on the difference between the interest rate on the accumulated debt and the growth rate. If a given growth rate is higher than a given interest rate that is projected to prevail over time, then there should not be debt sustainability concerns, even if a particular debt to GDP ratio is considered to be high.<sup>13</sup>

### **Theory**

The proponents of ‘expansionary fiscal contractions’ argue that even the supposedly short-run damage of fiscal austerity would be limited or not arise at all. Recovery should follow rapidly if consolidations are credible, decisive and of the right kind. This view rests, as noted already, on the ‘market confidence’ argument. The best articulation of this idea can be found in the Stability and Growth Pact of the EU.

Upholding trust in the soundness of public finances enhances confidence among all economic agents and thereby contributes to sustainable growth in consumption and investment. Stability and growth are thus not conflicting objectives, but rather reinforce each other—a

fact which is very well captured in the title of the fiscal framework called the ‘Stability and Growth Pact’.

(ECB Bulletin, November 2003: 6)

The same message has been reflected in the 2010 G20 communiqué. It accepts the stabilizing role of fiscal deficits, but only in exceptional situations. In the contemporary debate on fiscal consolidation, some commentators have suggested a ‘forward-looking’ interpretation of ‘market confidence’. This implies that governments have to be proactive and anticipate how markets might react in the future by adopting a ‘big bang’ approach to fiscal consolidation. Thus:

Given that the current levels of debt are high by historical standards and that they are very high in many advanced economies, *it might be that markets will soon ask for a strong signal of commitment* and, in its absence, risk premia on government bonds will increase. To avoid an increasing cost of rolling over the debt, *governments could be better off with a strong early adjustment* (emphasis added).<sup>14</sup>

Therefore, consolidation should take priority over stabilization, and discretionary fiscal stimulus measures should be switched off as soon as possible to avoid any damage to ‘credibility’. This is supposed to inspire the ‘confidence’ of bond investors to offset any contractionary impact of public expenditure cuts or increased taxes. This is especially important for countries facing acute debt problems, with very high debt ratios together with the prospect of soaring debt service burdens threatening crowding out and adverse confidence effects.

The key link here is between debt costs and bond market confidence. It is an additional argument that reinforces the Ricardian equivalence idea or hopes for positive ‘supply-side effects’ from shrinking public spending. Therefore, fiscal consolidation could be expansionary since cuts in government spending should strengthen market confidence, lower borrowing costs – due to reduced perceptions of country risk – and spur private investment. In the most favourable case of fiscal consolidation, non-Keynesian effects (from greater credibility and investor confidence) exceed contractionary Keynesian effects of reduced public spending, resulting in higher growth.

Fiscal discipline is also seen as a safeguard protecting monetary policy from political pressures. Complementing central bankers’ ‘independence’, a prudent fiscal framework is expected to help maintain price

stability. In sum, deliberate reversal of fiscal trends, brought about by means of redesigned macroeconomic policies and institutions, is believed to have a positive impact on business expectations and investment to deliver economic growth and employment. Thus, important links are believed to exist between fiscal consolidation, fiscal and monetary institutions, and economic growth and employment.

### **Empirical evidence**

A number of cross-country studies have sought to demonstrate using historical data that fiscal consolidation exercises are accompanied by growth and declines in unemployment. Two cases from this genre can be highlighted. First, an IMF study (Dermott and Wescott 1996) focused on 74 cases of fiscal consolidation in 20 industrialized countries over the 1970–1995 period. This study concludes that 14 cases were ‘successful’ in the sense that they were marked by sustainable reduction (by about three percentage points over a period of three years) in the debt to GDP ratio as well as an increase in growth and employment creation. Second, a study by Alesina and Ardagna (2010) assembled 107 episodes of fiscal consolidation in all OECD countries for the 1970–2007 period.<sup>15</sup> It concludes that 27 could be classified as cases that combined fiscal consolidation with growth. Such results are underwhelming. The historical experience thus suggests that the probability of a successful fiscal consolidation is between 19 per cent (or 14 out of 74 as in the IMF study) and 25 per cent (or 27 out of 107 as in the Alesina-Ardagna study).

However, Alesina and Ardagna’s study as well as a similar earlier study by Alesina and Perroti (1995) have been criticized by the IMF (WEO 2010) on methodological grounds. Specifically, these studies often identify periods of fiscal consolidation using a statistical concept – the increase in the cyclically adjusted budget surplus – that is a highly imperfect measure of actual policy actions. ‘This way of selecting cases of consolidation biases the analysis toward downplaying contractionary effects and overstating expansionary ones’ (WEO 2010: 94). Thus, WEO 2010 uses an alternative method for identifying periods of fiscal consolidation by focusing on policy actions intended to reduce the budget deficit. It finds that fiscal consolidation typically has a contractionary effect on output. A fiscal consolidation equal to 1 per cent of GDP typically reduces GDP by about 0.5 per cent within two years and raises the unemployment rate by about 0.3 percentage points. Domestic demand – consumption and investment – falls by about 1 per cent.<sup>16</sup> New estimates provided by Blanchard and Leigh (2013), and highlighted in

the Introduction, suggest that the contractionary consequences of fiscal contraction are even higher.

Even if one accepts that fiscal consolidation exercises have a reasonable chance of being accompanied by growth and employment creation, one should not attribute such an outcome to budgetary austerity alone. There are often complementary factors at work that might be more important than fiscal actions. They include: (1) the influence of the global business cycle, (2) monetary policy and (3) exchange rate policy.<sup>17</sup> The aforementioned IMF study found that 'strong global economic growth helps to achieve a successful consolidation, and weak global growth reduces the chances that consolidation will cut the debt-to-GDP ratio'. It is also well known that fiscal retrenchments can be combined with loose monetary policy to offset recessionary consequences. One European Commission study (Posen 2005) finds that, in more than 50 per cent of the cases examined, fiscal austerity programmes were accompanied by expansionary monetary policy that enabled growth to be sustained. Similarly, the idea of combining fiscal retrenchments with devaluation that boosts net exports to offset the decline in aggregate demand (so-called 'expenditure reducing policies' combined with 'expenditure switching policies') is well known.

The importance of these enabling factors needs particular attention in light of the harsh realities confronting the developed world. The Eurozone remains mired in stagnation. Mass unemployment has emerged in parts of Europe, with unemployment rates reaching heights not seen since the Great Depression.<sup>18</sup> The UK economy is experiencing its worst economic recovery when compared with all previous recoveries from recessions.<sup>19</sup> Japan continues to experience deflation and sluggish growth and has endured three recessions in five years.<sup>20</sup> The United States has fared better, but the unemployment rate is still 1.5 per cent above what the US authorities, most notably the Federal Reserve Board, would consider as 'full employment'.<sup>21</sup> The emerging economies of the G20, on the other hand, have been growing at respectable rates. Public indebtedness in emerging economies, that was such a challenge in the past, does not appear to be a challenge today.<sup>22</sup> Hence, the regional–global business cycle is not conducive enough for fiscal consolidation to work in the developed world. The Eurozone economies also do not have scope for devaluations nor do they have much room to cut interest rates further through expansionary monetary policy as policy rates are still at historically low thresholds.

In sum, the results of historical studies of fiscal consolidation exercises suggest a relatively high failure rate. Even in the successful cases, there were enabling factors at play that might have offset the recessionary

consequences of fiscal retrenchments. Furthermore, the usual arguments that are invoked to justify fiscal consolidation (Ricardian equivalence, crowding out and market confidence) lack robust empirical substantiation. One study (Broyer and Brunner 2010) has offered some estimates of the net impact of fiscal consolidation on growth in eight European economies (Germany, France, United Kingdom, Italy, Spain, Netherlands, Portugal, Greece). It suggests that, even by 2016, all countries bar one will suffer an output contraction as a result of the transition from fiscal stimulus packages to consolidation. New estimates by Holland and Portes (2012) corroborate that view. Indeed, the results show that, for the Eurozone countries, fiscal austerity will be self-defeating entailing rising indebtedness and an estimated contraction in output in 2013 of -3 per cent of GDP at the Eurozone level.

### **Fiscal consolidation, quantitative easing and structural reforms: a new orthodoxy?**

Faced with a sustained onslaught from its critics as well as the grim realities of continued stagnation and mass unemployment in parts of the developed world, the initial enthusiasm for 'expansionary' fiscal consolidation by its advocates has undergone a subtle transformation. The new orthodoxy seems to be a 'policy triangle'. The three elements of this triangle are:

- (1) appropriately paced fiscal consolidation that is mindful of country-specific circumstances;
- (2) unconventional monetary policy or quantitative easing; and
- (3) ambitious structural and labour market reforms.

The underlying logic is that fiscal consolidation is essential to reign in unsustainable public finances in the advanced economies, but it is also painful. Such painful consequences need to be alleviated via (2) that will support aggregate demand, while (3) will unleash the growth potential of national economies. Taken together, efforts at both fiscal consolidation anchored in a medium-term framework and growth strategies will work in harmony.

The term 'quantitative easing' is a fairly new lexicon in the economics dictionary. It is used to describe an asset-buying programme of a central bank (where these assets are owned by the commercial banks and private institutions and are usually of long-term maturity) to boost economic activity by reducing long-term borrowing costs. This

asset-buying programme can be combined with 'forward guidance'. Under this scenario, a central bank announces a commitment that the private sector should not assume either a premature cessation of an asset-buying programme or that policy-makers will tolerate deflation. The logic is that this will set a floor to downward revisions of inflationary expectations and thus avoid the onset of a self-fulfilling deflation. In some cases, as in the United Kingdom, quantitative easing has been combined with 'funding for lending' schemes, where the central bank makes funding available to private financial institutions at ultra-low rates to encourage lending.<sup>23</sup>

Has quantitative easing worked? One of its champions is Ben Bernanke, the current Chairman of the US Federal Reserve, who developed these ideas when he was an academic don. Bernanke was, at the time, an avid Japan-watcher, and like other academic peers, such as Paul Krugman, was particularly worried that Japan was caught in a 'liquidity trap' and needed unconventional policies to get out of the trap. The standard idea in macroeconomics is that, during a liquidity trap when short-term interest rates are close to zero or zero and cannot go down any lower, conventional monetary policy is ineffective, while fiscal policy acquires considerable potency. Bernanke was able to argue that monetary authorities had 'unconventional policies' at their disposal. Hence, the twin notions of asset-buying programmes and forward guidance were born. Given that the advanced economies are indeed in a liquidity trap entailing a 'zero lower bound' on short-term policy rates, considerable faith is invested in quantitative easing.<sup>24</sup>

Unfortunately, the available evidence is not encouraging. Michael Woodford of Columbia University, one of the world's foremost authorities on monetary policy, offers a careful evaluation of quantitative easing by drawing on the experience of the United States. He concludes that it has not been effective enough, largely because central banks have not really been able to convince the private sector of the credibility of their actions. This is understandable when central banks are not prepared to revise their inflation targets (usually 2 per cent) upwards in a context of large-scale private sector deleveraging.<sup>25</sup>

Concerns have also been expressed about the spillover effects of quantitative easing. The critique is that quantitative easing has triggered short-term and destabilizing capital inflows. Such inflows in turn have led to sharp real exchange rate appreciations in emerging markets with deleterious consequences on international competitiveness. Emerging economies then have to cope with short-term capital inflows by seeking to stabilize the real exchange rate and by instituting capital controls.<sup>26</sup>

What about 'structural reforms', the third element in the policy triangle?<sup>27</sup> As the Introduction noted, the G20 Leaders Declaration at the Toronto Summit (June 2010) endorsed an ambitious agenda of 'structural reforms' cutting across both labour and product markets on the ground that it will lift global output significantly and create millions of jobs.<sup>28</sup> The 18–19 April 2013 Communiqué of Finance Ministers and Central Bank Governors of the G20 sustains this commitment to structural reforms.<sup>29</sup>

The promises of significant employment and growth dividends of structural reforms is influenced by the OECD's *Going for Growth* template in which wide-ranging policy initiatives that cut across product market regulations, labour market regulations, financial regulations, taxation, human capital and other areas unlock the growth potential of countries under review. The OECD makes it clear that not all the proposed reforms apply to all countries with equal force at all times.<sup>30</sup>

The proposed labour market regulations under the OECD's *Going for Growth* template are worth highlighting. The suggested regulatory changes that are applicable to a range of countries include:

- (1) reform of (disability) benefit schemes;
- (2) reform of unemployment insurance scheme;
- (3) reforms to reduce labour restrictions on labour mobility;
- (4) reforms to reduce minimum cost of labour;
- (5) reforms to the wage bargaining system;
- (6) strengthening policies to promote female labour force participation; and
- (7) improving incentives for formal labour force participation.

Some of these initiatives, such as (3), (6) and (7) are clearly desirable; others are more contentious and are likely to weaken labour market institutions.

The OECD maintains that 'fears that reforms may depress economic activity in the short run are overblown'.<sup>31</sup> Yet this proclamation overlooks the caveats that are associated with the OECD's internal research. An OECD Economics Department Working Paper includes the following qualifications in its summary of findings:

This analysis indicates that the benefits from reforms *typically take time to materialize* ... there is also tentative evidence that some *labour market reforms (e.g. unemployment benefits and job protection) pay off in good times rather than in bad times, and can even entail short-term losses in severely depressed economies* (emphasis added).<sup>32</sup>



An IMF study on labour market policies in advanced economies also notes some of these concerns.<sup>33</sup>

Furthermore, the OECD study does not discuss the issue of quality of employment, since the impact of reforms is measured in terms of two aggregates: GDP growth and the employment rate. It is, of course, possible for the employment rate to increase, but the quality of new jobs created to decline.

There are also adverse distributional consequences associated with labour market and related reforms. In the case of the United Kingdom, one study commissioned by the *Financial Times* concluded that the current welfare benefit reforms will hit the poorer northern region five times harder than richer south.<sup>34</sup> An Institute for Fiscal Studies (IFS) study draws attention to 'a £20 billion cut to the social security budget by 2015–16 (that will affect) the vast majority of ... working-age households and this inevitably tends to hit lower income households hardest'. The study then 'estimates the implications of these kinds of factors for the path of income poverty now and in future'. The projections are quite stark. A sharp rise in child poverty (based on a relative income standard) of six percentage points is anticipated between now and 2020. This will apparently negate all the reductions in child poverty attained during the first part of the 2000s.<sup>35</sup>

In sum, structural reforms might hold a good deal of promise in the long run, but their short-run and distributional consequences cannot be discounted. It is not, of course, possible to make the transition to the long run without negotiating the short run; neither does it make much sense to focus only on ex-ante aggregate benefits without considering the distribution of such benefits. A balanced policy discourse on structural reforms should focus on both their promises and pitfalls.

## Conclusion

The claim that high public debt causes lower growth and that it is possible to have 'expansionary fiscal contractions' cannot be supported by robust cross-country evidence. Such a claim also ignores the effects of other variables, especially of those that may be influenced by public debt itself. For example, public debt could be used to improve schooling, which is found to have a larger positive impact on growth than the estimated negative impact of public debt to GDP ratios. Public debt to enhance and increase government capacity and capabilities (measured by size of government) or to improve infrastructure can also positively contribute to growth and outweigh the potential adverse impact of high initial debt to GDP ratios. In other words, as Domar pointed out,

both the size and composition of debt matter. The growth-inhibiting effects of a given percentage increase in debt to GDP ratio can be offset by a given percentage increase in growth-promoting variables achieved through public spending.

The issue, however, is different when it comes to the accumulation of external liabilities denominated in a currency that is not within the control of national monetary authorities. The question is then not only of being able to repay, but also whether other countries would be willing to continue to lend. Paradoxically, in crisis-hit countries with access to private capital markets, fiscal prudence does not offer any safeguard against the pitfalls and perils of private sector-led accumulation of external liabilities because they eventually become the liabilities of the government. This is a lesson that Ireland and other debt-ridden economies of the Eurozone have painfully discovered today in the wake of the global recession of 2008–2009 and as Indonesia and Thailand discovered during the 1997 Asian financial crisis.

The current preoccupation with public debt and fiscal consolidation has had the consequence of distracting attention from the crucial role that fiscal policy plays in promoting growth and development. This point is made forcefully in an insightful ‘interim report’ that informed the deliberations of the Development Committee of the IMF and World Bank in April 2006. The authors of the report note that debts and deficits are useful indicators for ‘controlling the growth of government liabilities, but (they) offer little indication of longer term effects on government assets or on economic growth. Conceptually, the long-term impact is better captured by examining the impact of fiscal policy on government net worth’. The report argues that ‘there is clearly a need for fiscal policy to incorporate, as best as possible, the likely impact of the level and composition of expenditure and taxation on long-term growth...’.<sup>36</sup> It is time to resurrect these important ideas as an antidote to the alarmist discourse on public debt.

There is also the more fundamental issue of whether the policymaking process should become hostage to the ‘confidence game’ in which evidence-based policymaking is replaced by a band of amateur psychologists seeking to read the collective mood of financial markets. When this happens, fundamental macroeconomic policy errors are likely to be committed, as the mishandling of the 1997 Asian financial crisis by international financial institutions has shown.<sup>37</sup>

Finally, the idea that appropriately paced fiscal consolidation tailored to country-specific circumstances can be combined with quantitative and structural reforms to produce a growth-promoting policy triangle can also

be questioned. Quantitative easing has not been effective enough in supporting aggregate demand. It has also engendered potentially destabilizing short-term capital flows. The long-run ex-ante benefits of structural and labour market reforms should not be emphasized at the expense of adverse short-run consequences on employment and income distribution.

## Notes

1. This is a revised and updated version of Chowdhury, A. and Islam, I. (2012) 'The Debate on Expansionary Fiscal Consolidation: How Robust is the Evidence?' *The Economic and Labour Relations Review* 23(3): 13–38.
2. IMF (2013a: Executive Summary).
3. The detailed findings and methodologies employed are reported in Kumar and Woo (2010).
4. This does not, of course, imply causality between debt and growth, but the nature of the association shown here is insightful.
5. Chick and Pettifor (2011), using historical UK data for 1909–2009, shows that there was a very strong negative association between government expenditure and the government debt, excluding the two outliers for the World Wars. When public expenditure increased, public debt fell, as the economy expanded and revenue rose. On the other hand, contrary to the conventional wisdom, fiscal consolidations did not improve public finances.
6. Lerner (1943: 40). Emphasis in original.
7. See European Central Bank, Interview with Jean-Claude Trichet, President of the European Central Bank, and *Libération*, 8 July 2010.
8. Paul Krugman (2012) 'Cameron and the Confidence Fairy: An Update, The Conscience of a Liberal', *The New York Times* blog, 11 February.
9. Based on historical Australian data, Nevile and Kriesler (2011) stress the importance of the composition of government expenditure.
10. Eichengreen, B. (2013) 'Open-Access Economics', *Social Europe Journal*, 21 April, available at: [http://www.social-europe.eu/2013/05/open-access-economics/?utm\\_source=feedburner&utm\\_medium=feed&utm\\_campaign=Feed%3A+social-europe%2FwmyH+%28Social+Europe+Journal%29](http://www.social-europe.eu/2013/05/open-access-economics/?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+social-europe%2FwmyH+%28Social+Europe+Journal%29) (accessed 20 August 2013).
11. See Missale and Blanchard (1994) and Aizenman and Marion (2009).
12. This section draws on the authors' VOXEU commentaries, 'The fallacy of austerity-based fiscal consolidation', available at: <http://www.voxeu.org/index.php?q=node/5312> (accessed 20 August 2013); 'Fiscal consolidation, growth and employment: what do we know?', available at: <http://www.voxeu.org/index.php?q=node/5216> (accessed 20 August 2013); 'Is there an optimal debt-to-GDP ratio?', available at: <http://www.voxeu.org/index.php?q=node/5764> (accessed 20 August 2013); and G24 Policy Brief Nos. 57 and 58, available at: <http://www.g24.org/PolicyBriefs/pbno57.pdf> (accessed 17 October 2013).
13. The interest rate to growth differential is a standard component of debt sustainability analysis. There are, as Ostry et al. (2010) suggest, considerable variations in 'debt limits' across countries. For example, for a sample of 23 high income countries, the point or limit at which the debt to GDP

ratio becomes unsustainable can exceed 200 per cent of GDP with a median value of 170 per cent (Ostry et al. 2010: 14). Of course, the authors warn that, for prudential reasons, policy-makers should target a debt-to-GDP ratio significantly lower than that. This begs the question: how much lower should that target be?

14. See Fatás (2010).
15. Also Alesina (2010).
16. Jonathan Portes, Director of the National Institute of Economic and Social Research, which is Britain's oldest independent research institute, has pointed out that the Alesina-Ardagna study has been so discredited that the UK Treasury, which was briefly influenced by that study and used its findings to justify the Emergency Budget of 2010, has now retreated from that position. See Portes, J. (2011) 'What does "Keynesian" mean?', Not the Treasury View Blog (available at: <http://notthetreasuryview.blogspot.com/>) (accessed 27 January 2012). John Quiggin, a leading Australian economist, chastises the Alesina and Ardagna paper, for making elementary factual errors in the case study of Australia that is advanced by Alesina and Ardagna as a clear case of expansionary fiscal contraction. See Quiggin, J. (2011) 'Expansionary Austerity: Some Shoddy Scholarship', available at: <http://johnquiggin.com/2011/10/25/expansionary-austerity-some-shoddy-scholarship/> (accessed 20 August 2013). Others who have been critical of the Alesina and Ardagna study includes *The Economist*, which considers the study 'seriously flawed'. See *The Economist* (2010) 'Economics Focus: Does Fiscal Austerity Boost Short-Term Growth', 30 September.
17. See, for example, Perotti (2012).
18. See Key Indicators for the Eurozone, available at: <http://www.ecb.europa.eu/stats/keyind/html/sdds.en.html> (accessed 17 October 2013).
19. See the estimates, available at: <http://www.niesr.ac.uk/> (accessed 20 August 2013).
20. On Japan, see <http://www.oecd.org/economy/surveys/japan-2013.htm> (accessed 20 August 2013).
21. See 'What are the Federal Reserve's Objectives in Conducting Monetary Policy?', available at: [www.federalreserve.gov/faqs/money\\_12848.htm](http://www.federalreserve.gov/faqs/money_12848.htm) (accessed 20 August 2013).
22. See IMF (2013) World Economic Outlook, April, available at: <http://www.imf.org/external/pubs/ft/weo/2013/01/> (accessed 20 August 2013).
23. This scheme is described in <http://www.bankofengland.co.uk/markets/Pages/FLS/data.aspx> (accessed 20 August 2013).
24. Bernanke's ideas are discussed in Ball (2012).
25. Woodford, (2012). See also the IMF report (IMF 2013b) for the G20 meeting of Finance Ministers and Central Bankers held at Washington, DC on 18–19 April 2013, which points out that the expected transmission from low rates to increased lending has not taken place at an adequate pace. This transmission appears particularly impaired in the Eurozone.
26. An IMF report for the G20 meeting of Finance Ministers and Central Bankers held at Washington, DC on 18–19 April 2013 alludes to this concern. See IMF (2013b).
27. The rest of the discussion draws on <http://www.social-europe.eu/2013/05/structural-reforms-and-the-g20-economies-promises-and-pitfalls/> (accessed 20 August 2013).

28. The G20 Toronto Summit, available at: [http://www.g20.utoronto.ca/2010/g20\\_declaration\\_en.pdf](http://www.g20.utoronto.ca/2010/g20_declaration_en.pdf) (accessed 20 August 2013).
29. The G20 Communiqué of Finance Ministers and Central Bank Governors (18–19 April 2013) note that: ‘We will continue to implement ambitious structural reforms to increase our growth potential and create jobs’. See the communiqué, available at: [http://www.g20.org/events\\_financial\\_track/20130418/780961081.html](http://www.g20.org/events_financial_track/20130418/780961081.html) (accessed 20 August 2013).
30. OECD (2010) ‘Pursuing Strong, Sustainable and Balanced Growth: The Role of Structural Reform’, October: 3.
31. OECD (2012) ‘Going for Growth 2012: Structural Reforms can Make the Difference’, Remarks by Secretary-General, 24 February.
32. Bouis et al. (2012).
33. Blanchard et al. (2013).
34. *Financial Times*, 11 April 2013, available at: <http://ig.ft.com/austerity-audit/> (accessed 20 August 2013). As the *Financial Times* concludes: ‘Cuts to welfare payments will hit the local economies of northern towns and cities as much as five times as hard as the Conservative heartland southern counties, according to research commissioned by the Financial Times into the impact of austerity.’
35. The focus of the study is on Northern Ireland, but results for the United Kingdom as a whole are also reported. See Institute for Fiscal Studies: IFS (2013) Executive Summary, available at: <http://www.ifs.org.uk/comms/r78.pdf> (accessed 20 August 2013).
36. Development Committee (2006: i). This report was attached to the 23 April 2006 World Bank’s Development Committee meeting.
37. Krugman (2002). See also Islam and Chowdhury (2000).

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# 3

## Should Developing Countries Target Low, Single-Digit Inflation to Promote Growth and Employment?<sup>1</sup>

*Sarah Anwar and Iyanatul Islam*

### Introduction

The impetus behind this chapter is the increasing global recognition that the pre-crisis macroeconomic policy paradigm needs to be revisited. The former managing director of the IMF argued the case for a ‘wholesale re-examination of macroeconomic policy principles’ in the wake of the Great Recession of 2008–2009 at a March 2011 conference.<sup>2</sup> He observed that ‘recent experience has raised profound questions about the pre-crisis consensus on macroeconomic policies’.<sup>3</sup> Moreover, he specifically noted the pre-crisis advice of ‘keeping inflation low and stable was the best way to secure optimal economic performance’. However, the debate on inflation targeting (IT) has been reignited and needs to be revisited.<sup>4</sup> Olivier Blanchard, the director of the IMF’s Research Department, pointed out ‘key aspects of the old framework that no longer hold post-crisis, including the pre-crisis convergence on a “beautiful construction” of a single monetary policy target – low and stable inflation – and a single policy instrument – the central bank’s policy rate’. He lamented that ‘Beauty is not synonymous with truth’.<sup>5</sup> Even back in 2005, the IMF questioned the desirability of single-digit inflation targets, highlighting that keeping inflation at relatively low levels for a sustained period required high real interest rates and constrained potential seigniorage income. Moreover, they acknowledged that a consensus on the appropriate inflation range for low income countries was lacking (IMF 2005). Despite this, maintaining low, single-digit inflation continued to be an important feature in the Poverty Reduction and Growth Facility (PRGF)-supported programmes, which sought to keep inflation in the 4–6 per cent range in low income countries.



IT, both as policy and normative frameworks, evolved in the institutional environment of the developed countries. Its premise is seductive: targeting low and stable inflation rate also takes care of the 'output gap', that is, the deviation between full employment output – or potential GDP and actual output. If an output gap exists (either negative or positive), then the inflation rate will not be stable. Hence, targeting a low and stable inflation rate takes care of the employment objective as well. Blanchard and Gali (2010) have characterized this as 'divine coincidence', which is only valid under strong assumptions: full wage and price flexibility and forward-looking agents. Once these assumptions are relaxed, monetary policy has to take account of both the employment and price stability objective (Blanchard and Gali 2010). Despite this analytical conundrum, the 'divine coincidence' perspective has influenced the practice of IT since 1990.

As of 2001, the majority of the IT countries are from the developing world and this is likely to be the case for the future. Therefore, the relevance of IT, specifically in the developing country context, should be examined. From a developing country perspective, controlling inflation takes on a great deal of salience if it can be shown that it promotes growth and employment.<sup>6</sup> However, it appears, both in terms of cross-section evidence and country-specific experiences, that the relationship between inflation and growth is nonlinear. This suggests the existence of a 'threshold' effect in which growth is positively related to inflation up to a certain point. Once that point or threshold is reached, inflation has a statistically significant negative impact on growth. The implication is that while high inflation hurts growth, too low an inflation rate might also impose opportunity costs in terms of foregone growth and employment creation. Hence, when setting inflation targets, policy-makers in developing countries should utilize the knowledge on threshold effects. They should also take account of country-specific historical circumstances. Yet, the evidence seems to be that this is not being done. There is a proclivity to set low, single-digit inflation targets that cannot be justified on the basis of empirical evidence and the historical experience of developing countries. A more eclectic approach is desirable in which the core principle of price stability is upheld without necessarily linking this principle to specific numerical targets that are not anchored in robust empirical evidence. This is the key message of the chapter.

The rest of the chapter is structured as follows. In the next section, the inflation targets currently adopted in developing countries are briefly discussed and compared with historical benchmarks. This is complemented by examining the nature of the macroeconomic policy

advice on controlling inflation that is offered to developing countries by the IMF. The objective is to gauge the extent to which inflation targets that are being prescribed for developing countries are indeed too low vis-à-vis historical benchmarks. In the following section, evidence is presented on the relationship between inflation and growth in developing countries, including a tabular summary of various studies on threshold effects in the inflation–growth relationship. Both cross-section evidence and country-specific experiences are reviewed. In the decadal evidence section, the relationship between inflation and growth over recent decades is explored and further evidence is provided on the shift in the relationship in the 2000s. Then additional aspects of IT that are relevant to developing countries are analysed. These are:

- (1) the importance of identifying and taking into account the source of inflation;
- (2) the relationship between inflation targeting and the exchange rate regime;
- (3) the relationship between inflation, poverty and unemployment; and
- (4) whether the benefits of a reduction in inflation are reflected in reduced borrowing costs.

Finally, in the last section, 12 IT countries are compared with 12 non-IT (NIT) countries, with similar characteristics, in terms of macroeconomic, labour market and poverty indicators to explore the differences in performance.

### **Inflation targets in developing countries: an overview**

Presently, 44 countries around the world have adopted IT.<sup>7</sup> Many IT countries are emerging and developing countries (18). The median inflation target of these 18 countries is 3.5 per cent (Table 3.1).<sup>8</sup> Excluding the countries in transition, Armenia, the Czech Republic, Hungary, Poland, Romania and Serbia, there are 12 developing countries, with a median inflation target of 4.25 per cent.

How were these inflation targets set? Was any attempt made to link them to the historical experience of developing countries? An approximation of the long-run inflation rate of the IT developing countries can be obtained by observing the behaviour of inflation over five decades. The median long-run inflation rate (1961–2009) is well above the median inflation target in all the countries under review. Even when removing the period 1989–1995, which was a period characterized by unusually high inflation, it is clear that the median target inflation set is well below

Table 3.1 Inflation targeting countries (emerging and developing countries<sup>9</sup>)

Inflation targeting country	Target inflation rate (%)	Median target (%)
Armenia	3–5	4
Brazil	2.5–6.5	4.5
Chile	2–4	3
Columbia	2–4	3
Czech Republic	1–3	2
Ghana <sup>10</sup>	7.2–11.2	9.2
Guatemala	4–6	5
Hungary	2–4	3
Indonesia <sup>11</sup>	4–6	5
Mexico	2–4	3
Peru	1–3	2
Philippines	3–5	4
Poland	1.5–3.5	2.5
Romania	2–4	3
Serbia	3–6	4.5
South Africa	3–6	4.5
Thailand	0.5–3	1.75
Turkey	4.5–6.5	5.5
Median inflation target (excluding economies in transition: Armenia, Czech Republic, Hungary, Poland, Romania and Serbia, 12)		4.25
Median inflation target (all developing countries and economies in transition, 18)		3.5

Source: Authors' calculations based on Central Bank website reported inflation target rates (2011), list of inflation targeting countries procured from Hammond (2011).

the long-run median inflation rate in all cases (Figure 3.1). Though the goal may have been to set the target well below the high rates of inflation experienced by these countries, the question is whether these targets have been set too low.

In Figure 3.1, inflation rates in the last decade (2000–2009) appear to be significantly closer to the targets. However, the targets are still lower than the median inflation rates in all of the countries,<sup>12</sup> although in Peru and Thailand they are quite close. This would suggest that the inflation targets are unduly influenced by inflation rates in the first decade of the 2000s rather than long run-rates. The fact that the long-run inflation rates (based on 50 years of data) have played little or no role in the determination of inflation targets in developing countries is intriguing. This issue is particularly important if the decline in inflation

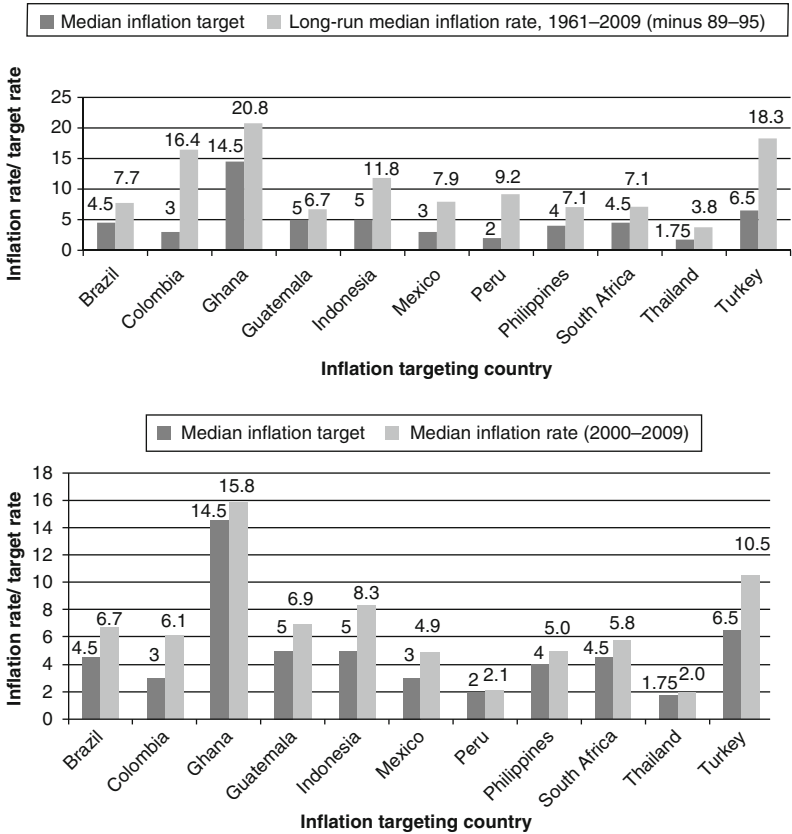


Figure 3.1 Long-run median inflation rates, recent inflation versus median targeted inflation rate

Source: World Bank Databank 2011, authors' calculations.

in the first ten years of the 2000s relative to previous decades turns out to be a temporary phenomenon.

In general, there is not much evidence that monetary authorities in developing countries have made a determined effort to use long-run data to work out an appropriate inflation target. It is possible that they have been influenced by the policy advice they receive from the IMF on controlling inflation. There appears to be some evidence that the IMF prefers low, single-digit inflation when offering policy advice to developing countries in controlling inflation. A 2007 report by the Independent Evaluation Office notes that in 29 sub-Saharan African

countries that had access to IMF financial support in the mid-2000s, the average targeted inflation rate was 5 per cent or less (Independent Evaluation Office 2007). Table 3.2 provides some recent examples on IMF policy statements on controlling inflation in a diversified sample of 19 developing countries. These examples were harnessed from a content analysis of recent (2009 and beyond) Article IV consultations. The IMF policy statements seem to prefer controlling inflation at low, single-digit levels, ranging between medium-term inflation projections of 2.2 per cent for Jordan to 6.5 per cent for Egypt. The content analysis of such policy advice derived from the Article IV consultations was also unable to decipher clearly stated reasons that support a particular inflation target.<sup>13</sup>

The IMF's continued concerns about inflationary pressures are reflected in the 2011 *Global Monitoring Report* (GMR). The report notes that emerging economies are at risk of overheating pressures associated with rapid credit growth, inflation and possible asset price bubbles (GMR 2011). The report argues that inflationary expectations are rising and policy targets have been exceeded in a number of Asian and Latin American countries. Moreover, strong capital inflows that exacerbate overheating pressures are complicating the policy response. The report advises tightening policies.

### **The relationship between growth and inflation: evidence and implications**

Setting low, single-digit inflation is consistent with a growth–inflation relationship that is linear and negative (as in Figure 3.2), but inconsistent with the standard finding that the growth–inflation relationship is nonlinear and exhibits statistically significant threshold effects (as in Figure 3.3). Thus, this crucial element that is corroborated by a wide range of studies seems to be missing in the determination of medium- to long-run inflation targets for developing countries. Given evidence on the nonlinear relationship between inflation and growth and long-run historical trends, there seems to be little justification, at least on growth grounds, to focus monetary policy on bringing inflation down to the low single digits in developing countries, especially if such a policy has economic costs in terms of forgone growth and the capacity of such growth to create jobs. This point is substantiated in this section by a comprehensive review of various cross-section and country-specific studies.

Table 3.3 highlights the various thresholds estimated in the nonlinear relationship between inflation and growth in cross-country studies.

*Table 3.2* IMF policy statements on inflation in 19 developing countries: examples from the Article IV consultation process

Country	Projected inflation to 2015 (%)	IMF policy statements
Albania	3	Recommended cautious monetary stance to be followed with emphasis on 'anchoring inflation expectations'.
Armenia	4	Recommended that policy rates should be raised further if there is evidence of demand pressures or supply shocks on inflation.
Bangladesh	4.5	Has been asked to hike up interest rates to prevent inflation because of the accommodative conditions.
Benin	2.2	Recommended to use monetary policy monitor inflation and use exchange rate as nominal anchor if needed.
Bolivia	3.5	Recommended to tighten monetary conditions to prevent excess liquidity, credit creation and inflation.
Cambodia	3	Recommended to reduce the injection of real liquidity to avoid inflationary pressures and authorities asked to monitor 'liquidity overhang'.
Egypt	6.5	The central bank should be ready to tighten monetary conditions if inflation picks up.
Ethiopia	6.1	'Maintaining a low reserve money growth policy in 2010/11 is needed to sustain a low inflation environment along with raising interest rates.'
Ghana	5	'The authorities should stand ready to tighten policies, if needed, to avoid an upturn in inflation expectations.'
Honduras	5	'The monetary and exchange rate policies should be geared at keeping inflation low.'
India	5.2	Further monetary tightening required to lower inflation.
Indonesia	3.8	A 'continued effective communication of a proactive policy' required to lower the level of inflation. 'Inflationary risks in 2010/11 arise from rising commodity prices and supply-side constraints.'
Jordan	2.2	The central bank should be ready to tighten monetary conditions if inflation accelerates. The exchange rate provides an 'appropriate' nominal anchor.

(continued)

Table 3.2 Continued

Country	Projected inflation to 2015 (%)	IMF policy statements
Kenya	5	If inflationary pressures arise, the central bank should be ready to tighten liquidity conditions. Should also adopt a formal inflation targeting framework.
Malawi	5.9	Recommends that monetary policy should rely more heavily on interest rate adjustments to inflation targets.
Mauritania	5	Recommended authorities to be vigilant and 'respond appropriately' if higher food prices and foreign exchange market pressures intensify.
Mongolia	5*	'The increase in spending, however, will increase inflation (especially the wage and pension increase) and place a heavier burden on monetary policy to contain inflation.'
Rwanda	5	Recommends the authorities to combat inflation by 'strengthening monetary and exchange rate policies to ensure low and stable inflation'. Exchange rate used as a nominal anchor to reduce imported inflation.
Turkey	4.1	Credit growth should be moderated to dampen inflation expectations.

Note: \*From World Economic Outlook database, October 2010.

Source: Compiled from the latest available Article IV consultations.

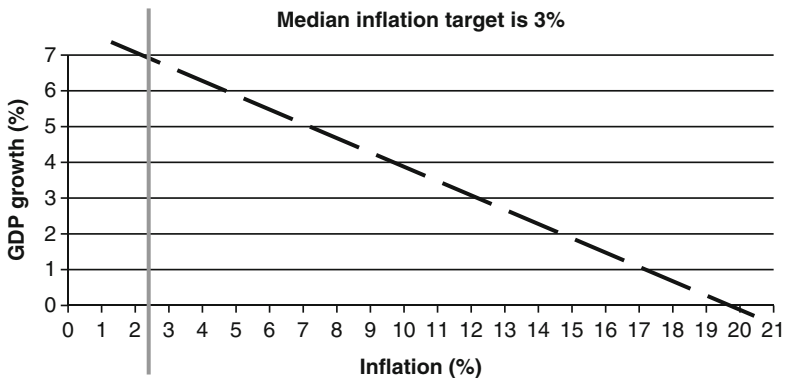


Figure 3.2 Growth and inflation relationship (linear)

Table 3.3 Cross-country threshold studies

Cross-country study	Author and year
Using both cross-section and panel data for a sample of 93 developing and industrialized countries and break points of 15 per cent and 40 per cent in spline regression, Fischer showed not only the presence of nonlinearities in the relationship between inflation and growth, but also that the strength of this relationship weakens for inflation rates above 40 per cent.	Fischer (1993)
Dornbusch and Fischer found that inflation rate in the moderate range of 15–30 per cent does not usually accelerate to extreme levels.	Dornbusch and Fischer (1993)
Using data for 127 countries, Bruno found that growth rates declined only when inflation rates moved beyond 20–25 per cent and that growth increased as inflation rose up to the 15–20 per cent range.	Bruno (1995)
Using panel data for 87 countries, during the period 1970–1990, Sarel found evidence of a significant structural break at an annual inflation rate of 8 per cent – implying that below that rate inflation does not have a significant effect on growth, or it may even show a marginally positive effect.	Sarel (1996)
This study examined the determinants of economic growth using inflation data for 26 countries, which experienced inflation crises during the period 1961–1992. In their empirical analysis, inflation rate of 40 per cent and over is considered as the threshold level for an inflation crisis. They found inconsistent relationship between inflation and economic growth below this threshold level when countries with high inflation crises were excluded from the sample.	Bruno and Easterly (1998)
This IMF study uses data from 140 countries (comprising both developed and developing countries) from 1960–1998 and find that the threshold level of inflation above which inflation significantly slows growth is estimated at 1–3 per cent for developed countries and 11–12 per cent for developing countries. <sup>14</sup>	Khan and Senhadji (2001)
This study uses panel data from both developed and developing countries to find that the estimated thresholds varied widely from as high as 15 per cent per year for the lower to middle income countries to 11 per cent for the low income countries, and 5 per cent for the upper to middle income countries.	Sepeshri and Moshiri (2004)
Nonlinear regression estimates of the relationship between inflation and economic growth for 80 countries over the period 1961–2000 suggest higher inflation is associated with moderate gains in growth up to a threshold of 15–18 per cent inflation.	Pollin and Zhu (2006)

*(continued)*



Table 3.3 Continued

Cross-country study	Author and year
The paper uses a panel-data sample of 124 countries during the period from 1950–2004 and a dynamic panel threshold model to find an estimated inflation threshold of 17.2 per cent for developing countries. If inflation exceeds this critical value, its growth reducing effect is very close to the one estimated for industrialized countries and if inflation is below this critical value there is no significant impact on growth.	Kremer, Bick and Nautz (2009)
Using a panel sample of 46 developing countries (13 IT countries) with data from 1980–2006, the study finds that IT actually results in lower output growth during adoption.	Brito and Bystedt (2010)

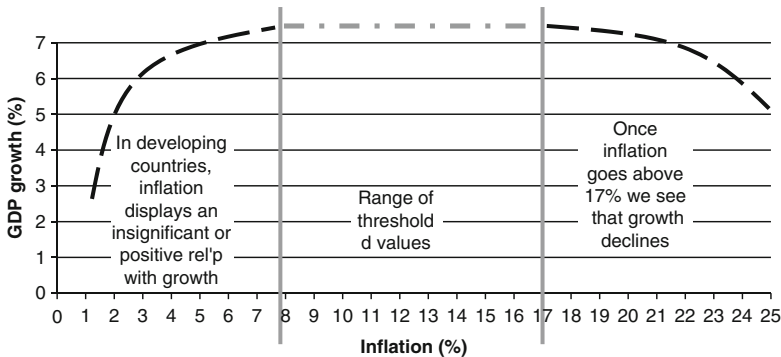


Figure 3.3 Growth and inflation relationship (nonlinear)

Moreover, using a model developed by Khan and Senhadji (2001), many country-level threshold effects have been tested, giving credence to the view that current inflation targets suggested for developing countries are too low. A tabular summary is presented in Table 3.4.

Although there is some variation in the summarized evidence in Table 3.4, overall there is a clear trend that the targeted inflation rates are too low compared to the threshold rates. Out of the nine countries, the study on India is the only one that does not find a threshold effect. Recent cross-country studies (2001–present) suggest inflation threshold rates between 8 and 17 per cent. Country-level studies suggest slightly lower thresholds ranging from 6 to 15 per cent.

Table 3.4 Country-specific threshold studies

Country	Country-level study	Author and year
India	Using annual data for the period 1971–1998, the study finds that there is no threshold level of inflation for India; however, these findings clearly suggest that an increase in inflation from any level has negative effects on economic growth.	Singh and Kalirajan (2003)
Bangladesh	Using annual data for the period of 1980–2005, the estimated threshold model suggests 6 per cent as the threshold level above which inflation adversely affects economic growth.	Ahmed and Mortaza (2005)
Pakistan	Using an annual dataset from 1973–2000, the study estimates the threshold level of inflation as 9 per cent. An inflation rate higher than this rate is detrimental for the economic growth.	Mubarik (2005)
Egypt	Using annual data from the last 25 years and controlling for various growth determinants, the empirical study finds that inflation at 15 per cent and higher has negative effects on growth. This estimated threshold has been found to vary within a broad confidence interval with a lower bound ranging between 9–12 per cent. The study proposes that the central bank target an inflation rate in the 9–12 per cent range.	Kheir-El-Din and Abou-Ali (2008)
Nigeria	The study uses annual time series data from 1970–2008 to establish an inflation threshold of 8 per cent for Nigeria.	Salami and Kelikume (2009)
Mexico	The estimated threshold model suggests 9 per cent as the threshold level of inflation above which inflation significantly slows economic growth.	Risso and Sánchez Carrera (2009)
Indonesia	A threshold VAR model is used to test for changes in the relationship between inflation and growth. <sup>15</sup> The results are consistent with a threshold level of 8.5–11 per cent producing structural shifts in the relationship between inflation and growth.	Chowdhury and Ham (2009)
South Africa	By estimating an inflation threshold in a nonlinear finance–growth regression for quarterly data collected from February 2000–July 2010, the study finds that the least adverse effects of inflation on finance–growth	Phiri (2010)

*(continued)*

Table 3.4 Continued

Country	Country-level study	Author and year
	relationship are established at an inflation level of 8 per cent. Above and below this level, real activity losses gradually begin to be magnified the further one moves from the threshold. This evidence finds the South African Reserve Bank's 3–6 per cent inflation target as being too restrictive in sustaining real economic activity through financial intermediary channels.	
Ghana	Using data from 1960–2008 and threshold regression models, the study finds evidence of an inflation threshold level of 11 per cent at which inflation starts to significantly hurt economic growth in Ghana. Below the 11 per cent level, inflation is likely to have a mild effect on economic activities, while above this threshold level inflation would adversely affect economic growth. The study concluded that the current medium term inflation target of 6–9 per cent annual average set by the Bank of Ghana and the government respectively, well below the 11 per cent threshold, is in the right direction.	Frimpong and Oteng-Abayie (2010)

### Decadal evidence: the growth and inflation relationship

The majority of IT countries adopted IT in the last decade. In the 2000–2007 period (before the onset of the global financial crisis), both emerging and developing countries categorized as medium growth (3–6 per cent) and high growth (above 6 per cent) are associated with higher median inflation at 5.7 per cent and 5.8 per cent respectively (Table 3.5). Low growth countries (less than 3 per cent) have a lower median inflation rate at 3 per cent. This would suggest that higher inflation is associated with higher growth.

This chapter provides evidence to suggest that the inflation–growth nexus has probably changed in the low inflation environment of the 2000s, which implies that the targets should change as well. In order to test whether there is a significant shift in the growth–inflation nexus over time, a scatter plot and simple regression between inflation and growth for emerging and developing countries are shown for various sub-periods between the 1980s and 2000s. In the 1980s, there is a weak negative relationship ( $R^2$  is only 0.004) between inflation and growth

Table 3.5 Median growth and inflation rates (%) (2000–2007)

Growth category	Growth median	Inflation median
High growth (40)	7.7	5.8
Medium growth (74)	4.6	5.7
Low growth (31)	1.8	3.0
Full sample (145)	4.7	5.4

Notes: Sample sizes: 145 countries for 2000–2007 period. Countries classified into performance categories based on growth rates (good = above 6 per cent; medium = 6–3 per cent; low = under 3 per cent).

Source: IMF World Economic Outlook Data 2009, authors’ calculations.

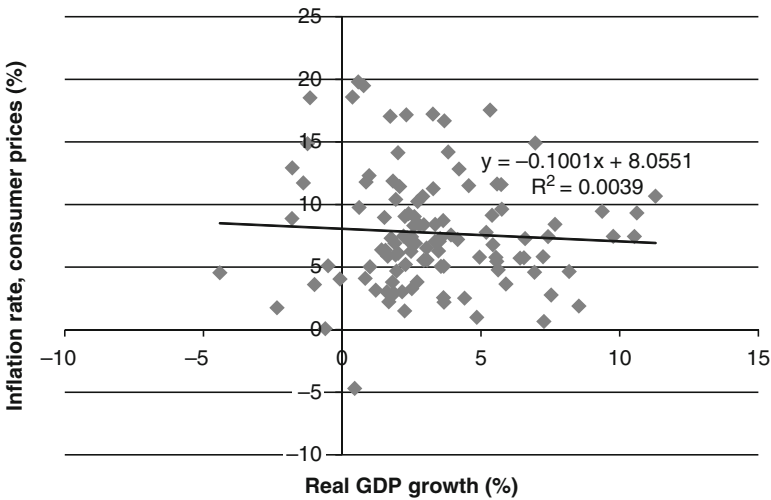


Figure 3.4 Inflation–growth relationship (1980–1989)

Source: IMF World Economic Outlook Data 2009, authors’ calculations, outliers with over 20 per cent inflation were removed; however, the relationship remains the same.

when countries with inflation over 20 per cent are removed as outliers (Figure 3.4). However, the relationship is negative even with all the outliers included. Admittedly, the estimates are based on a simple linear specification. This does not take account of ‘threshold effects’ and whether the thresholds themselves have changed over time.

In the 1990s, the relationship between inflation and growth is slightly positive when countries with inflation above 20 per cent are excluded as outliers (Figure 3.5). There are a large number of countries with extremely high levels of inflation, and when these are included in the sample there is a negative relationship.<sup>16</sup>

In the 2000–2007 period, a shift is discernible in the data. There are not many cases of outliers with extreme rates of inflation. The relationship between growth and inflation is mildly positive (Figure 3.6).

Supplementary evidence to support the thesis of a significant shift in the growth–inflation relationship is provided in Figure 3.7. Here a distinction is made between the relative performance of IT and NIT regimes in terms of growth and inflation. As can be seen, in the first decade of the 2000s, both IT and NIT regimes had rather low inflation relative to the 1990s. IT countries show a much steeper decline in inflation from the 1990s to the 2000s, simply because the median inflation rate for the IT regimes was much higher than NIT countries, but there is not much difference between IT and NIT countries in the 2000s. Both groups have significantly lower inflation averages and the growth average is almost the same.

In developing countries, which have higher thresholds of inflation (above which growth is projected to decline), the present situation could indicate that the threshold is no longer being crossed as often regardless of whether they are IT or NIT countries. It is clear that the positive relationship between growth and inflation seems to hold for both IT and NIT countries in the 2000–2007 period (Figures 3.8 and 3.9)<sup>17</sup>.

Note that these include IT countries that are emerging or developing economies and NIT countries that are emerging or developing economies. Angola and Zimbabwe have been taken out as outliers.

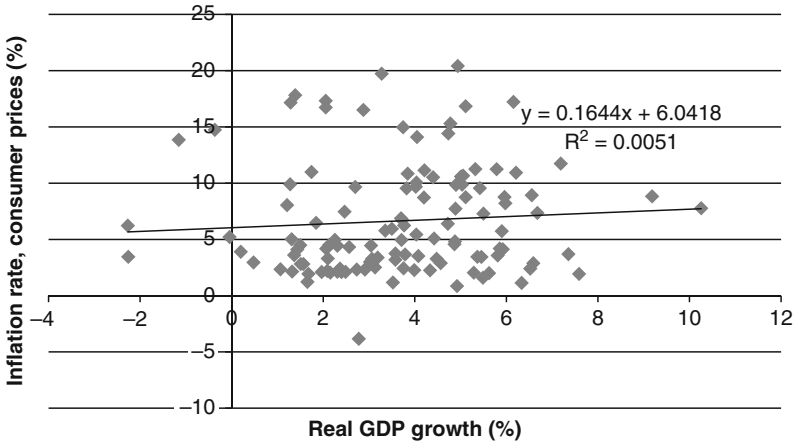


Figure 3.5 Inflation–growth relationship (1990–1999)

Source: IMF World Economic Outlook Data 2009, authors’ calculations, outliers with over 20 per cent inflation were removed; however, the relationship changed as with the cases of inflation above 20 per cent there was a negative relationship.

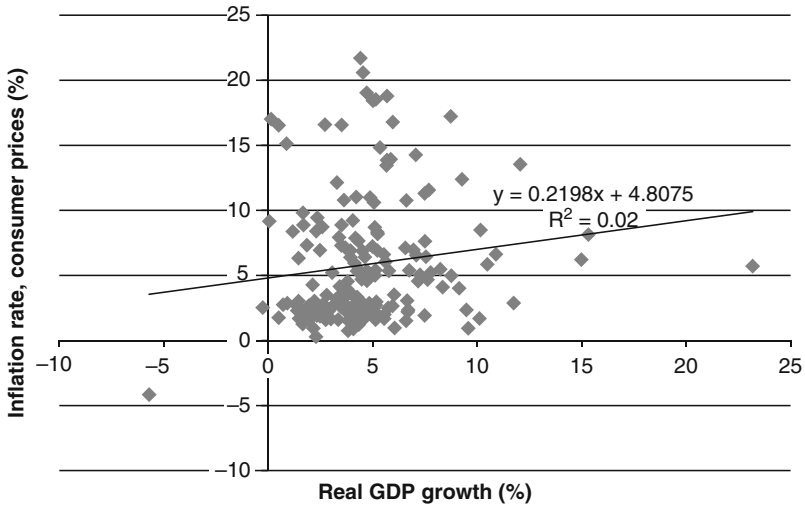


Figure 3.6 Inflation–growth relationship (2000–2007)  
 Source: IMF World Economic Outlook Data 2009, authors’ calculations.

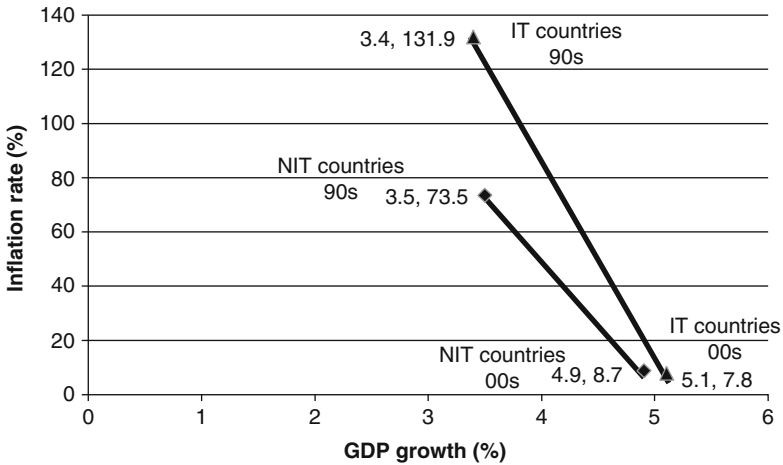


Figure 3.7 Inflation targeting countries and non-inflation targeting countries: inflation rate  
 Source: World Economic Outlook Data 2009, authors’ calculations. This graphical representation draws on the work of Rogers (2010).

A recent study by the IMF compares IT and NIT countries in their performance during the crisis. Though they found that advanced IT countries had higher GDP growth rates than their NIT peers, there was no such difference for emerging countries (Carvalho Filho 2010).

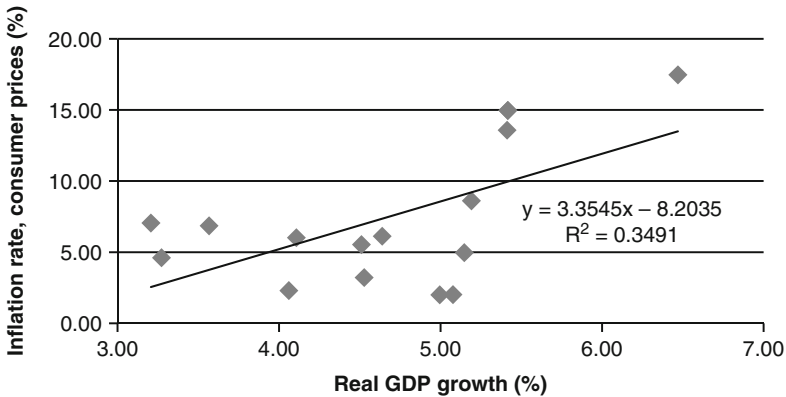


Figure 3.8 Inflation targeting countries: growth–inflation relationship (2000–2007)

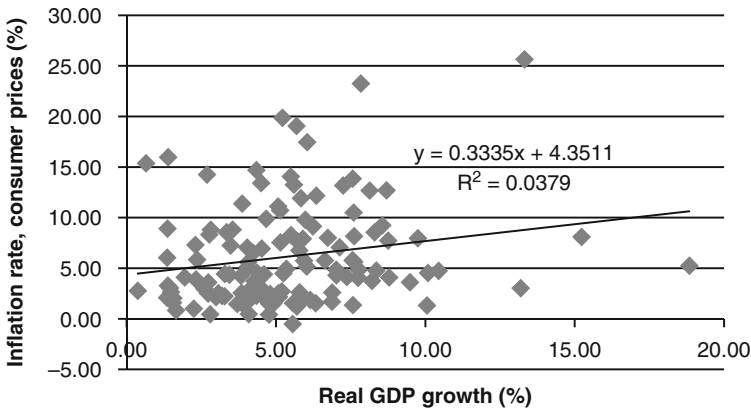


Figure 3.9 Non-inflation targeting countries: inflation–growth relationship (2000–2007)

Source: IMF World Economic Outlook Data 2009, authors' calculations.

## Additional Aspects of Inflation Targeting in Developing Countries

### Sources of inflation matter

Developing countries currently face higher rates of inflation not because of poorer macro-management, but because oil and food prices have increased sharply in recent years and these items represent a much larger share of the average household budget than in rich countries (Stiglitz 2008). Most developing countries are prone to supply shocks

due to their high dependence on agriculture and imported energy. A classic case is the food and energy price shocks that badly hit developing countries in the late 2000s. Today, high and rising food prices pose a major policy challenge. Indeed, the correlation coefficient between median inflation rates in LDCs and a global food price index is 0.8 (Figure 3.10).<sup>18</sup> One estimate suggests that about 44 million people might have been pushed into at least a transient episode of poverty as a result of high and rising food prices during 2008 and 2009.<sup>19</sup>

Supply-side shocks may simultaneously reduce growth and raise inflation. Tightening monetary policy in response to this kind of shock may make the situation worse (Chowdhury 2005; Friedman and Kuttner 1996). Output fluctuations will be greater when macroeconomic policies remain focused on price stability in the face of such shocks as the burden of adjustment falls on only one variable (output). That is, strict IT might introduce a pro-cyclical bias into monetary policy for countries in which supply-side inflation is commonplace. The degree of this bias will depend on the relative importance of supply-side factors in determining inflation and the amount of discretion exercised by monetary authorities. There is a growing body of empirical research that finds a robust, negative cross-country relationship between growth and growth volatility. They also find a significant negative correlation between growth and medium-term

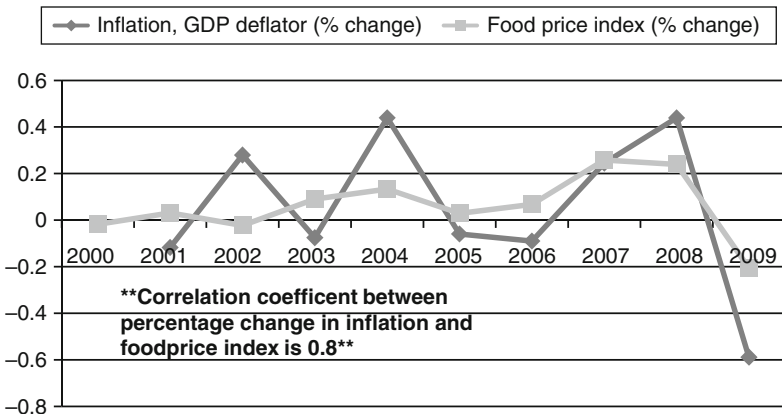


Figure 3.10 Co-movement of inflation and food price index

Source: US Energy Information Association and the Food and Agriculture Organization of the United Nations.



business cycle fluctuations (e.g. Kroft and Lloyd-Ellis 2002; Ramey and Ramey 1995).

This discussion suggests that IT should be flexible enough to respond differently depending on the source of inflation. However, the role that monetary policy can play in dealing with supply shocks is limited and central banks should refrain from using the policy interest rate to deal with such supply-side forces, especially when the inflation surges are accompanied by food price increases. Interventions by the government to enhance food security represent more appropriate responses.

It should be noted that well established IT regimes, most notably in developed countries, seek to be flexible in dealing with supply-side shocks by making a distinction between 'core inflation' and 'headline inflation', where the former eliminates volatile components – such as sharp movements in food and energy prices. Hence, monetary authorities target 'core inflation' and can ignore sharp, but temporary, movements in 'headline inflation'.

It is not obvious that this approach can be readily transplanted to developing countries, partly because of lack of long-run data on 'core inflation' and partly because the greater susceptibility of developing economies to supply-side shocks and greater weight of food prices in the consumer price basket means that 'headline inflation' should not really be ignored. In that case, a flexible approach towards targeting 'headline inflation' is warranted as an IMF study on Sri Lanka makes clear:

The susceptibility to supply-side shocks particularly food prices and large weight of commodities in CPI (Consumer Price Index) basket in Sri Lanka make targeting a narrow range for headline inflation difficult. Thus, consideration could be given to defining a headline inflation target with a relatively wide tolerance level.<sup>20</sup>

### **Exchange rate regimes and inflation targeting**

A major challenge facing IT regimes in developing countries is the nature of the exchange rate regime that can support IT. At one extreme, the exchange rate can be used as a 'nominal anchor' to restrain imported inflation.<sup>21</sup> However, as Krueger (1997) has pointed out, this can lead to painful trade-offs because using the exchange rate as an anti-inflation tool can militate against the role of the exchange rate as a tool for fostering international competitiveness and structural transformation. At the other extreme, one can opt for full exchange rate flexibility, but this can introduce a high degree of volatility that can be inimical to growth

and employment creation. What, then, is the appropriate exchange rate that is compatible with price stability and the goals of growth and employment? There is no easy or clear cut answer. What is clear is that simply aiming for low, single-digit inflation and using the exchange rate to support this cause will not absolve policy-makers from the crucial role of identifying an appropriate exchange rate regime that supports price stability, growth and employment. The rest of this section briefly discusses these issues.

There is evidence that IT countries with a history of high and unstable inflation tend to take into account explicitly developments in the nominal exchange rate when conducting monetary policy (Edwards 2006). Intervening in the foreign exchange market plays a larger role in policy implementation for IT emerging economies than for advanced economies (Stone et al. 2009).

In investigating whether IT is feasible for emerging markets, the degree of openness can pose difficulties (Eichengreen 2002). Openness exposes economies to external disturbances and makes inflation forecasting more difficult, while opening additional, exchange rate related, channels linking the central bank's instruments and targets that operate with very different control lags. An IT central bank will need to respond differently to exchange rate changes depending on their source and persistence.

IT needs to be conducted flexibly, by adjusting monetary policy in response to large exchange rate movements and ignoring small movements. However, the desire to intervene and stabilize the exchange rate will dominate when these movements grow large (Eichengreen 2002). Unfortunately, flexibility can be destabilizing when credibility is lacking. A central bank that temporarily disregards an increase in inflation in order to stabilize the financial system may find its commitment to price stability questioned. Credibility problems will result in those emerging markets where a flexible approach to IT is most valuable to adopt a more rigid version. Moreover, IT will be less attractive the lower the central bank's policy credibility is.

One study suggests a basket band regime is most likely compatible with IT, however, this combination risks assigning too many goals for a limited set of policy instruments (Ito and Hayashi 2004). Though a managed exchange rate regime can be compatible with IT under a number of external and internal shocks, one major caveat is that the optimal mix of inflation and exchange rate targets may become challenging when massive capital flows occur in response to changes in interest rates. For example, in the case of an adverse supply shock,

prices will tend to rise causing the central bank to tighten monetary policy by raising interest rates. This would attract capital inflows despite the contraction in output. The exchange rate may well appreciate as a result, more than offsetting any depreciation pressures coming from the initial shock, which will lead to a fall in export competitiveness. A study on South Africa finds that a strict IT approach is not compatible with significant real output growth whereas a flexible IT framework, which attaches a large weight to the role of real effective exchange rates, results in significant real output growth given the central bank desire to accumulate more foreign exchange reserves and high oil price inflation (Ncube and Ndou 2011). This signals that the real effective exchange rate measuring competitiveness compared to trading partners matters more than domestic currency and nominal effective exchange rate depreciations.

Another way of dealing with the issue of appropriate exchange rate regimes that support the multiple goals of price stability, growth and employment is to simply abandon national currencies and adopt a stable foreign currency as the country's unit of account and means of transactions either on a *de facto* or *de jure* basis. Official dollarization can be seen as an anti-inflation tool put into place when a country is suffering from uncontrollably high inflation and devaluation (Maroney 2010).<sup>22</sup> Others argue, however, that unofficially dollarized economies have a number of disadvantages that may inhibit the conduct of IT and the achievement of the inflation objective. These include the relatively higher exchange rate pass-through on prices, which will reduce the monetary authorities' control of inflation the more so under a floating exchange rate and the vulnerability of the economy to balance sheet effects, which may make the exchange rate flexibility required by IT disruptive and costly (Alvarez-Plata and García-Herrero 2007). Financial institutions and their customers will be saddled with currency mismatches, given the difficulty these countries have in borrowing abroad in their own currencies. Eichengreen (2002) argues that under these circumstances, an IT central bank will be reluctant to let the exchange rate move; it will be unable to provide a flexible exchange rate regime. Whether countries with partially dollarized economies can benefit from IT – whether the framework will provide even limited scope for policy autonomy, and in particular whether it will enable them to allow the exchange rate to fluctuate more freely – depends on the exact nature, extent and effects of their liability dollarization (Eichengreen 2002). If a small depreciation of the exchange rate threatens to destabilize balance sheets and output, then the central bank will be unwilling to

let the exchange rate move. In this case, IT and a hard peg are basically the same. If the perceived advantage of IT is that it permits a greater flexibility, then the advantages of IT are correspondingly less in highly dollarized economies. IT has no obvious advantages under these circumstances.

Dollarization to reduce inflation might have worked in some cases, but has produced mixed results from a growth and employment perspective. In 2000, El Salvador's legislature passed a law mandating the full dollarization of the country, with the goal to make El Salvador more attractive to international investors (Maroney 2010). Some early promising signs include the fall in the interest rate on consumer loans and mortgages from 17 to 11 per cent the day after El Salvador adopted the new currency. However, the economy has remained vulnerable to US interest rate rises and the growth rate has remained slow, averaging less than 3 per cent a year. The sharp rise in the US currency caused by the growing economic crisis of 2008–2009 has also made El Salvador's exports more expensive relative to its competitors.

Peru, a highly dollarized economy, has adopted IT and seems to have done better than El Salvador. Switching to IT in Peru has resulted in a lower exchange rate pass-through on prices, and a higher pass-through of the policy interest rate on banking rates (Alvarez-Plata and García-Herrero 2007). However, the design and implementation of IT in Peru differs substantially from a non-dollarized environment. The differences in the implementation have to do with the inflation forecasting system and the monetary authorities' responses for coping with dollarization risks. Nevertheless, it remains to be seen how sustainable the benefits of official dollarization will be in Peru.

Cambodia is another country where unofficial dollarization has been growing to such a point that it is now 'Asia's most dollarized economy' (Duma 2011: 1). This seems to have occurred against a background of greater macroeconomic and political stability. The increased inflow of dollars has happened in tandem with the increased volume of the national currency (riel). The rise of the garment sector exports, tourism receipts, foreign direct investment and aid have all benefited the urban-based dollarized economy, but the riel-based rural economy – home to the majority of Cambodia's poor – that has lagged behind. Unofficial dollarization is not a suitable long-run development strategy for Cambodia. It needs to embark on a gradual process of de-dollarization.

In sum, the issue of an appropriate exchange rate regime that can support the multiple goals of price stability, growth and inflation is

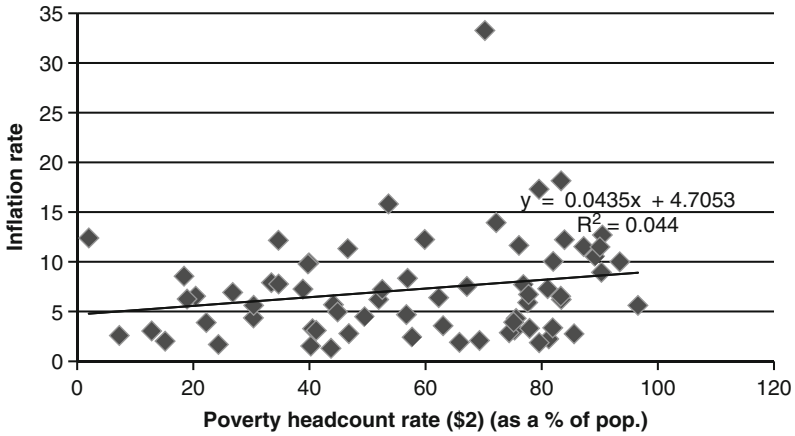
quite complex. There are no clear-cut answers. Simply exhorting countries to embrace low, single-digit inflation leaves unresolved the vexed issue of an appropriate exchange rate regime. Should one aim for the exchange rate regime as a nominal anchor and a primary anti-inflation tool, in which case it engenders painful trade-offs in terms of loss of international competitiveness? Should developing countries go for full exchange rate flexibility, in which case the costs of exchange rate volatility might become prohibitive? Should one aim for dollarization? While there are some success stories, such as Peru, there are other cases, such as El Salvador and Cambodia, where dollarization has engendered mixed results. Ultimately, there is no substitute for a long-run development strategy that is built on a stable and competitive real exchange rate regime.

Once the issue is posed in this way, the complementary role of capital account management becomes critical. Without prudent capital account management, maintaining a competitive and stable real exchange rate becomes difficult because of the twin challenges of volatility of short-term capital flows and liability dollarization. Both have ramifications for exchange rate policy. The volatility of short-term capital flows imparts volatility to the exchange rate, while liability dollarization constrains the capacity of policy-makers to engage in exchange rate adjustments. Diverse country-level examples exist that can provide guidance to prudent capital account management – see Ocampo (2011).<sup>23</sup>

### **Inflation, poverty and employment**

Even if it is shown that IT does a good job at stabilization, it is crucial to remember that the stabilization role of monetary policy is only one of the tasks facing central banks; the other task is to contribute directly to economic growth, employment creation and poverty reduction. Given that the focus of monetary policy has been to keep inflation in the low single digits, and the belief that subsequently growth and employment will take care of themselves, it is not surprising that there is a large gap in the literature on the impact of IT on unemployment (Epstein 2007).

Many economists have argued that inflation affects people with low incomes significantly more than those with high incomes. Since wage adjustments typically lag behind price rises, inflation reduces the real wage. If there are any savings, the poor mostly hold it in money. Inflation reduces the real value of money holdings. If inflation is unanticipated, the poor will be harmed even more disproportionately as they have a weaker bargaining power and are generally unable to hedge against inflation. Using data on median inflation and poverty from



*Figure 3.11* Inflation and poverty relationship  
 Source: World Bank Development Indicators 2009, authors' calculations.

2000–2009, Figure 3.11 suggests that there is a weak positive relationship between inflation and poverty.

What about the attitudes of people to inflation relative to other welfare-reducing indicators, such as unemployment? Are people really inflation-averse? One study examines survey data on people's preferences about inflation versus unemployment (Jayadev 2006). Unlike previous research where people were asked if they disliked inflation, Jayadev investigated 'which is a bigger problem: inflation or unemployment?', thus reflecting that there is a trade-off between the two (at least in the short to medium term). Jayadev finds that those in the lowest quintile of the income distribution are more likely to perceive unemployment as a more serious problem than inflation, whereas those in the top quintile are more likely to have the opposite view. Hence, concerns over employment and inflation have an important poverty dimension.

**Cost of borrowing**

If one uses the data from a diversified sample of least developed countries and compares median lending rates (both nominal and real) and the interest rate spread as a crude measure of borrowing costs for the first decade of the 2000s and the previous decade, borrowing costs seem to have gone up over the relevant period (Figure 3.12). Thus, the low inflation dividend is not being captured in lower borrowing costs that

can support higher investment by both the private and public sector. This has deleterious implications for investment prospects and hence for growth and employment creation.

One reason why borrowing costs may not come down to capture the premium of reduced inflation risks is that such costs might be determined largely by structural factors. It is likely that in many developing countries the banking system is dominated by a few large financial (and multinational) institutions. Such market imperfections might mean that the premium of reduced inflation risks are being largely captured by these institutions rather than being passed on to borrowers in the form of lower cost of credit. These market imperfections are likely to be compounded by the weak institutional and legal environment prevailing in many developing countries. Indeed, one study that examines the lending performance of banks in developed and developing economies using a sample of 91 large banks in 45 countries finds that banks in developing countries charge higher fees and higher interest rates on loans to small and medium-sized enterprises (SMEs) than banks in developed countries. More importantly, they provide a smaller share of investment loans than banks in developed countries (Thorsten et al. 2011). This is important because firm-level surveys consistently show that lack of access to finance and cost of credit are binding constraints on the growth of SMEs in developing countries. IT regimes – however flexible and effective – cannot deal with these structural issues and hence are limited in their capacity to make a major contribution to employment creation. It is

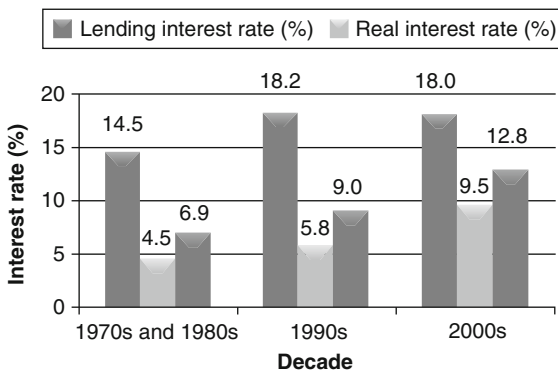


Figure 3.12 Change in median least developed country interest rates

Source: World Development Indicators, World Bank Databank, 2010, aggregates compiled by authors based on available data from LDC countries. The third bar for each time-period represents the spread between lending and deposit rate.

perhaps not surprising that, increasingly, central banks in different parts of the world are incorporating the promotion of access to finance – or financial inclusion – as part of their agenda (Allen et al. 2012).

### **IT versus NIT countries: an assessment of 24 countries**

So far, the evidence has been provided at an aggregate level and has focused on growth and inflation. This section extends the analysis by comparing 12 IT countries with 12 NIT countries with similar characteristics and by using labour market and poverty indicators. However, it is important to highlight that difference in data presented between IT versus NIT does not imply causality. A set of comparator countries was selected by matching an IT country with a NIT country using the criterion of having similar Human Development Index (HDI) scores, similar level of income per capita and being from the same or a nearby region. The comparator set is highlighted in Table 3.6.<sup>24</sup>

Comparing the IT countries with their NIT countries in terms of macroeconomic variables does not indicate large differences. Both had similar GDP growth rates, with inflation being slightly higher for the selected sample of NIT countries (Figure 3.13).

The discussion now focuses on assessing the relative performance of IT and NIT countries for the standardized sample using productivity, labour market and poverty indicators. Data from the 2000–2007 period has been used. While a number of factors, especially labour market institutions, can affect labour productivity and other labour market indicators, including poverty, an interesting association has been found

*Table 3.6* Inflation targeting developing country and comparator country list

<b>Developing IT countries</b>	<b>Comparator country set</b>
Brazil	Venezuela
Chile	Argentina
Colombia	Ecuador
Guatemala	Honduras
Mexico	Uruguay
Peru	Panama
Philippines	India
Indonesia	Jordan
Ghana	Kenya
Thailand	Sri Lanka
Turkey	Lebanon
South Africa	Botswana



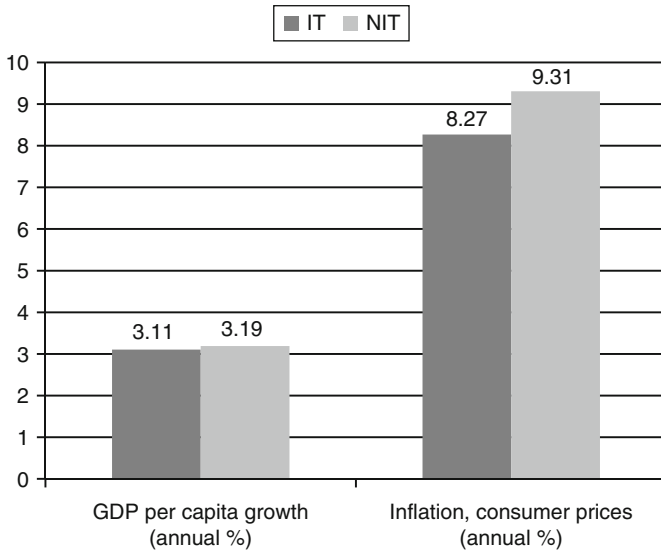


Figure 3.13 Macro indicators (2000–2007)

Source: IMF World Economic Outlook Data 2009, authors' calculations.



Figure 3.14 Labour productivity

Source: IMF World Economic Outlook Data 2009, authors' calculations, time period 2000–2007.

between IT or NIT and these indicators. For example, labour productivity is higher in NIT than in comparable IT countries (Figure 3.14).

While there is not much difference in the unemployment and poverty rates between IT and NIT countries, vulnerable employment is higher in IT countries (Figure 3.15).<sup>25</sup> Of course, simply demonstrating an association between a set of indicators and variations in policy regimes (in this case, IT versus NIT), does not imply causality. Nevertheless, there is little evidence that developing IT countries have better performance indicators than a comparable sample of NIT developing countries.



Figure 3.15 Labour market indicators (2000–2007)

Source: Key Indicators of the Labour Market (KILM), 6th edition, ILO; authors' calculations.

## Conclusion

There is ample evidence to suggest the current inflation targets that have been set in developing countries that have adopted IT regimes are probably too low. They seem to have been influenced by data from the first decade of the 2000s. Of course, worldwide inflation has come down in the 2000s, but whether this will last remains an open question. Long-run inflation rates based on observations of five decades suggest that the targeted inflation rates are not in accordance with historical trends. There is some evidence that the targeted inflation rates are influenced by the policy advice that the IMF offers to developing countries, but no clear reasons are given to justify such policy advice. The literature on the nonlinear relationship between inflation and growth clearly indicates that the threshold at which inflation becomes harmful to growth is much higher for developing countries and that moderate inflation up to a certain point has a positive impact on growth.

There is little evidence that monetary authorities in developing countries have used this knowledge on the threshold effects of inflation on growth to determine inflation targets. Decadal evidence indicates that the inflation–growth relationship has shifted in the 2000s. Implementing IT regimes represents a major challenge in the presence of supply-shocks, which are a common phenomenon in developing countries. Furthermore, there is little evidence that the benefits of reduced inflation are being transmitted in the form of reduced costs of borrowing since

such costs are likely to be determined by structural factors. This chapter has also shown that it is difficult to establish that IT developing countries do significantly better in terms of labour productivity, vulnerable employment, working poverty and growth than their NIT counterparts.

The chapter has also reviewed the quite complex issue of an appropriate exchange rate regime that can support the multiple goals of price stability, growth and inflation. There are no clear-cut answers. Simply exhorting countries to embrace low, single-digit inflation leaves unresolved the vexing issue of an appropriate exchange rate regime. The chapter has argued that in designing an appropriate exchange rate for developing countries, one should take account of the painful trade-offs that can emerge if the exchange rate is used primarily as an anti-inflation tool. Furthermore, if policy-makers embrace fully flexible exchange rates, then they have to bear the deleterious consequences of exchange rate volatility. There is also the issue of dollarization. While there are some success stories, dollarization has entailed mixed results. Ultimately, a successful development strategy requires a commitment to competitive and stable real exchange rate regimes. This will require a heterodox approach that upholds the prudent management of exchange rate regimes that can support durable job creation and structural transformation.

What, then, is a way forward? One should distinguish between the need to safeguard price stability as a core principle and the more restrictive notion of targeting a specific inflation rate. One should go back to the refreshing eclecticism of the founding fathers of the IMF. As the preamble of the IMF's Article of Agreement IV notes:

each member shall ... endeavor to direct its economic and financial policies toward the objective of fostering orderly economic growth with reasonable price stability, with due regard to its circumstances.

The preamble not only expects monetary policy to attain simultaneously both a reasonable price target and orderly growth, but also, contrary to the IT regime, it does not specify any quantitative target. There is no presumption of the suitability of one target (less than 5 per cent) that is universally applicable as due regard needs to be given to country specific circumstances.

## Notes

1. This is a revised and updated version of Anwar, S. and Islam, I. (2011) 'Should Developing Countries Target Low, Single-Digit Inflation to Promote Growth and Employment?', Employment Working Paper No. 87, ILO, Geneva.

2. 'IMF Triggers Debate on Crisis Lessons', IMF Survey online, 8 March 2011, available at: <http://www.imf.org/external/> (accessed 20 August 2013).
3. 'Macro and Growth Policies in the Wake of the Crisis', opening remarks by Dominique Strauss-Kahn, former Managing Director, IMF, at the IMF Conference on Macro and Growth Policies in the Wake of the Crisis, Washington, DC, 7 March 2011, available at: <http://www.imf.org/external/> (accessed 20 August 2013).
4. 'Macro and Growth Policies in the Wake of the Crisis', see note 3.
5. 'IMF Triggers Debate On Crisis Lessons', see note 2. See also Blanchard et al. (2012).
6. For a comprehensive review of empirical and theoretical literature, see Chowdhury (2005).
7. This is based on a definition that 'involves the public announcement of medium-term numerical targets for inflation, with an institutional commitment by the monetary authority to achieve these targets'. See <http://www.imf.org/external/np/mfd/er/2008/eng/0408.htm> (accessed 20 August 2013). New Zealand was the first country to formally adopt an inflation target of 0–3 per cent in March 1990.
8. Authors' calculation based on available data from central bank websites as of April 2011. The median is, of course, the value of a statistic in the middle of a given distribution and often used in estimates of inflation rates. See, for example, the Federal Reserve Bank of San Francisco, available at: <http://www.frbsf.org/csip/pce.php> (accessed 20 August 2013).
9. The developing country list is based on IMF classifications for Developing and Emerging Economies, available at: <http://www.imf.org/external/pubs/ft/weo/2010/02/weodata/groups.htm> (accessed 20 August 2013); Economies in Transition are separated based on UN, available at: <http://unpan1.un.org/intradoc/groups/public/documents/un/unpan008092.pdf> (accessed 20 August 2013) and IMF classifications.
10. The inflation target was 9.2 (between 7.2 and 11.2 per cent) in December 2010, the target is revised annually: see <http://www.bog.gov.gh> (accessed 17 October 2013).
11. The inflation target in Indonesia will be revised even lower to 4.5 per cent in 2012: see <http://www.bi.go.id/web/en/Moneter/Inflasi/Bank+Indonesia+dan+Inflasi/penetapan.htm> (accessed 20 August 2013).
12. Data for Chile were not available.
13. See also Chapter 3 in this volume.
14. However, the authors acknowledge that the estimated coefficients in the growth-inflation regression may be biased due to endogeneity between growth and inflation. They also note that 'The positive effect of inflation on growth is only present for inflation rates lower than ... 18 per cent for developing countries'. (p. 16). This implies that the upper bound is 18 per cent.
15. The results so far are exploratory and limited by a small data sample.
16. There is no simple way of resolving outliers. Should they be excluded or included in the study of the inflation–growth trade-off? The position taken in this chapter is that the estimated trade-off is sensitive to a few cases of high inflation rates. Barro (2003: 269), one of the pioneers of cross-country growth regressions, acknowledges this when he notes: 'the main driving

- force of the estimated relationship is the behavior at high rates of inflation – notably at rates above 20 to 30 per cent per year’.
17. IT is important too, not that becoming an IT country is not exogenous as they had higher inflation to begin with.
  18. Authors’ estimates.
  19. See the March 2013 issue of the World Bank’s ‘Food Price Watch’, available at: <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTPOVERTY/0,,contentMDK:22838758~pagePK:210058~piPK:210062~theSitePK:336992,00.html> (accessed 20 August 2013).
  20. Anand et al. (2011: 12). The authors suggest that, over time, the monetary authorities in Sri Lanka might wish to construct a consistent series of ‘core’ inflation.
  21. An exchange rate becomes a nominal anchor when ‘The monetary authority stands ready to buy or sell foreign exchange at given quoted rates to maintain the exchange rate at its predetermined level or within a range’. See <http://www.imf.org/external/np/mfd/er/2008/eng/0408.htm> (accessed 20 August 2013).
  22. Dollarization is the process by which a country abandons its own currency and adopts the currency of a more stable country as its legal tender. Though the concept was coined in reference to the US dollar, the conversion to any foreign, stable currency is usually known as dollarization. Dollarization can be full or unofficial. Full dollarization occurs when a government makes the official decision to use a foreign currency for all transactions including government and private debt. Unofficial dollarization is much more common with most emerging-market countries being unofficially dollarized to various degrees.
  23. See also the discussions in Chapters 1 and 3 of this volume.
  24. Of course, the selection procedure is arbitrary, but there are no commonly agreed criteria that can be used to design an appropriate sample. Given that the sample of IT developing countries is rather small (12 if one excludes the transition economies), the sample of NIT developing countries then becomes too large and diverse. Hence, the rationale for comparing 12 IT developing countries with a sample of 12 NIT countries that exhibit similar characteristics.
  25. Vulnerable employment consists of own-account workers plus unpaid family workers. This is the standard definition used in the UN system-wide monitoring of the MDGs.

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## **Part II**

# **Structural Transformation and the Development of Capabilities**

# 4

## Structure Matters: Sectoral Drivers of Growth and the Labour Productivity–Employment Relationship

*David Kucera and Leanne Roncolato*

### Introduction

The role of manufacturing in economic development was the subject of an online debate between Ha-Joon Chang and Jagdish Bhagwati hosted in 2011 by *The Economist*, with Chang arguing in favour of and Bhagwati against the motion that ‘an economy cannot succeed without a big manufacturing base’ (*The Economist* 2011). After two rounds of debate, readers were invited to side with either Chang’s or Bhagwati’s views. Two contrasting developments, *The Economist* argued, gave the debate special resonance. First was the post-2007 global crisis, during which some countries more dependent on financial services fared poorly – for example, the United Kingdom and the United States – while others more dependent on manufacturing did better – for example, Germany and China. Second, and of longer precedence, was the so-called ‘emergence’ of India, for which such advanced services as information technology (IT) and business processing outsourcing (BPO) played highly visible roles.

Indeed, much of the debate circled around the interpretation of India’s development path and its relevance for other developing countries, in particular whether and how services can provide an alternative to manufacturing as a driver of economic development. For both Chang and Bhagwati, a key reference in this regard was Kaldor, whose seminal works on economic growth were published in the 1960s (Kaldor 1966, 1967, 1968). In this sense, the debate turned on the relevance of Kaldor’s theories, particularly what have come to be known as ‘Kaldor’s growth laws’, for developing countries today. These growth laws state, in short, that more rapid expansion of manufacturing relative to the economy as a whole results in more rapid GDP growth as

well as more rapid productivity growth within manufacturing and also agriculture. Kaldor also argued for the importance of returns to scale at the macro level that were not measurable at the level of individual firms or sectors – that is, positive externalities or spillovers (Kaldor’s application of Young’s work on increasing returns (Young 1928. See Thirwall 1983: 349)).

At least historically, labour has tended to shift from agriculture to manufacturing in the process of economic development, that is, from a low average productivity to a high average productivity sector. Such structural transformation creates a positive effect on aggregate productivity. This is an example of a *reallocation effect*, defined as the change in aggregate productivity resulting from shifts in the composition of employment or output among sectors with different levels of productivity. This is distinct from the *within-sector effect*, defined as the change in aggregate productivity resulting from the sum of changes in productivity within sectors (more detailed definitions of these effects are provided in the method and data section).

For Kaldor, reallocation effects were less important than the within-sector effects *induced* by such reallocations. Within manufacturing, productivity growth is argued to result from the sector’s particular amenability to increasing returns to both static and dynamic economies of scale, the latter characterized by learning-by-doing (Kaldor’s application of Verdoorn’s Law (Verdoorn 1949)). Within agriculture, productivity growth is argued to result in part from the reduction of surplus labour in the form of ‘disguised unemployment’ (Kaldor 1968: 386). This passive form of productivity growth in agriculture is complemented by an active form, which Kaldor argues ‘is mainly dependent on the progress of land-saving, as distinct from labor-saving innovations’, and that he describes as follows: ‘These land-saving innovations include not only technical discoveries but the social framework of agriculture, the whole network of institutions which determine land tenure, and the progress of education in rural areas’ (1967: 56).

Summarizing these dynamics and the relative importance of reallocation versus within-sector effects, Kaldor writes:

It is my contention that it is the rate at which this transfer [of labour from low to high productivity sectors] takes place which determines the growth rate of productivity of the economy as a whole. The mechanism by which this happens is only to a minor extent dependent on the *absolute* differences in the levels of output per head between the labour-absorbing sectors and the surplus-labour sectors [that is,

employment reallocation effects]. The major part of the mechanism consists of the fact that the *growth* of productivity is accelerated as a result of the transfer at both ends – both at the gaining-end and the losing-end; in the first, because, as the result of increasing returns, productivity in industry will increase faster, the faster output expands; in the second because when the surplus-sectors lose labour, the productivity of the remainder of the working population is bound to rise.  
(Kaldor 1968: 386)

Of the service sector, Kaldor had a dualistic view, characterized by what can be called traditional and advanced services. Traditional services – urban informal employment in effect – were a source of surplus labour expected like agriculture to contract in the process of economic development. But advanced services were a complement to manufacturing and were expected to grow. In Kaldor's words:

In the field of services however (unlike in agriculture) there are two contrary processes at work: on the one hand industrialization absorbs labour from services on a large scale; on the other hand, the growth of industry itself gives rise to the growth of services of various kinds which are both complementary and ancillary to industrial activities (by 'ancillary' I mean that the demand for these services, e.g. transport, distribution, accountancy, banking services, etc. *are derived from, but cannot generate, industrial activities*). As a result, the total employment in services tends to rise during the process of industrialization. ...

(Kaldor 1968: 387, emphasis added)

We know now that traditional services often expand alongside industrialization – witness the vast literature on urban informal employment – but that is another story.<sup>1</sup> More to the point are the contrasting views on the relationship between services and manufacturing in the process of development, which variously see services (in particular advanced services) as:

- (1) A potential *substitute* for manufacturing, enabling countries to leap-frog from agriculture to services and pass over manufacturing to a large extent.
- (2) A *lagging complement* to manufacturing, expanding alongside manufacturing because services are, as Kaldor puts it, 'derived from ... industrial activities'.

- (3) A *leading complement* to manufacturing, expanding alongside manufacturing because, in contrast to Kaldor, services *can* generate industrial as well as other activities. In this view, services can be a leading sector though a strong manufacturing base remains essential.

Exemplary of the first view are Bhagwati as well as Ghani and Kharas (2010). India's experience shows, Ghani and Kharas argue, that services can provide an alternative to manufacturing as a leading sector in driving economic growth, for services have become increasingly tradable and share with manufacturing the potential for increasing returns to scale. They write, 'The globalization of services provides alternative opportunities for developing countries to find niches, beyond manufacturing, where they can specialize, scale up and achieve explosive growth, just like the industrializers' (2010: 4).

This export-oriented path is sustainable, they argue, because the potential global market for services is vast and largely untapped (see NASSCOM-McKinsey 2005).

Representing the view that services are a lagging complement to manufacturing are Kaldor and Chang, with Chang writing that '[M]ost of the more dynamic elements of the service sector are dependent on the manufacturing sector' (*The Economist* 2011).<sup>2</sup>

The third view shares with the first that services can be a leading sector, but emphasizes domestic inter-industry linkages, spillover effects and the importance of the co-evolution of services and manufacturing and indeed agriculture for sustainable growth. Exponents of this view are Joshi (2004) and Dasgupta and Singh (2005, 2006).<sup>3</sup> Summarizing this perspective with respect to India, Dasgupta and Singh write:

In the case of IT, in particular, it seems that the services are leading to the expansion of manufacturing, rather than the other way round. A policy implication of this evolution is that India should take advantage of its strength in IT and use it extensively in all areas of the economy in order to upgrade manufacturing and agriculture as well as services.

(Dasgupta and Singh 2005: 1055)

While Dasgupta and Singh remark that trade in services has improved India's balance of payments, they also caution that the importance of manufacturing 'can hardly be exaggerated in view of the high income-elasticity of demand for manufactures at India's level of per capita income' (2005: 1055). More than that, they argue that the potential

for positive spillovers from services is even greater than from manufacturing, so that it is strategic for India to leverage this potential for the benefit of both its manufacturing and agricultural sectors.

For what it is worth, online voters decided the debate between Chang and Bhagwati in favour of the former. Yet the view that services can be a leading complement to manufacturing suggests that there is something of value in what both economists have to say.

This chapter empirically addresses three main issues. First is the issue of ‘jobless growth’, or more precisely the relationships among labour productivity, output and employment growth as well as the growth of the working age population and labour force. Second is the relative importance of different sectors in contributing to aggregate labour productivity growth and thus their role in structural transformation. Third is the relative importance of within-sector versus employment reallocation effects in contributing to aggregate labour productivity growth. For all three issues, evidence is provided in this chapter on variation across countries and regions and over time, going back to the mid-1980s. Within the developing world, a number of differences are highlighted between Asia and Latin America and the Caribbean. The chapter also provides a survey of the most closely-related empirical studies and closes with a discussion of some policy implications of the findings.

Key findings are that there is a stronger positive relationship between output and employment growth in developed than developing countries, a stronger negative relationship between labour productivity and employment growth in developing than developed countries, and that ‘jobless growth’ is more of a problem for developing countries in Asia than the more slowly-growing countries of Latin America and the Caribbean; that aggregate labour productivity growth in Asia as a whole is driven as much by services as by industry, in spite of strong differences between countries (e.g. with industry dominant in China and services dominant in India); and – consistent with Kaldor – that within-sector effects on aggregate labour productivity growth are more important than employment reallocation effects, a pattern that holds for all regions. This last finding is generally consistent with the related literature, with McMillan and Rodrik (2011) the exception.

## Literature review

Several prior studies decompose labour productivity growth to address a similar set of questions, notably Pieper (2000), Ocampo, Rada and Taylor (2009), Timmer and de Vries (2009) and McMillan and Rodrik (2011).

These studies differ in method, and in this regard we closely follow Pieper and Ocampo, Rada and Taylor. These studies also differ regarding years, countries and sector breakdowns evaluated as well as how value-added is denominated (whether in constant national currencies, constant US dollars or purchasing power parity (PPP) US dollars), and these particulars as well as those of the authors' own study are summarized in Table 4.1.

Pieper (2000) evaluates 30 developing countries over two periods, 1975–1984 and 1985–1993, based on a four-sector breakdown: agriculture, industry (mining, manufacturing and construction), industry services (public utilities, transport, storage and communication, finance, insurance, real estate and business services) and other services. Pieper provides evidence that industry contributed most to aggregate labour productivity growth in both periods, followed by other services. The contribution of these two sectors was stable between the two periods, but there was a big shift away from agriculture and toward industry services, illustrating the increased importance of the latter in contributing to aggregate labour productivity growth.<sup>4</sup> Looking at individual countries, Pieper observes that the more rapidly growing countries in Asia had large and often increasing contributions of industry to aggregate labour productivity growth, whereas many countries in Latin America and sub-Saharan Africa had low or declining contributions of industry.

In her analysis of employment, the author finds that countries with positive contributions of industry to aggregate employment growth tended to experience favourable aggregate employment growth, and vice versa for countries with negative contributions of industry. The contribution of industry to employment increased between the two periods in most countries in Asia, with India and Singapore notable exceptions (though the contribution of industry to employment remained positive in both periods). Pieper also finds that most countries in Asia (but not Latin America or sub-Saharan Africa) were able to combine labour productivity increases with employment increases, for both industry and the economy as a whole, indicating that there is no necessary trade-off between the two.<sup>5</sup>

Pieper elaborates on this last point by classifying countries as 'low-road' versus 'high-road', depending on whether their patterns of development were 'economically sustainable' and 'socially sustainable' – defined as 3 per cent or greater average annual labour productivity and employment growth, respectively – with 'low-road' countries being below and 'high-road' countries being above both thresholds. For the 1985–1993 period, there were only four 'high-road' countries and all were in Asia: Indonesia,

Table 4.1 Specifications of studies in literature review

	Pieper (2000)	Ocampo, Rada and Taylor (2009)	McMillan and Rodrik (2011)	Timmer and de Vries (2009)	Kucera and Roncolato
<b>Years</b>	1975–1984, 1985–1993	1990–2004	1990–2005	1950–2005	1984–1998, 1999–2008
<b>Number of countries</b>	30	57	38	19	81
<b>Regions and number of countries within</b>	9 South and East Asia 2 Turkey and Middle East 11 LAC 8 SSA	8 Semi-industrialized 6 Central and Eastern Europe 2 Former USSR 4 Tigers 1 China 4 South Asia 4 South-East Asia 3 Small Andean 5 CA and Caribbean 10 MENA 4 Representative Africa* 6 Other Africa**	9 High income 10 Asian 9 LAC 1 Middle East 9 Africa	9 LA 9 Developing Asia 1 Japan	25 Developed 18 Central and South-East Europe, CIS 14 Developing Asia 19 LAC 3 MENA 2 SSA
<b>Sectors</b>	1) Agriculture 2) Industry 3) Industry services 4) Other services	1) Agriculture 2) Industry 3) Services	1) Agriculture, hunting, forestry, fishing 2) Mining, quarrying 3) Manufacturing 4) Utilities	1) Agriculture 2) Manufacturing 3) Other industries 4) Market services	1) Agriculture, hunting, forestry, fishing 2) Mining, utilities 3) Manufacturing 4) Construction

*(continued)*



Table 4.1 Continued

	Pieper (2000)	Ocampo, Rada and Taylor (2009)	McMillan and Rodrik (2011)	Timmer and de Vries (2009)	Kucera and Roncolato
<b>Data</b>	Output: <i>UN National Accounts</i> , in constant national currency; Employment: <i>ILO</i>	Output: <i>World Bank WDI</i> , in constant US dollars; Employment: <i>ILO</i> GET database	5) Construction 6) Wholesale and retail trade, restaurants, hotels 7) Transport, storage, communication 8) Finance, insurance, real estate, business services 9) Other services	5) Non-market services	5) Wholesale and retail trade, restaurants, hotels 6) Transport, storage, communication 7) Other services
	Output: <i>UN National Accounts</i> , in constant national currency; Employment: <i>ILO</i>	Output: <i>World Bank WDI</i> , in constant US dollars; Employment: <i>ILO</i> GET database	Output: <i>GGDC</i> and national sources, in PPP dollars; Employment: <i>GGDC</i> and national sources	Output: <i>GGDC</i> in constant national currency; Employment: <i>GGDC</i>	Output: <i>UN National Accounts</i> and <i>GGDC</i> , in constant national currency; Employment: <i>ILO</i> Laborstat and <i>GGDC</i>

Notes: \* includes Ghana, Kenya, The United Republic of Tanzania and Uganda; \*\* includes Cameroon, Ethiopia, Ivory Coast, Mozambique, Nigeria and Zimbabwe.

the Republic of Korea, Malaysia and Thailand. All four had large contributions of industry to aggregate labour productivity growth in both periods, consistent with industry being a leading sector for development. India and Singapore were noted already as having smaller contributions of industry to aggregate employment growth in the 1985–1993 than the 1975–1984 period, and were also the two Asian countries classified as ‘economically sustainable’ but not ‘socially sustainable’ in a more recent period, again suggesting the importance of industry.

Ocampo, Rada and Taylor (2009) evaluate 12 country groups comprised of 57 developed and transition countries, based on a three-sector breakdown: agriculture, industry (mining, manufacturing and construction) and services (including public utilities). Based on average annual GDP per capita growth rates from 1970 to 2006, the authors classify these groups as having experienced ‘stagnant’, ‘slow’ or ‘sustained’ growth. The four groups that experienced sustained growth were all in Asia: the Tigers (Malaysia, Singapore, the Republic of Korea and Taiwan (China)), China, South-East Asia and South Asia. These four groups also experienced the largest declines in agricultural output shares and the largest increases in industrial output shares.

The authors decompose labour productivity growth for the 1990–2004 period, and address the relative importance of employment reallocation versus within-sector effects. The chapter finds that of the three sectors, industry contributed most to labour productivity growth for the Tigers, China and South-East Asia – driven more by the within-sector effect for the Tigers and China and more by the reallocation effect for South-East Asia.<sup>6</sup> Consistent with Pieper’s results, this suggests the importance of industry as a leading sector. For South Asia, in contrast, services were the most important contributor to aggregate labour productivity growth – driven more by the within-sector effect, though the reallocation effect was also important. This reflects the importance of services in India in particular, by far the largest country in South Asia.

The two country groups representing sub-Saharan Africa are classified as having experienced ‘stagnant’ growth, and are notable for having low within-sector effects on labour productivity growth as well as negative reallocation effects for agriculture.

The larger countries of Latin America dominate the group of semi-industrialized countries, for which all three sectors contributed positively to labour productivity growth through the reallocation effect whereas the within-sector effect was positive for agriculture and negative for both industry and services.<sup>7</sup> Indeed, the total reallocation effect was about 1 per cent compared to average annual aggregate labour productivity

growth of only about 0.2 per cent. The total reallocation effect was also positive for the group of Central American and Caribbean countries.<sup>8</sup> Comparing Asia and Latin America at large, the authors find that total reallocation effects are positive for both regions but that total within-sector effects are much larger for Asia. In sum, the wide gap in aggregate labour productivity growth between the two regions is accounted for more by within-sector than reallocation effects. These results are emphasized here because they are corroborated by Timmer and de Vries (2009) and our own analysis but are at odds with the conclusions of McMillan and Rodrik (2011).

The authors also evaluate sectoral contributions to employment growth and observe large shifts from agriculture to services. Indeed, the sectoral contribution of services to employment growth was consistently positive for all 12 country groups. For industry, the picture is mixed, with negative contributions for seven of 12 country groups. The contribution of industry to employment growth was effectively zero in China and South Asia and was strongly negative for the Tigers. Considering these findings, the authors write, 'An old structuralist observation in development economics is that the industrial sector is the main motor for productivity increases but not for job creation' (Ocampo, Rada and Taylor 2009: 47).

McMillan and Rodrik (2011) evaluate 38 developed and developing countries from 1990 to 2005, based on a nine-sector breakdown corresponding to the major divisions of ISIC Revision 2. The authors argue that the wide gaps in labour productivity growth between Asia on the one hand and Latin America and Africa on the other are accounted for more by 'structural change' effects (their equivalent for employment reallocation effects) than within-sector effects. They write, 'where Asia has outshone the other two regions is not so much in productivity growth within individual sectors, where performance has been broadly similar, but in ensuring that the broad pattern of structural change contributes to, rather than detracts from, overall economic growth' (2011: 68). Based on unweighted regional averages, the structural change effect is positive for Asia and negative for Latin America and Africa and the within-sector effect is indeed broadly similar between the three regions, at 3.3, 2.2 and 2.1 per cent, respectively.

McMillan and Rodrik (2011) also present these results using *weighted* regional averages, which are more directly comparable with Ocampo, Rada and Taylor's results for country groups (2009). Based on weighted regional averages, the structural change effect remains negative in Africa, turns positive though effectively zero in Latin America and becomes more strongly positive in Asia. Together with the within-sector

effects based on weighted regional averages, these results indicate that the wide gap in aggregate labour productivity growth between Asia and Latin America is accounted for more by the within-sector effect – with about a 3.7 percentage point difference between the regions – than the structural change effect – with about a 1.3 percentage point difference.<sup>9</sup>

Timmer and de Vries (2009) evaluate nine countries in Latin America and ten in Asia (including Japan) from 1950 to 2005, divided differently for each country into periods of moderate growth, growth accelerations and growth decelerations. Results are presented for a five-sector breakdown: agriculture, manufacturing, other industries (mining, public utilities and construction), market services (wholesale and retail trade, transport, storage and communication, and finance, insurance, real estate and business services) and non-market (other) services.<sup>10</sup>

At the sectoral level, Timmer and de Vries (2009) find that manufacturing contributed most to aggregate labour productivity growth during periods of moderate growth but that market services contributed most during growth accelerations and decelerations. The role of services was also remarked by Pieper (2000), regarding the increased contribution of industry services to aggregate labour productivity growth, as well as by Ocampo, Rada and Taylor (2009), regarding services being the most important contributor to labour productivity growth in South Asia. Country-level results from Timmer and de Vries show that services was a particularly important contributor to aggregate labour productivity growth in Hong Kong (China) (for market services), India (for market and non-market services), Singapore (for market services) and Taiwan (China) (for market and non-market services), results that are broadly corroborated by analysis by the authors of this chapter.

Based on averages (unweighted) for the 19 countries at the aggregate level, the chapter finds that within-sector effects were more important than employment reallocation effects in contributing to labour productivity growth whether during periods of moderate growth, growth accelerations or growth decelerations. In periods of moderate growth, for example, within-sector effects accounted for 75 per cent of aggregate labour productivity growth. Regarding growth accelerations, the authors write that these 'are explained by productivity increases within sectors, not by reallocation of employment to more productive sectors' (Timmer and de Vries 2009: 165). Based on results for individual countries, within-sector effects were more generally important than reallocation effects in both Asia and Latin America. This held for Argentina, Brazil, Chile, Colombia and Peru, for example, including in the more recent years evaluated by Ocampo, Rada and Taylor (2009) and McMillan and

Rodrik (2011). For Mexico, while the reallocation effect accounted for all of aggregate labour productivity growth for the 1988–2005 period, the effect was positive. Indeed, for Brazil and Mexico, the two largest economies in the Latin America and the Caribbean region, the reallocation effect was positive for every sub-period between 1950 and 2005.

## Method and data

In decomposing labour productivity growth, we follow Pieper (2000) and Ocampo, Rada and Taylor (2009). Aggregate labour productivity is defined as total value-added over total employment, or  $q = X/L$ , and sectoral labour productivity is correspondingly defined as  $q_i = x_i/l_i$ . Aggregate labour productivity can be expressed as:

$$q = X/L = \sum x_i / \sum l_i \quad 4.1$$

Taking first-order differences with respect to time ( $t = 0$ ), labour productivity growth can be expressed as:

$$\xi = \sum [\theta_{i0} (g_i - n_i) + (\theta_{i0} - (q_1/q_0) \lambda_{i0}) n_i] \quad 4.2$$

where:

$$\begin{aligned} \xi &= (q_1 - q_0) / q_0 \\ n_i &= (l_{i1} - l_{i0}) / l_{i0} \\ g_i &= (x_{i1} - x_{i0}) / x_{i0} \\ \theta_{i0} &= x_{i0} / X_0 \\ \lambda_{i0} &= l_{i0} / L_0 \end{aligned}$$

Labour productivity growth can be decomposed into within-sector versus reallocation effects based on the reallocation of either employment or output. The decomposition is based on the reallocation of employment, consistent with the literature surveyed already and our interest in the changing sectoral composition of employment.

The *within-sector effect* on labour productivity growth is represented by the left-hand bracketed term in equation 4.2, that is:

$$\xi_w = \sum [\theta_{i0} (g_i - n_i)] \quad 4.3$$

In words, the within-sector effect is the difference between sectoral value-added growth and employment growth weighted by the output

share of the sector, holding constant employment reallocation among sectors. In this sense, positive within-sector effects result when sectoral value-added grows faster than sectoral employment.

The interaction term is represented by  $q_1/q_0$ , the result of first-order differencing in discrete time steps, while the interaction effect is the difference between aggregate labour productivity growth and the sum of within-sector and reallocation effects.<sup>11</sup> Leaving the interaction term aside, the *reallocation effect* on labour productivity growth is represented by the right-hand bracketed term in equation 4.2, that is:

$$\xi_r = \Sigma[(\theta_{i0} - \lambda_{i0})n_i] \quad 4.4$$

The reallocation effect is the difference between sectoral output and employment shares multiplied by sectoral employment growth, holding constant labour productivity growth within sectors. Positive reallocation effects result when sectoral employment grows in sectors for which the difference between sectoral output and employment shares is positive, that is, in sectors with above average labour productivity.<sup>12</sup>

In sum, each sector's contribution to aggregate labour productivity growth is its labour productivity growth weighted by its relative output – the within-sector effect – plus its employment growth weighted by its relative labour productivity – the reallocation effect. In this sense, relatively larger sectors will tend to contribute more to aggregate labour productivity growth through the within-sector effect. Moreover, the larger the difference in labour productivity among sectors, the larger the potential increases in aggregate labour productivity through reallocation effects, provided employment shifts from less to more productive sectors.

We also address sectoral contributions to aggregate employment growth, defined as each sector's employment growth weighted by its share of employment. Aggregate employment growth can be expressed correspondingly as:

$$\phi = (L_1 - L_0)/L_0 = \Sigma n_i \lambda_{i0} \quad 4.5$$

Note that labour productivity is defined here in terms of employment rather than more precisely in terms of working hours, as data for the latter are of limited availability. Nor is total factor productivity (TFP) addressed. Here too there are data constraints, particularly for developing countries, but more fundamental are concerns about whether TFP is a meaningful notion in this context.<sup>13</sup>

One important limitation of the analysis is that while it enables the comparison of the structural characteristics of faster and slower growing countries, it does not provide estimates of what growth would be nor of the sustainability of growth in the face of counterfactual structural characteristics. For example, though we typically find low contributions from agriculture to aggregate labour productivity, for poorer developing countries there are reasons to believe that growth would be higher and more sustainable if contributions from agriculture were higher (Timmer 1988). As another example, it may be that manufacturing-led growth is more sustainable than services-led growth, but the analysis does not directly address such dynamics.

Timmer and de Vries (2009) further argue that the method embodied in the equations given here is limited in that it assumes that shifts of workers among sectors do not affect the labour productivity of these sectors and, related, that it assumes constant returns to scale. We do not necessarily regard these as limitations, however, for these assumptions are consistent with the theory that motivates the analysis in this chapter. In particular, Kaldor viewed reallocation effects resulting solely from productivity differences among sectors as worthy of consideration in their own right, if only to illustrate their lesser importance compared to the effects *induced* by reallocation. For Kaldor, these induced effects include static and dynamic economies of scale within sectors and macro economies of scale across sectors, as well as increased labour productivity in agriculture resulting from the reduction of surplus labour. These effects are difficult if not impossible to measure separately from within-sector effects *not* induced by reallocation. For both theoretical and practical reasons, then, we view the method as appropriate.

Timmer and de Vries also point out that the measurement of value-added in services is notoriously problematic and indeed was the subject of a conference and edited volume in the early-1990s (Griliches 1992) as well as of more recent papers (e.g. Foley 2011; Li and Prescott 2009). In short, value-added for many service activities (e.g. financial, business, education and government services) is not estimated directly but rather imputed either from an index of inputs or from income, creating systematic and potentially large measurement errors. To give a flavour of these problems and their implications for measuring productivity growth, Griliches writes that 'a number of service industries series are deflated by makeshift deflators, and real output is assumed to grow proportionately to some measure of input and to lead to no observed productivity growth by definition' (1992: 6–7). In this sense, service sector results need to be interpreted with special caution.

The ILO's LABORSTA database is the source of employment data and United Nations Statistics Division the source of value-added data for 75 of the 81 countries in this sample. Employment and value-added data for six additional countries (Argentina, Colombia, Peru, India, Singapore and Taiwan (China)) are from the Groningen Growth and Development Center (GGDC) (Timmer and de Vries 2009). Valued-added is measured in national currencies at constant 1990 prices. Both the ILO's and GGDC's employment data include self-employment, but do not capture all of informal employment (ILO 2011; Timmer and de Vries 2009). One implication is that what appears in the data as a decline in employment may actually reflect a movement from formal to informal employment, with attendant implications for the measurement of labour productivity growth.

Employment and value-added data are matched at the most detailed level possible, resulting in the following seven-sector breakdown:

- (1) agriculture, hunting, forestry, fishing;
- (2) mining, utilities;
- (3) manufacturing;
- (4) construction;
- (5) wholesale and retail trade, restaurants, hotels;
- (6) transport, storage, communication; and
- (7) other services.

This sectoral breakdown is broadly similar to that of prior studies, facilitating comparison among them. To further facilitate comparison, results for industry as a whole are also presented – the sum of sectors 2 through 4 – and for services as a whole – the sum of sectors 5 through 7. It should be noted for all studies, though, that the measure of within-sector versus reallocation effects depends on the level of data aggregation. That is, what are identified as within-sector effects at higher levels of aggregation may be identified as reallocation effects at lower levels of aggregation.<sup>14</sup>

The main reservation with this sectoral breakdown is the heterogeneity of other services, which groups three broad types of service activities: (1) finance, insurance, real estate and business services (FIRE); (2) community, social and personal services; and (3) activities not adequately defined, as per the UN Statistics Division data on value-added. That is, 'other services' combines some of the most advanced services, for example, FIRE, with some of the least, for example, domestic service. Leaving aside the measurement issues noted already, the expectation would be for this sector's contribution to aggregate labour productivity



growth to be driven mainly by FIRE on the assumption that these activities have greater dynamic potential, and these results are interpreted accordingly. It is more difficult, however, to make an analogous assumption regarding this sector's contribution to aggregate employment growth, given the persisting importance of traditional services as a source of employment growth.

In order to get a sense of change over time, this chapter follows Pieper (2000) in splitting the data into two periods, 1984–1998 and 1999–2008. The breakpoint was chosen as it roughly divides the data into periods up to the Asian crisis and up to the post-2007 crisis, while allowing a fair number of observations for each period. It turns out that the main results are quite similar for the two periods and so are not particularly sensitive to the breakpoint. The full range of years is not available for all countries, as detailed in the Appendix on Data Notes. Regional country groups follow the ILO's *Global Employment Trends* report, with the exception that this developed countries group is limited to the EU-15 and Malta rather than the EU at large (ILO 2012). Note that in discussing regional averages, the countries of Central and South-East Europe and the Commonwealth of Independent States (CIS) are included in the sample of all countries but excluded from samples of developed and developing countries. In this chapter's discussion of results for developing countries, the focus is on Latin America and the Caribbean and Asia, as there are data for only three countries in the Middle East-North Africa (MENA) and only two in sub-Saharan Africa.

## Results

### Jobless growth and the labour productivity–employment relationship

Results of our decomposition analysis are usefully viewed in the context of patterns of aggregate labour productivity, output and employment growth. These are shown in Table 4.2 for the 1984–1998 and 1999–2008 periods as well as differences between the two periods based on unweighted and GDP-weighted regional averages, with the discussion focusing on the latter.<sup>15</sup> Here it is worth bearing in mind that, by definition, employment growth equals output growth minus labour productivity growth. In a strict sense, therefore, jobless growth occurs when output growth is equal to or lower than labour productivity growth, but a looser definition is used here to apply to cases where employment growth is weak relative to output growth and also lower than the growth of the working age population and labour force.

Table 4.2 Aggregate labour productivity, output and employment growth by regional average (%)

Unweighted average	Productivity growth			Output growth			Employment growth		
	1984-1998	1999-2008	Δ	1984-1998	1999-2008	Δ	1984-1998	1999-2008	Δ
All countries	1.6	2.5	0.9	3.0	4.2	1.2	1.3	1.6	0.3
Developed countries	1.8	1.1	-0.7	2.9	2.7	-0.2	1.1	1.6	0.5
C & SE Europe, CIS	0.4	5.0	4.6	-0.3	5.8	6.1	-0.7	0.8	1.5
Developing countries	2.0	2.3	0.3	4.3	4.4	0.1	2.3	2.1	-0.2
Asia	3.4	3.8	0.5	5.5	5.7	0.2	2.1	1.8	-0.2
LAC	0.6	1.2	0.5	3.2	3.5	0.3	2.6	2.4	-0.3
MENA	n.a.	2.2	n.a.	n.a.	4.5	n.a.	n.a.	2.2	n.a.
SSA	n.a.	3.0	n.a.	n.a.	4.1	n.a.	n.a.	1.2	n.a.
<b>GDP-weighted average</b>	<b>Productivity growth</b>			<b>Output growth</b>			<b>Employment growth</b>		
	1984-1998	1999-2008	Δ	1984-1998	1999-2008	Δ	1984-1998	1999-2008	Δ
All countries	2.0	2.0	0.0	3.0	3.1	0.1	1.0	1.1	0.1
Developed countries	1.7	1.3	-0.5	2.7	2.3	-0.4	1.0	1.0	0.0
C & SE Europe, CIS	-0.4	5.1	5.5	-1.2	6.0	7.2	-0.8	0.9	1.7
Developing countries	4.3	3.7	-0.6	6.3	5.4	-0.9	1.9	1.7	-0.2
Asia	5.0	5.3	0.3	7.0	6.7	-0.3	1.9	1.3	-0.6
LAC	1.3	0.8	-0.5	3.4	3.1	-0.2	2.2	2.3	0.2
MENA	n.a.	1.2	n.a.	n.a.	3.6	n.a.	n.a.	2.4	n.a.
SSA	n.a.	2.6	n.a.	n.a.	4.1	n.a.	n.a.	1.6	n.a.

For both developed and developing countries, labour productivity and output growth were somewhat lower in the more recent period, though employment growth changed little. Reflecting their vast restructuring, the countries of Central and South-East Europe and the CIS had much higher rates of productivity and output growth in the more recent period (which explains why these rates held steady for the sample of all countries in spite of declining in developed and developing countries) as well as higher rates of employment growth. Between the two main developing regions, output growth was a good deal higher in Asia than in Latin America and the Caribbean but the difference in labour productivity growth was greater yet, resulting in lower employment growth in Asia than in Latin America and the Caribbean. These differences between Asia and Latin America and the Caribbean held for both periods, and also worth noting is the lower employment growth in Asia during the more recent period.<sup>16</sup>

These patterns suggest the possibility of trade-off between labour productivity and employment growth, and indeed this is confirmed by sizeable negative correlations between these measures for developing – but not developed – countries. This held for both periods, as shown in Table 4.3, which shows correlation coefficients (Pearson) among the three aggregate measures.<sup>17</sup> Consistent with this, there were for both periods strong positive correlations between output and employment growth for developed countries and only weak correlations for developing countries, suggesting that jobless growth is more of a problem for developing than developed countries.

‘Socially sustainable’ employment growth is defined by Pieper as equal to or greater than 3 per cent, the estimated growth rate of the labour force in developing countries (2000: 90). We evaluate this by looking at the difference between a country’s employment growth with the growth of its working age (15–64) population and labour force. These differences are shown at the country level in Table 4.4, with negative values, marked by boxes, indicating that employment growth was lower than working age population or labour force growth. In Pieper’s parlance, these negative gaps represent situations that are not ‘socially sustainable’ (2000).

Worth noting is that even though developed countries grew more slowly in the more recent period, there were fewer negative gaps in this than the earlier period. Also striking is the comparison of Asia and Latin America and the Caribbean, with a higher share of negative gaps for the former than the latter. Looked at this way, the phenomenon of jobless growth was more a characteristic of dynamic Asia than Latin America and the Caribbean. As regards the gap with labour force growth, fast-growing

Table 4.3 Correlation coefficients (Pearson) between aggregate labour productivity, output and employment growth

Developed countries	1984–1998			1999–2008		
	Productivity	Output	Employment	Productivity	Output	Employment
Productivity	1.00	0.48	-0.12	1.00	0.60	-0.05
Output		1.00	0.81	Productivity	1.00	0.77
Employment			1.00	Output	1.00	1.00
				Employment		
Developing countries	1984–1998			1999–2008		
	Productivity	Output	Employment	Productivity	Output	Employment
Productivity	1.00	0.88	-0.36	1.00	0.88	-0.40
Output		1.00	0.12	Productivity	1.00	0.08
Employment			1.00	Output	1.00	1.00
				Employment		

Table 4.4 Aggregate employment, working age population and labour force growth by country (%)

	Employment growth		Pop. growth, 15-64		Difference		Labour force growth		Difference	
	84-98	99-08	84-98	99-08	84-98	99-08	84-98	99-08	84-98	99-08
Australia	2.0	2.3	1.4	1.5	0.6	0.8	1.9	2.0	0.2	0.3
Austria	0.7	1.0	0.4	0.5	0.3	0.5	1.0	1.1	-0.3	-0.1
Belgium	0.7	1.3	0.1	0.5	0.6	0.8	0.5	1.2	0.2	0.1
Canada	1.4	2.0	1.1	1.2	0.3	0.8	1.3	1.7	0.0	0.3
Denmark	0.6	0.5	0.3	0.2	0.3	0.3	0.3	0.4	0.3	0.1
Finland	-0.6	1.3	0.3	0.3	-0.8	1.0	-0.1	0.7	-0.5	0.5
France	0.3	1.1	0.4	0.6	-0.1	0.4	0.4	1.0	-0.1	0.1
Germany	-0.7	0.8	0.3	-0.3	-1.0	1.1	0.8	0.5	-1.5	0.3
Greece	0.9	1.3	1.0	0.3	-0.1	1.0	1.3	0.8	-0.4	0.5
Iceland	1.1	2.0	1.1	1.9	0.0	0.1	1.3	1.9	-0.2	0.1
Ireland	2.2	3.5	1.1	2.1	1.1	1.4	1.5	3.2	0.8	0.3
Israel	3.3	2.6	3.0	2.1	0.3	0.5	3.5	3.0	-0.2	-0.4
Italy	0.3	1.3	0.1	0.2	0.1	1.1	0.1	0.9	0.2	0.4
Japan	0.9	-0.3	0.5	-0.4	0.4	0.2	1.0	-0.2	-0.1	-0.1
Luxembourg	3.1	3.7	0.8	1.5	2.3	2.2	1.0	2.2	2.1	1.5
Malta	n.a.	1.3	0.8	1.1	n.a.	0.2	1.0	1.7	n.a.	-0.4
Netherlands	2.6	1.2	0.6	0.4	2.0	0.9	1.5	1.4	1.1	-0.1
New Zealand	1.0	2.4	1.2	1.4	-0.2	1.0	1.1	2.0	-0.2	0.4
Norway	0.8	1.2	0.6	1.0	0.3	0.2	0.8	1.0	0.0	0.2
Portugal	1.4	0.7	0.5	0.4	0.9	0.3	0.7	1.0	0.8	-0.3

Developed

Spain	1.9	3.7	0.7	1.4	1.2	2.3	1.1	2.9	0.8	0.8
Sweden	-0.5	1.5	0.4	0.7	-0.8	0.8	0.0	1.1	-0.5	0.4
Switzerland	0.8	1.2	0.6	0.8	0.2	0.4	0.7	1.0	0.1	0.2
United Kingdom	0.7	0.8	0.2	0.7	0.5	0.1	0.5	0.9	0.2	-0.1
United States	1.6	1.0	1.0	1.2	0.6	-0.1	1.4	1.0	0.2	0.1
Azerbaijan	0.1	1.0	1.3	1.9	-1.2	-0.9	1.2	2.1	-1.0	-1.1
Bulgaria	-2.8	0.8	-0.5	-0.5	-2.3	1.3	-1.5	0.0	-1.3	0.8
Croatia	n.a.	0.6	-0.3	-0.2	n.a.	0.8	-0.4	-0.1	n.a.	0.7
Cyprus	2.7	4.0	1.4	1.8	1.4	2.2	1.6	2.4	1.1	1.7
Czech Republic	0.0	0.3	0.5	0.4	-0.5	-0.1	0.4	0.2	-0.4	0.1
Estonia	-3.7	0.8	-0.7	-0.1	-3.1	0.9	-1.6	0.4	-2.1	0.4
Georgia	n.a.	-0.1	-0.6	-0.7	n.a.	0.6	-0.5	-0.7	n.a.	0.6
Hungary	-1.6	0.5	0.0	-0.1	-1.6	0.6	-1.2	0.5	-0.3	0.0
Kazakhstan	n.a.	2.3	0.0	1.1	n.a.	1.2	0.1	1.2	n.a.	1.1
Kyrgyzstan	-0.2	2.5	1.5	2.0	-1.8	0.5	1.6	2.3	-1.9	0.2
Latvia	n.a.	1.4	-0.6	-0.2	n.a.	1.6	-1.7	0.6	n.a.	0.8
Lithuania	n.a.	0.2	0.0	-0.1	n.a.	0.4	-0.5	-0.6	n.a.	0.8
Moldova, Rep. of	n.a.	-1.9	0.1	-0.6	n.a.	-1.3	-0.5	-2.7	n.a.	0.7
Poland	-1.0	0.0	0.6	0.4	-1.6	-0.5	-0.3	0.2	-0.6	-0.3
Romania	-0.4	-1.4	0.2	-0.2	-0.6	-1.2	0.3	-1.7	-0.7	0.3
Russian Fed.	-2.2	2.0	0.3	0.2	-2.5	1.8	-0.6	0.6	-1.6	1.3
Slovakia	n.a.	1.0	0.7	0.7	n.a.	0.4	0.0	0.7	n.a.	0.4
Turkey	1.3	0.1	2.6	1.9	-1.3	-1.8	2.1	1.0	-0.7	-0.9

(continued)

Table 4.4 Continued

	Employment growth	Pop. growth, 15-64	Difference	Labour force growth	Difference
China	1.0	1.7	-0.6	1.7	-0.7
Hong Kong (China)	1.6	1.7	-0.1	1.3	0.3
India	2.5	2.3	0.2	2.1	0.4
Indonesia	2.0	2.4	-0.4	2.9	-0.8
Korea, Rep. of	2.4	1.7	0.7	2.4	0.0
Malaysia	3.6	3.2	0.3	3.5	0.0
Mongolia	1.1	2.3	-1.2	2.4	-1.3
Myanmar	1.5	2.5	-0.9	2.4	-0.9
Pakistan	2.3	2.8	-0.5	2.7	-0.4
Philippines	2.4	2.8	-0.4	3.0	-0.6
Singapore	3.1	2.7	0.4	3.0	0.1
Taiwan (China)	1.7	1.0	0.7	n.a.	n.a.
Thailand	1.6	2.1	-0.5	1.6	0.0
Viet Nam	n.a.	2.7	n.a.	2.5	n.a.
Argentina	0.9	1.5	-0.6	1.7	-0.8
Bahamas	3.5	1.7	1.0	2.8	0.7
Barbados	1.1	0.7	0.4	1.1	0.0
Bolivia	1.5	2.4	-1.0	2.7	-1.2
Brazil	n.a.	2.4	n.a.	3.0	n.a.
Chile	3.6	1.8	1.7	2.7	0.9

Asia

LAC

Colombia	2.7	3.1	2.5	2.1	0.2	1.0	3.2	2.7	-0.5	0.4
Costa Rica	3.2	4.3	2.9	2.8	0.3	1.6	4.0	3.1	-0.8	1.2
Cuba	n.a.	1.4	1.1	0.4	n.a.	1.1	1.4	0.7	n.a.	0.7
Dominican Republic	n.a.	2.3	2.4	2.0	n.a.	0.3	2.7	2.2	n.a.	0.1
El Salvador	n.a.	1.3	1.9	1.0	n.a.	0.3	2.1	1.0	n.a.	0.3
Jamaica	1.0	2.1	1.3	1.0	-0.3	1.1	0.8	0.5	0.2	1.6
Mexico	n.a.	1.7	2.8	1.7	n.a.	0.0	3.4	2.0	n.a.	-0.3
Nicaragua	4.3	4.5	2.8	2.4	1.4	2.1	3.1	2.9	1.2	1.6
Panama	3.5	3.6	2.7	2.1	0.8	1.5	3.6	2.7	-0.1	0.9
Peru	2.0	1.1	2.6	1.9	-0.6	-0.8	3.0	2.3	-1.0	-1.2
Puerto Rico	2.8	0.6	1.3	0.6	1.6	0.0	2.4	0.6	0.5	0.0
Trinidad and Tobago	2.6	2.2	1.3	1.4	1.3	0.9	1.5	1.9	1.1	0.3
Venezuela	4.3	3.2	2.8	2.4	1.5	0.8	3.7	3.0	0.6	0.2
Egypt	0.9	3.3	2.7	2.8	-1.7	0.5	2.5	2.5	-1.6	0.8
Morocco	n.a.	1.1	2.6	2.1	n.a.	-1.0	2.8	1.9	n.a.	-0.7
Saudi Arabia	n.a.	2.3	3.9	3.4	n.a.	-1.1	4.3	1.4	n.a.	0.9
Mauritius	n.a.	0.8	1.5	1.2	n.a.	-0.4	1.9	1.1	n.a.	-0.3
South Africa	n.a.	1.6	3.0	2.0	n.a.	-0.4	3.7	2.8	n.a.	-1.2

Source: Data from the World Development Indicators, available at: <http://data.worldbank.org/data-catalog/world-development-indicators> (accessed April 2011) (with the exception of the population data for Taiwan (China), which comes from the GGDC).



India had the largest negative gaps in Asia, and negative gaps of similar magnitude are also seen in Peru, Morocco and South Africa.

### **Sectoral drivers of aggregate labour productivity and employment growth**

Based on decomposition analysis, this section turns to the question of which sectors have driven aggregate labour productivity and employment growth and how this differed among regions and over time. This is first addressed by looking at the covariance (expressed in percentages) between sectoral contributions to aggregate labour productivity growth – based on the sectoral components of equation 4.2 combining within-sector, reallocation and interaction effects – and aggregate labour productivity growth itself. These are shown in Table 4.5 for the 1984–1998 and 1999–2008 periods for the samples of developed and developing countries. Below results for the seven sectors are results for industry as a whole – summing results from mining, utilities, manufacturing and construction – and services as a whole – summing results from the three service sectors. The rows for industry and services are in bold, as is the row for agriculture, hunting, forestry and fishing, and together the three rows in bold represent the aggregate economy.

For developed countries at the seven-sector level, manufacturing accounts for more of the variance in aggregate labour productivity

*Table 4.5* Covariance coefficients between sectoral contributions to aggregate labour productivity growth and aggregate labour productivity growth (%)

	Developed		Developing	
	1984–1998	1999–2008	1984–1998	1999–2008
<b>Agriculture, hunting, forestry, fishing (ISIC A-B)</b>	-1.7	6.2	10.7	10.0
Mining, utilities (ISIC C,E)	5.1	5.5	0.0	6.3
Manufacturing (ISIC D)	46.3	44.2	37.4	28.1
Construction (ISIC F)	0.7	1.4	5.8	3.2
Wholesale & retail trade, restaurants, hotels (ISIC G-H)	8.0	27.8	11.6	14.5
Transport, storage, communication (ISIC I)	9.7	21.6	4.0	11.6
Other services (ISIC J-P)	31.8	-6.6	32.1	27.4
<b>Industry (ISIC C-F)</b>	<b>52.2</b>	<b>51.0</b>	<b>43.2</b>	<b>37.7</b>
<b>Services (ISIC G-P)</b>	<b>49.5</b>	<b>42.8</b>	<b>47.7</b>	<b>53.5</b>

*Note:* Totals for developing countries do not sum exactly to 100 because data on mining and utilities are missing for China.

growth than any other sector (around 45 per cent for both periods). For developing countries, manufacturing also accounts for more than any other sector, but other services account for nearly as much, especially in the more recent period. Agriculture accounts for about 10 per cent of the variance in aggregate labour productivity in both periods, more than either mining and utilities or construction. For developed countries at the three-sector level, industry accounts for somewhat more of the variance in aggregate labour productivity growth than services, especially in the more recent period (51 compared to 43 per cent). For developing countries, in contrast, services account for somewhat more of the variance in aggregate labour productivity growth in the earlier period (48 compared to 43 per cent for industry) and a good deal more in the more recent period (54 compared to 38 per cent for industry). Looked at this way, it can be seen that services are just as important as industry in accounting for aggregate labour productivity growth in developing countries. As described in the method and data section, it is worth noting both these results and the country-level results discussed in this section are partly determined by the relative size of sectors, with larger sectors carrying more weight in driving aggregate labour.

These issues are addressed at the country level by comparing each sector's contribution to aggregate labour productivity growth based on the sectoral components of equation 4.2 – as well as each sector's contribution to aggregate employment growth – based on the sectoral components of equation 4.5. These are shown for countries in the two main developing regions in Table 4.6 for Asia and in Table 4.7 for Latin America and the Caribbean for the 1984–1998 and 1999–2008 periods. Following Pieper (2000), sectoral values from these equations are expressed as percentages by dividing by the absolute value of aggregate labour productivity or employment growth and multiplying by 100, based on period averages. Because period averages for aggregate labour productivity and employment growth are very small values for some countries, percentages are sometimes greater than 100. Below results for the seven sectors are results for industry as a whole and services as a whole, and together with agriculture, hunting, forestry and fishing the three rows in bold represent the aggregate economy.

It has been noted that Timmer and de Vries (2009) find that services made a particularly strong contribution to labour productivity growth in Hong Kong (China), India, Singapore and Taiwan (China), and Ghani and Kharas (2010) emphasize the importance of services as a driver of development in India, comparable to the role of manufacturing in China. These views are in line with the country-level results, shown in Table 4.6 for Asia and Table 4.7 for Latin America and the Caribbean



Wholesale and retail trade, restaurants, hotels (ISIC G-H)	33.5	65.2	12.6	40.8	40.7	21.6	15.3	3.9	19.2	22.5	18.7	38.1	29.8	n.a.
Transport, storage, communication (ISIC I)	8.9	24.7	4.7	13.6	8.6	5.6	5.8	-1.7	8.1	11.9	13.7	5.5	5.4	n.a.
Other services (ISIC J-P)	12.2	80.8	12.0	25.9	49.5	29.8	-82.1	3.7	30.5	32.1	47.1	56.2	31.0	n.a.
<b>Industry (ISIC C-F)</b>	<b>16.6</b>	<b>-67.6</b>	<b>26.4</b>	<b>33.2</b>	<b>26.0</b>	<b>36.0</b>	<b>-5.1</b>	<b>10.1</b>	<b>11.6</b>	<b>21.6</b>	<b>21.7</b>	<b>22.8</b>	<b>50.0</b>	<b>n.a.</b>
<b>Services (ISIC G-P)</b>	<b>54.6</b>	<b>170.7</b>	<b>29.3</b>	<b>80.3</b>	<b>98.8</b>	<b>57.0</b>	<b>-61.0</b>	<b>5.9</b>	<b>57.8</b>	<b>66.5</b>	<b>79.5</b>	<b>99.8</b>	<b>66.2</b>	<b>n.a.</b>
1999-2008														
<b>Average contribution to labour productivity growth</b>														
<b>Agriculture, hunting, forestry, fishing (ISIC A-B)</b>	<b>10.4</b>	<b>-0.1</b>	<b>0.6</b>	<b>8.4</b>	<b>12.9</b>	<b>1.9</b>	<b>4.2</b>	<b>n.a.</b>	<b>-10.4</b>	<b>14.7</b>	<b>-0.4</b>	<b>11.6</b>	<b>11.4</b>	<b>21.2</b>
Mining, utilities (ISIC C, E)	n.a.	3.0	3.9	1.0	3.7	7.8	14.8	n.a.	3.4	7.1	2.7	1.7	12.3	20.6
Manufacturing (ISIC D)	58.9	14.4	22.1	38.2	71.6	58.4	15.1	n.a.	30.8	32.7	53.8	38.9	69.3	27.5
Construction (ISIC F)	3.3	-0.9	7.0	2.7	-1.6	-7.1	-6.1	n.a.	-2.2	4.6	-8.2	-0.2	-6.6	-1.6
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	7.3	43.6	19.7	14.2	13.0	5.6	17.6	n.a.	15.2	10.7	28.5	13.3	-15.6	17.7
Transport, storage, communication (ISIC I)	6.9	15.5	20.0	13.8	11.2	10.1	37.7	n.a.	9.3	9.5	15.8	16.7	18.4	2.5
Other services (ISIC J-P)	13.3	24.4	26.7	21.8	-10.9	23.3	16.7	n.a.	54.0	20.7	7.8	18.1	10.8	12.2
<b>Industry (ISIC C-F)</b>	<b>62.2</b>	<b>16.5</b>	<b>33.0</b>	<b>41.9</b>	<b>73.7</b>	<b>59.1</b>	<b>23.8</b>	<b>n.a.</b>	<b>32.0</b>	<b>44.4</b>	<b>48.3</b>	<b>40.4</b>	<b>75.0</b>	<b>46.5</b>
<b>Services (ISIC G-P)</b>	<b>27.5</b>	<b>83.5</b>	<b>66.4</b>	<b>49.8</b>	<b>13.3</b>	<b>39.0</b>	<b>72.0</b>	<b>n.a.</b>	<b>78.5</b>	<b>40.9</b>	<b>52.1</b>	<b>48.1</b>	<b>13.6</b>	<b>32.4</b>
<b>Average contribution to employment growth</b>														
<b>Agriculture, hunting, forestry, fishing (ISIC A-B)</b>	<b>-29.3</b>	<b>-0.3</b>	<b>52.1</b>	<b>13.3</b>	<b>-22.1</b>	<b>8.5</b>	<b>-6.1</b>	<b>n.a.</b>	<b>35.2</b>	<b>16.8</b>	<b>0.5</b>	<b>-35.4</b>	<b>-8.9</b>	<b>11.8</b>
Mining, utilities (ISIC C, E)	n.a.	-0.9	2.6	3.0	0.8	1.3	13.9	n.a.	0.6	1.0	-0.1	-0.9	-1.2	3.4
Manufacturing (ISIC D)	-6.6	-48.1	-10.0	18.4	3.1	0.3	-3.7	n.a.	23.3	1.6	19.1	17.4	19.5	31.5

(continued)

Table 4.6 Continued

Asia and the Pacific	China	Hong Kong (China)	India	Indonesia	Korea, Rep. of	Malaysia	Mongolia	Myanmar	Pakistan	Philippines	Singapore	Taiwan (China)	Thailand	Viet Nam
Construction (ISIC F)	22.3	-9.8	6.8	13.0	6.4	10.7	14.7	n.a.	6.2	4.4	-5.7	-11.9	13.0	21.9
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	12.8	48.8	31.0	29.9	3.7	31.5	46.0	n.a.	17.1	33.4	24.5	47.8	63.8	9.2
Transport, storage, communication (ISIC I)	3.3	7.2	3.1	13.8	18.8	5.4	5.1	n.a.	5.6	11.6	11.0	0.4	3.0	4.6
Other services (ISIC J-P)	97.5	103.0	14.4	8.5	89.3	42.2	30.1	n.a.	12.0	31.2	50.7	82.6	10.8	17.7
<b>Industry (ISIC C-F)</b>	<b>15.7</b>	<b>-58.8</b>	<b>-0.6</b>	<b>34.4</b>	<b>10.3</b>	<b>12.3</b>	<b>24.9</b>	<b>n.a.</b>	<b>30.1</b>	<b>7.0</b>	<b>13.3</b>	<b>4.6</b>	<b>31.3</b>	<b>56.8</b>
<b>Services (ISIC G-P)</b>	<b>113.6</b>	<b>159.0</b>	<b>48.5</b>	<b>52.2</b>	<b>111.8</b>	<b>79.1</b>	<b>81.2</b>	<b>n.a.</b>	<b>34.7</b>	<b>76.2</b>	<b>86.2</b>	<b>130.8</b>	<b>77.6</b>	<b>31.5</b>

Note: When period averages of aggregate labour productivity and employment growth are very small, % can be greater than 100.

Table 4.7 Industry-level contributions to aggregate labour productivity and employment growth for Latin American and Caribbean countries (%)

	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Cuba	Dominican Republic	El Salvador	Jamaica	Mexico	Nicaragua	Panama	Peru	Puerto Rico	Trinidad and Tobago	Venezuela	
1984-1998																				
Average contribution to total productivity growth	12.9	113.5	15.6	-101.7	n.a.	-2.3	37.1	33.8	n.a.	n.a.	n.a.	1,284.9	n.a.	-235.3	17.2	-33.7	4.6	87.2	6.5	
Agriculture, hunting, forestry, fishing (ISIC A-B)																				
Mining, utilities (ISIC C, E)	10.5	221.7	20.5	253.7	n.a.	29.6	38.3	8.0	n.a.	n.a.	n.a.	215.5	n.a.	5.2	14.7	36.2	7.1	-1.3	188.7	
Manufacturing (ISIC D)	39.0	40.0	17.9	253.7	n.a.	12.4	16.6	44.0	n.a.	n.a.	n.a.	70.0	n.a.	148.4	-18.1	51.7	73.5	152.9	30.7	
Construction (ISIC F)	14.2	372.4	-46.8	-22.9	n.a.	3.5	-7.0	-3.6	n.a.	n.a.	n.a.	-710.6	n.a.	-40.2	-22.8	68.4	-4.6	-32.2	-28.6	
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	12.3	300.0	147.5	133.5	n.a.	15.2	-44.4	6.3	n.a.	n.a.	n.a.	-469.3	n.a.	3.3	-50.9	-25.3	10.4	-25.2	-168.9	

(continued)



Construction (ISIC F)	-3.3	12.5	38.8	1.0	n.a.	15.6	7.2	7.5	n.a.	n.a.	n.a.	36.0	n.a.	8.1	9.0	0.9	9.6	16.6	12.8
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	33.7	9.4	-9.4	17.2	n.a.	17.2	36.3	28.5	n.a.	n.a.	n.a.	60.6	n.a.	17.5	34.0	36.4	21.9	20.7	32.2
Transport, storage, communication (ISIC I)	20.6	10.2	0.7	27.9	n.a.	10.2	7.3	9.1	n.a.	n.a.	n.a.	39.2	n.a.	1.6	5.5	7.2	3.9	5.6	4.7
Other services (ISIC J-P)	89.6	68.9	103.1	38.8	n.a.	22.2	32.5	41.9	n.a.	n.a.	n.a.	80.5	n.a.	18.9	38.7	25.8	60.3	53.0	32.3
Industry (ISIC C-F)	-35.2	14.2	26.8	-32.6	n.a.	34.9	21.9	20.5	n.a.	n.a.	n.a.	6.5	n.a.	17.5	21.2	7.6	16.7	28.8	28.1
Services (ISIC G-P)	143.9	88.5	94.4	83.9	n.a.	49.6	76.1	79.5	n.a.	n.a.	n.a.	180.3	n.a.	38.0	78.2	69.4	86.1	79.3	69.2
1999-2008																			
Average contribution to total productivity growth																			
Agriculture, hunting, forestry, fishing (ISIC A-B)	33.2	15.5	10.3	-219.6	45.2	23.3	-32.5	39.2	3.3	10.1	58.9	-39.2	44.7	-1,726.9	12.0	0.6	10.2	5.1	13.8
Mining, utilities (ISIC C, E)	24.0	-0.7	8.1	145.4	21.0	32.2	16.3	4.8	2.8	1.3	0.8	9.4	16.9	-71.0	15.0	23.5	-12.2	36.0	77.5

(continued)



Table 4.7 Continued

Latin America and the Caribbean	Argentina	Bahamas	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Cuba	Dominican Republic	El Salvador	Jamaica	Mexico	Nicaragua	Panama	Peru	Puerto Rico	Trinidad and Tobago	Venezuela
Manufacturing (ISIC D)	27.5	74.4	55.4	81.6	24.5	30.8	27.0	93.5	5.5	39.7	45.8	5.0	27.0	2,508.9	-7.1	29.5	98.9	48.4	62.0
Construction (ISIC F)	-25.2	-41.0	44.4	13.0	8.4	-2.8	1.7	-16.1	5.3	-1.0	-6.0	-20.5	-26.9	-1,236.6	-14.7	-0.6	-5.3	-2.2	-79.7
Wholesale and retail trade, restaurants, hotels	-72.9	40.7	22.6	145.6	-47.5	2.6	-100.6	-65.0	1.7	4.5	-15.6	-49.9	3.3	-210.1	-11.0	17.3	11.2	2.9	-35.2
(ISIC G-H)																			
Transport, storage, communication (ISIC I)	14.9	13.2	27.7	27.5	4.2	18.7	-1.8	58.7	11.0	63.0	27.1	25.9	33.0	289.7	66.1	11.3	18.7	8.6	-62.0
Other services (ISIC J-P)	-101.6	-2.1	-268.6	-93.5	44.2	-4.8	-10.0	-15.1	70.3	-17.5	-11.0	-30.7	2.1	346.1	39.7	18.4	-21.6	1.1	-76.4
Industry (ISIC C-F)	26.3	32.7	107.9	240.0	53.9	60.2	45.0	82.2	13.6	40.0	40.6	-6.1	17.0	1,201.3	-6.8	52.4	81.4	82.2	59.8
Services (ISIC G-P)	-159.6	51.8	-218.3	79.6	0.9	16.5	-112.4	-21.4	83.0	50.0	0.5	-54.7	38.4	425.7	94.8	47.0	8.3	12.6	-173.6
Average contribution to total employment growth																			
Agriculture, hunting, forestry, fishing (ISIC A-B)	-6.2	-8.4	-8.0	61.9	3.7	0.5	18.4	-3.0	1.2	3.2	-41.2	9.9	-21.4	37.4	5.5	40.8	-13.2	-13.5	4.9

Mining, utilities (ISIC C, E)	-2.3	4.3	0.2	-5.1	1.5	1.2	0.6	2.3	-1.0	2.0	1.3	3.2	0.9	-0.6	0.1	3.7	2.6	3.3	0.3
Manufacturing (ISIC D)	-4.9	4.1	-25.9	7.5	20.4	3.3	8.5	6.2	-5.4	-6.2	-0.2	-8.0	7.3	9.0	5.3	-2.5	-46.2	3.5	5.6
Construction (ISIC F)	15.6	28.1	5.7	2.6	3.7	10.0	3.4	10.5	3.3	6.9	12.0	14.1	23.7	15.5	16.6	-0.8	3.8	41.1	11.6
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	29.3	31.4	10.3	-15.6	26.7	25.0	41.6	35.9	26.1	28.6	69.9	28.7	40.3	14.9	29.5	17.9	28.8	21.5	20.7
Transport, storage, communication (ISIC I)	15.5	3.8	-0.1	8.7	5.6	9.8	8.9	9.8	15.7	9.0	6.4	11.3	5.7	4.5	9.9	6.9	-9.4	5.2	15.4
Other services (ISIC J-P)	53.0	36.7	117.8	40.0	38.3	50.1	18.4	38.3	60.1	56.5	51.8	40.8	43.5	19.3	33.1	33.9	133.6	38.9	41.5
<b>Industry (ISIC C-F)</b>	<b>8.4</b>	<b>36.5</b>	<b>-20.0</b>	<b>5.0</b>	<b>25.6</b>	<b>14.5</b>	<b>12.5</b>	<b>19.0</b>	<b>-3.1</b>	<b>2.7</b>	<b>13.1</b>	<b>9.3</b>	<b>31.9</b>	<b>23.9</b>	<b>22.0</b>	<b>0.4</b>	<b>-39.8</b>	<b>47.9</b>	<b>17.5</b>
<b>Services (ISIC G-P)</b>	<b>97.8</b>	<b>71.9</b>	<b>128.0</b>	<b>33.1</b>	<b>70.6</b>	<b>84.9</b>	<b>68.9</b>	<b>84.0</b>	<b>101.9</b>	<b>94.1</b>	<b>128.1</b>	<b>80.8</b>	<b>89.5</b>	<b>38.7</b>	<b>72.5</b>	<b>58.7</b>	<b>153.0</b>	<b>65.6</b>	<b>77.6</b>

Note: When period averages of aggregate labour productivity and employment growth are very small, % can be greater than 100.

(additional country-level results are provided in Appendix Table A.1). Industry, driven by manufacturing, made a dominant contribution to labour productivity growth in China as well as the Republic of Korea in both periods. The opposite pattern held for Hong Kong (China) and India in both periods and for Singapore and Taiwan (China) in the earlier period.

In the majority of Latin America and the Caribbean countries, industry contributed positively to labour productivity growth in both periods, though no clear pattern emerges for agriculture and services. Focusing more narrowly on what Ocampo, Rada and Taylor (2009) categorize as the semi-industrialized Latin America and the Caribbean countries of Argentina, Brazil, Chile, Colombia, Mexico and Venezuela, some commonalities do emerge for the 1999–2008 period. Services made either a small or negative contribution to labour productivity growth in these countries, with Mexico the exception. It is also found that agriculture in this more recent period contributed positively to labour productivity growth in these countries, with Colombia the exception. These findings for semi-industrialized Latin America and the Caribbean countries are broadly consistent those of Ocampo, Rada and Taylor (2009) and Timmer and de Vries (2009).

Regarding sectoral contributions to employment growth, our findings also accord with Ocampo, Rada and Taylor (2009) regarding the generally weak contribution of industry to employment growth. For the vast majority of Asian and Latin America and the Caribbean countries in both periods, we find that the contribution of services was more important than that of industry or agriculture. One notable exception is India, where the contribution of agriculture to employment growth exceeded services in both periods. Within services in both Asian and Latin America and the Caribbean countries, the contribution of transport, storage and communication to employment growth was generally much less important than that of the other two service sectors, that is, wholesale and retail trade, restaurants, hotels and other services.

The contribution of industry to employment growth, though much smaller than that of services, was positive in most Asian and Latin America and the Caribbean countries in both the 1984–1998 and 1999–2008 periods. However, there were marked differences in whether manufacturing or construction drove this result. During the more recent period in China, for example, the positive contribution of industry to employment growth was driven by construction, offsetting the negative contribution of manufacturing. Conversely in Singapore and Taiwan (China), the positive contribution of industry was driven by

manufacturing. Among Latin America and the Caribbean countries in the more recent period, construction contributed more to employment growth than manufacturing for the majority of countries, though the reverse held for the Bolivia, Brazil and Colombia.

### Within-sector versus reallocation effects and why it matters

Shown in Table 4.8 are regional averages of aggregate labour productivity growth for the 1984–1998 and 1999–2008 periods decomposed into within-sector and reallocation effects, based on equations 3 and 4 (country-level results are provided in Appendix Table A.2). These are shown as both unweighted and GDP-weighted regional averages, with the discussion focusing on the latter.

*Table 4.8* Within-sector and employment reallocation effects on aggregate labour productivity growth by regional average (%)

	1984–1998			1999–2008		
	Productivity	Within	Reallocation	Productivity	Within	Reallocation
<b>Unweighted average</b>						
All countries	1.6	1.4	0.2	2.5	2.3	0.2
Developed countries	1.8	1.7	0.2	1.1	1.2	0.0
C and SE Europe, CIS	0.4	0.6	–0.2	5.0	4.8	0.1
Developing countries	2.0	1.5	0.5	2.3	1.9	0.4
Asia	3.4	2.7	0.7	3.8	2.9	1.0
LAC	0.6	0.5	0.1	1.2	1.1	0.0
MENA	n.a.	n.a.	n.a.	2.2	2.5	–0.2
SSA	n.a.	n.a.	n.a.	3.0	2.4	0.5
	1984–1998			1999–2008		
<b>GDP-weighted average</b>						
All countries	2.0	1.8	0.2	2.0	1.7	0.2
Developed countries	1.7	1.6	0.1	1.3	1.4	–0.1
C and SE Europe, CIS	–0.4	–0.8	0.4	5.1	4.9	0.3
Developing countries	4.3	3.6	0.8	3.7	2.4	1.3
Asia	5.0	4.2	0.9	5.3	3.3	2.0
LAC	1.3	1.1	0.1	0.8	0.6	0.2
MENA	n.a.	n.a.	n.a.	1.2	1.8	–0.6
SSA	n.a.	n.a.	n.a.	2.6	1.9	0.5

Except for one region, reallocation effects are small. For example, they hover around zero for developed and Latin America and the Caribbean countries in both periods. Asia is the exceptional region, having experienced sizeable positive reallocation effects especially in the more recent period. Reallocation effects account for about one-fifth of aggregate labour productivity growth in the earlier period and just over one-third in the more recent period. At the same time, within-sector effects are more important than reallocation effects in accounting for the difference in aggregate labour productivity between Asia and other regions. For example, the differences between Asia and Latin America and the Caribbean for the earlier period are 3.1 percentage points for the within-sector effect and 0.8 percentage points for the reallocation effect; for the more recent period, the comparable figures are 2.7 and 1.8 percentage points.

The finding that within-sector effects are more important than reallocation effects in accounting for the wide gap in labour productivity growth between Asia and Latin America and the Caribbean is not anomalous. As our literature survey shows, this rather corroborates the findings of Ocampo, Rada and Taylor (2009) and Timmer and de Vries (2009). And though at odds with the conclusions of McMillan and Rodrik (2011), the authors' own results based on *weighted* regional averages show the considerably greater importance of the within-sector than 'structural change' effect in accounting for the difference between Asia and Latin America and the Caribbean, and that the reallocation effect for Latin America and the Caribbean was not negative but effectively zero.

These conflicting conclusions matter because they have policy implications. For McMillan and Rodrik, a fundamental problem for Latin America and the Caribbean is the mobility of workers toward higher productivity sectors. They write:

Our results show that since 1990 structural change has been growth reducing in both Africa and Latin America, with the most striking changes taking place in Latin America. The bulk of the difference between these countries' productivity performance and that of Asia is accounted for by differences in the pattern of structural change – with labour moving from low- to high-productivity sectors in Asia, but in the opposite direction in Latin America and sub-Saharan Africa.

(McMillan and Rodrik 2011: 78–79)

This conclusion leads McMillan and Rodrik to look to such factors as labour market rigidities to account for cross-country differences in

'structural change', finding that 'countries with more flexible labour markets experience greater growth-enhancing structural change' (2011: 51).<sup>18</sup>

One reason that McMillan and Rodrik find a sizeable negative structural change effect for Latin America and the Caribbean (at least based on unweighted regional averages) is that their method does not separate out interaction effects.<sup>19</sup> A large difference was observed in results between methods when looking at the same nine Latin America and the Caribbean countries and same 1990–2005 period as McMillan and Rodrik, based on the data used in our analysis.<sup>20</sup> Using our method to derive the reallocation effect, the unweighted regional average for these nine Latin America and the Caribbean countries is  $-0.02$ ; using McMillan and Rodrik's method, the figure is  $-0.45$ .

An additional consideration is that the reallocation (or 'structural change') effect tells us how movements of workers among sectors affect labour productivity, which is determined in part by differences in labour productivity between expanding and contracting sectors, particularly between agriculture on the one hand and industry and services on the other. Shown in Table 4.9 for the 1984–1998 and 1999–2008 periods are regional averages (unweighted) of labour intensity by industry (the employment–output ratio in each industry divided by employment–output ratio for the economy as a whole, with figures of greater than one thus indicating greater than average labour intensity). The gaps between agriculture and other sectors are consistently wider for Asia than for Latin America and the Caribbean, particularly for the more recent period. This means that the movement of a comparable number of workers from agriculture to other sectors has a larger positive reallocation effect in Asia than in Latin America and the Caribbean.

## Summing up and some policy considerations

Rapid labour productivity growth is generally associated with rapid output growth. This is best exemplified by the late-developing countries of Asia, yet employment growth in a number of these countries has been outpaced by the growth of the labour force and working age population. In this sense Asia has more of a problem with jobless growth than the less dynamic Latin America and the Caribbean region. More widely, while strong output growth translates into strong employment growth in developed countries, this does not hold in this chapter's sample of developing countries. That is, there is a stronger positive relationship between employment and output growth in developed than developing countries

Table 4.9 Industry-specific labour intensity by regional average (unweighted)

	All countries	Developed countries	C and SE Europe, CIS	Developing countries	Asia	LAC	MENA	SSA
<b>1984–1998</b>								
<b>Average labour intensity</b>								
Agriculture, hunting, forestry, fishing (ISIC A-B)	2.0	1.6	1.5	2.6	2.6	2.5	2.1	n.a.
Mining, utilities (ISIC C, E)	0.4	0.4	0.5	0.4	0.3	0.6	0.1	n.a.
Manufacturing (ISIC D)	0.9	1.0	0.9	0.8	0.8	0.8	0.7	n.a.
Construction (ISIC F)	1.2	1.2	1.0	1.3	1.3	1.2	1.7	n.a.
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	1.2	1.3	1.7	1.0	0.9	1.2	0.5	n.a.
Transport, storage, communication (ISIC I)	0.8	0.9	1.0	0.8	0.7	0.8	0.6	n.a.
Other services (ISIC J-P)	0.9	0.9	1.0	0.9	0.7	1.0	1.4	n.a.
<b>1999–2008</b>								
<b>Average labour intensity</b>								
Agriculture, hunting, forestry, fishing (ISIC A-B)	1.9	1.4	1.5	2.5	3.0	2.2	2.0	2.1
Mining, utilities (ISIC C, E)	0.4	0.4	0.9	0.3	0.2	0.3	0.1	0.4
Manufacturing (ISIC D)	0.8	0.9	0.8	0.7	0.7	0.7	0.6	0.9
Construction (ISIC F)	1.5	1.5	1.2	1.6	1.7	1.4	1.8	1.9
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	1.4	1.3	1.6	1.3	1.1	1.5	1.4	1.3
Transport, storage, communication (ISIC I)	0.7	0.7	0.9	0.7	0.7	0.7	0.6	0.4
Other services (ISIC J-P)	1.0	1.0	1.2	1.0	0.7	1.1	1.2	1.0

coupled with a stronger negative relationship between employment and labour productivity growth in developing than developed countries.

Jobless growth presents a fundamental developmental challenge, all the more so in contexts of rapid technology transfer from developed to developing countries, but what are its policy implications? With some important exceptions, noted in this section, policies to increase the employment intensity of growth are at odds with sustainable economic development. For employment intensity is the direct inverse of labour productivity, as generally measured using annual data on output and employment (e.g. ILO 2009; Kapsos 2005). In the language of labour productivity growth decomposition, increasing the employment

intensity of growth means lowering labour productivity growth whether through employment reallocation to more labour-intensive sectors or the use of more labour-intensive production within sectors. This has negative implications for per capita incomes, for, as Ocampo, Rada and Taylor write, 'Historically, labor productivity increases have been the major contributing factor to growth in real GDP per capita' (2009: 42). In other words, labour productivity increases – that is, employment intensity declines – make possible rising living standards alongside less work and more leisure, provided that productivity gains are equitably distributed to workers through higher earnings and reduced working time over the course of lifecycles.<sup>21</sup> In this sense, the jobless growth challenge is bound up with the distribution of productivity gains, which is of particular concern in light of the growing earnings inequality and declining wage shares observed in many countries in recent years (ILO 2010).

Resolving the challenge of jobless growth is well beyond the scope of this chapter, but it seems worth exploring a strategy comprised of a balanced expansion of leading sectors characterized by economies of scale and the creation of positive spillovers alongside labour-intensive sectors that also create positive spillovers. More precisely, the latter involves the use of labour-intensive methods in such largely non-tradable sectors as infrastructure, construction (e.g. of schools and health facilities) and climate change adaptation and mitigation measures. Such use of labour-intensive methods is perhaps best exemplified by the work of the ILO's Employment Intensive Investment Programme (EIIP), which has extensive experience in combining job creation with other important development objectives in a cost-effective manner.<sup>22</sup> What determines a viable balance between leading and labour-intensive sectors would depend on evolving country-specific considerations that differ widely between developed and developing countries, but for a start requires addressing the rates of output and labour productivity growth, the distribution of labour productivity gains through earnings and working time, and the extent of under- and unemployment and informal and formal employment. Also worth exploring is the use of more labour-intensive methods within leading sectors, as exemplified by the automobile component industry in India (Unni and Rani 2008).

This chapter decomposes aggregate labour productivity growth into its sectoral components to identify which sectors contributed most. Consistent with the debates on the role of manufacturing versus services in economic development, it is found that labour productivity growth in China is largely driven by manufacturing and in India largely



by services. In spite of the problems of measuring value-added in services, these differences are sufficiently corroborated by other evidence that we view them as broadly capturing real differences between the two economies. Evidence for services as a leading sector is found not just for India. For Asia as a whole, in fact, labour productivity growth is driven as much by services as by industry. This is a noteworthy finding in its own right, given that Asia is the world's most dynamic region.

Services may be regarded as a leading sector in that it contributed strongly to labour productivity growth in a compositional sense, but can it be a leading sector in the sense of spearheading the process of structural transformation and economic development? That is, can services be a *leading complement* to manufacturing or indeed even a *substitute* for manufacturing, or is it rather a *lagging complement*, as in Kaldor's view? The answer depends on the extent to which labour productivity growth in services is dependent on the dynamics of other sectors, manufacturing in particular. This chapter's analysis cannot provide a definitive answer to this question, and more in-depth approaches are required to deepen the understanding of the potential for positive spillovers from services and the causal linkages among sectors (e.g. the approach taken by Dasgupta and Singh (2005, 2006) for the IT sector in India). Yet the results presented in this chapter and our reading of the literature suggest the plausibility of the view that advanced services and IT in particular can be a *leading complement* to manufacturing and to other sectors in the process of economic development. The shift from the traditional structuralist emphasis on manufacturing is reflected in a 2009 paper by Taylor, in which he writes:

[A]s opposed to what was usually accepted in the past, sectors other than manufacturing also offer opportunities for innovation. They include modern services, but also primary production, both in niche high value-added products (e.g., fresh fruits and vegetables) and also the technological upgrading of other natural resource-intensive activities.

(Taylor 2009: 13)

Yet considerations in addition to productivity growth come into play in assessing manufacturing-led versus services-led development paths, such as whether one path might be more effective in creating decent jobs and reducing poverty and gender inequality, and here the evidence is mixed (e.g. Ghani and Kharas 2010; Lavopa and Szirmai 2012; Loayza and Raddatz 2010; Tejani and Milberg 2010).

Much of this chapter has focused on manufacturing and services, but – as the quote from Taylor suggests – agriculture too offers prospects for upgrading and diversification. This is supported by Hidalgo’s study of several countries in sub-Saharan Africa, based on the analysis of how pairs of 5000 products are co-exported by countries around the world (Hidalgo 2011). By addressing products at such a fine level of detail, Hidalgo is able to identify untapped opportunities for these predominantly rural economies within agriculture itself, based on diversifying into agricultural products for which these countries presumably could export but do not. No less important is evidence on the benefits of agricultural development for poverty reduction (Loayza and Raddatz 2010; Majid 2004).

An important strand of development economics emphasizes the role of technology-driven productivity increases in agriculture and the importance of agricultural modernization more generally. Kaldor argued, for example, that the ‘general cause which is common to most countries’ that failed to industrialize is the ‘backwardness and stagnation of agriculture’ (1967: 55). Timmer and Akkus are worth quoting at length in this regard, for they provide a vivid sense of the importance of agriculture in the process of structural transformation:

No country has been able to sustain a rapid transition out of poverty without raising productivity in its agricultural sector (if it had one to start – Singapore and Hong Kong are exceptions). The process involves *a successful structural transformation* where agriculture, through higher productivity, provides food, labor, and even savings to the process of urbanization and industrialization. A dynamic agriculture raises labor productivity in the rural economy, pulls up wages, and gradually eliminates the worst dimensions of absolute poverty. Somewhat paradoxically, the process also leads to a decline in the relative importance of agriculture to the overall economy, as the industrial and service sectors grow even more rapidly, partly through stimulus from a modernizing agriculture and migration of rural workers to urban jobs.

(Timmer and Akkus 2008: 3–4)

This chapter’s analysis indicates that agriculture contributed much less to aggregate labour productivity growth than industry or services. Yet, as has already been noted, one of the limitations of such analyses is that they do not provide a sense of what would have happened in the face of counterfactual structural characteristics. It may well be that

poorer developing countries would have grown faster and more sustainably if they had been more successful in modernizing agriculture.

In addition to decomposing aggregate labour productivity growth into sectoral contributions, this chapter decomposes it into within-sector and employment reallocation effects. For all regions of the world, these results support Kaldor's view of the greater importance of within-sector than reallocation effects in driving aggregate labour productivity growth. Yet the exceptionally strong positive reallocation effects in Asia do require additional explanation. How were a number of Asian countries able to so successfully expand production in higher productivity sectors, resulting in greater demand for workers from lower productivity sectors? How were they able to so successfully upgrade their technologies and capabilities and produce for world markets at world prices? These are defining questions in development economics and the subjects of vast and contentious literatures, for example, regarding the role of governments and trade and industrial policies and whether the development path taken by Asian late-developers remains open in light of what Nolan refers to as the 'challenge of the global business revolution' (2003). For the purposes of this chapter, perhaps it suffices to say that if other developing regions had been as successful as Asia in these respects, positive reallocation effects would likely have followed in due course.

## **Appendix: Data sources and notes**

### **I Employment data**

*For 75 of 81 countries:* ILO, LABORSTA, <<http://laborsta.ilo.org>> (accessed 22 June 2010).

*For Argentina, Colombia, Peru, India, Singapore, Taiwan (China):* Timmer and de Vries, 2009, GGDC 10-Sector Database, <http://www.rug.nl/research/ggdc> (accessed 27 July 2011).

Note that we use the total employment data from LABORSTA because it includes self-employment, whereas the paid employment data does not. The GGDC employment data also includes self-employment (Timmer and de Vries 2009).

### **II Value-added data**

*For 75 of 81 countries:* United Nations Statistics Division, <<http://unstats.un.org/unsd/snaama/selbasicFast.asp>> (Accessed 24 June 2010).

Data are valued in national currency units at constant 1990 prices.

*For Argentina, Colombia, Peru, India, Singapore, Taiwan (China):* Timmer and de Vries, 2009, GGDC 10-Sector Database, <http://www.rug.nl/research/ggdc> (Accessed 27 July 2011).

Data are valued in national currency units at constant prices in most recent base year available.

### III Cleaning and matching data

General guidelines:

1. Years for which employment data were reported in ISIC Rev. 1 were excluded because they could not be matched with value-added data without combining sectors.
2. When data was available in both ISIC Rev. 2 and ISIC Rev. 3, the latter were used because they more closely match value-added data broken down by ISIC Rev. 3.1.
3. When data from both labour force surveys and official estimate surveys were available, the former were used.
4. Employment data was examined for problematic changes, particularly when changes in method or industrial classifications were noted. Data for these transition years were deleted if we observed jumps that appeared to be due to these changes.

Further details on these and more idiosyncratic cleaning and matching issues are available on request.

### IV Years evaluated for each country

Countries were included in our sample only when it was possible to construct annual growth rates for at least four years (based on at least five years of data) within either or both the 1984-98 and 1999-2008 periods. The actual annual *growth rate* years evaluated for each country are listed below, where 'n.a.' indicates insufficient data.

Country	1984-1998	1999-2008
Argentina	1985-98	1999-2005
Australia	1985-98	1999-2008
Austria	1985-93, 1995-98	1999-2008
Azerbaijan	1991-98	2000-2008
Bahamas	1992-98	1999, 2002-2007
Barbados	1985-98	1999-2004
Belgium	1985-92, 1995-98	1999, 2002-2008
Bolivia	1985-90	2000-2002, 2005-2007
Brazil	n.a.	2003-2007
Bulgaria	1985-91, 1997-98	1999-2006
Canada	1985-86, 1988-90	1999-2008
Chile	1985-98	1999-2008
China	1988-98	1999-2002
Colombia	1985-98	1999-2005

(continued)

Continued

Country	1984–1998	1999–2008
Costa Rica	1988–98	1999–2008
Croatia	n.a.	1999–2008
Cuba	n.a.	1999–2008
Cyprus	1985–95	2000–2008
Czech Republic	1994–98	1999–2008
Denmark	1985–98	2001–2008
Dominican Republic	n.a.	1999–2007
Egypt	1990–98	1999–2007
El Salvador	n.a.	1999–2007
Estonia	1991–98	1999–2008
Finland	1985–98	1999–2008
France	1985–94	2004–2008
Georgia	n.a.	1999–2007
Germany	1992–94, 1996–98	1999–2008
Greece	1985–92, 1994–98	1999–2008
Hong Kong (China)	1985–98	1999–2008
Hungary	1993–98	1999–2008
Iceland	1992–98	1999–2008
India	1985–98	1999–2004
Indonesia	1990–98	1999–2008
Ireland	1985–98	1999–2008
Israel	1985–94	2000–2008
Italy	1985–92, 1994–98	1999–2008
Jamaica	1993–98	1999–2008
Japan	1985–98	1999–2008
Kazakhstan	n.a.	2002–2008
Korea, Rep. of	1985–98	1999–2008
Kyrgyzstan	1991–98	1999–2008
Latvia	n.a.	1999–2008
Lithuania	n.a.	1999–2008
Luxembourg	1985–90, 1996–98	1999–2006
Malaysia	1985–90, 1993, 1996–98	1999–2000, 2002–2008
Malta	n.a.	2001–2008
Mauritius	n.a.	2001–2008
Mexico	n.a.	1999–2008
Moldova, Rep. of	n.a.	2000–2008
Mongolia	1995–98	1999–2008
Morocco	n.a.	2003–2006
Myanmar	1985–90, 1993–94, 1998	n.a.
Netherlands	1985–98	1999–2008
New Zealand	1987–98	1999–2008
Nicaragua	1991, 1993–98	1999–2001, 2004–2006
Norway	1985–95, 1997–98	1999–2008
Pakistan	1985–98	1999–2008
Panama	1985–89, 1992–98	1999–2008

*(continued)*

Continued

<b>Country</b>	<b>1984–1998</b>	<b>1999–2008</b>
Peru	1985–98	1999–2005
Philippines	1985–98	1999–2000, 2001–2008
Poland	1985–92, 1995–98	1999–2007
Portugal	1985–91, 1993–98	1999–2008
Puerto Rico	1985–93, 1995–98	1999–2008
Romania	1985–98	1999–2008
Russian Fed.	1991–96, 1998	1999–2008
Saudi Arabia	n.a.	2000–2002, 2007–2008
Singapore	1985–98	1999–2005
Slovakia	n.a.	1999–2008
South Africa	n.a.	2001–2008
Spain	1985–98	1999–2004, 2006–2008
Sweden	1985–98	1999–2008
Switzerland	1987–90, 1992–98	1999–2008
Taiwan (China)	1985–98	1999–2005
Thailand	1987–98	1999–2008
Trinidad and Tobago	1989–98	1999–2008
Turkey	1989–98	1999, 2001–2008
United Kingdom	1985–87, 1989–98	1999–2008
United States	1985–98	1999–2002, 2004–2008
Venezuela	1985–87, 1990–98	1999–2008
Viet Nam	n.a.	1999–2004

Table 4.A.1 Industry-level contributions to aggregate labour productivity and employment growth for countries not in Asia or Latin America and the Caribbean (%)

Developed countries	Australia	Austria	Belgium	Canada	Denmark	Finland	France	Germany	Greece	Iceland	Ireland	Israel
<b>1984-1998</b>												
<b>Average contribution to total productivity growth</b>												
Agriculture, hunting, forestry, fishing (ISIC A-B)	3.6	10.3	5.4	6.7	22.4	13.5	16.2	9.9	53.7	12.0	8.3	2.3
Mining, utilities (ISIC C, E)	29.0	5.9	7.6	13.0	14.6	3.9	2.5	6.2	8.6	6.7	7.4	-4.9
Manufacturing (ISIC D)	17.8	39.7	36.9	30.7	5.0	45.2	38.3	44.0	4.7	13.9	51.3	-0.7
Construction (ISIC F)	1.5	7.3	4.7	-0.5	-1.0	4.2	8.1	-6.0	7.0	11.8	-1.7	7.7
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	-12.8	16.4	-0.3	9.4	11.6	6.8	8.3	2.7	1.8	31.7	-0.5	-21.5
Transport, storage, communication (ISIC I)	26.0	13.3	10.5	17.4	16.7	15.9	12.3	13.5	19.3	16.5	10.1	16.2
Other services (ISIC J-P)	34.8	7.3	35.2	23.2	30.7	10.5	14.2	29.7	4.9	7.5	25.0	100.8
<b>Industry (ISIC C-F)</b>	<b>48.3</b>	<b>52.9</b>	<b>49.2</b>	<b>43.2</b>	<b>18.6</b>	<b>53.3</b>	<b>48.9</b>	<b>44.2</b>	<b>20.3</b>	<b>32.4</b>	<b>57.0</b>	<b>2.1</b>
<b>Services (ISIC G-P)</b>	<b>48.0</b>	<b>37.0</b>	<b>45.4</b>	<b>50.0</b>	<b>59.0</b>	<b>33.2</b>	<b>34.8</b>	<b>45.9</b>	<b>26.0</b>	<b>55.7</b>	<b>34.6</b>	<b>95.5</b>
<b>Average contribution to total employment growth</b>												
Agriculture, hunting, forestry, fishing (ISIC A-B)	1.0	-26.6	-7.1	-2.3	-30.9	-81.2	-88.0	-33.6	-71.9	-11.1	-12.4	-2.2
Mining, utilities (ISIC C, E)	-4.6	-2.4	-8.2	-0.2	1.5	-5.3	-10.1	-19.2	-0.7	-1.0	-2.1	1.5
Manufacturing (ISIC D)	-1.8	-22.8	-29.8	6.9	16.8	-57.0	-143.8	-158.9	6.2	10.1	19.4	16.2

Construction (ISIC F)	9.7	6.0	11.4	3.6	10.1	-23.0	-24.6	17.2	5.0	6.2	12.3	7.4
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	33.1	35.2	13.6	24.8	32.5	-0.8	40.4	11.2	64.8	-2.4	29.4	22.0
Transport, storage, communication (ISIC I)	2.5	7.7	1.9	3.5	2.0	-5.3	3.9	-16.1	-4.0	19.3	2.1	3.8
Other services (ISIC J-P)	60.3	102.9	118.3	63.7	68.0	72.6	322.1	99.5	100.5	78.8	51.2	51.3
<b>Industry (ISIC C-F)</b>	<b>3.3</b>	<b>-19.2</b>	<b>-26.6</b>	<b>10.3</b>	<b>28.4</b>	<b>-85.3</b>	<b>-178.5</b>	<b>-160.9</b>	<b>10.5</b>	<b>15.3</b>	<b>29.6</b>	<b>25.1</b>
<b>Services (ISIC G-P)</b>	<b>95.9</b>	<b>145.8</b>	<b>133.8</b>	<b>92.0</b>	<b>102.5</b>	<b>66.5</b>	<b>366.4</b>	<b>94.6</b>	<b>161.3</b>	<b>95.7</b>	<b>82.7</b>	<b>77.1</b>
<b>1999-2008</b>												
<b>Average contribution to total productivity growth</b>	<b>14.8</b>	<b>3.0</b>	<b>-10.4</b>	<b>10.8</b>	<b>-25.3</b>	<b>10.2</b>	<b>37.1</b>	<b>6.3</b>	<b>11.0</b>	<b>13.6</b>	<b>2.0</b>	<b>10.4</b>
<b>Agriculture, hunting, forestry, fishing (ISIC A-B)</b>	<b>13.9</b>	<b>12.9</b>	<b>-0.7</b>	<b>1.1</b>	<b>-80.7</b>	<b>4.6</b>	<b>4.3</b>	<b>4.7</b>	<b>2.4</b>	<b>5.6</b>	<b>7.9</b>	<b>6.6</b>
Mining, utilities (ISIC C, E)	11.7	65.1	44.5	28.2	-98.7	89.1	31.2	67.5	20.2	31.1	115.2	20.8
Manufacturing (ISIC D)	-1.5	1.9	-6.7	-2.8	9.4	-6.6	-10.9	9.4	1.2	1.2	-21.2	-11.1
Construction (ISIC F)	6.1	-1.3	23.1	23.3	-37.1	8.5	3.2	5.8	17.2	23.4	-12.2	-10.4
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	38.0	8.5	15.1	18.0	98.8	18.8	34.6	15.4	55.3	22.0	0.6	20.3
Transport, storage, communication (ISIC I)	17.0	9.9	35.0	21.4	33.5	-24.5	0.6	-9.1	-7.5	3.1	7.7	63.3
Other services (ISIC J-P)	24.1	79.9	37.1	26.5	-170.0	87.1	24.6	81.6	23.8	37.9	101.9	16.3
<b>Industry (ISIC C-F)</b>	<b>61.1</b>	<b>17.1</b>	<b>73.2</b>	<b>62.7</b>	<b>95.2</b>	<b>2.8</b>	<b>38.4</b>	<b>12.1</b>	<b>65.0</b>	<b>48.5</b>	<b>-3.9</b>	<b>73.2</b>
<b>Services (ISIC G-P)</b>	<b>3.1</b>	<b>-3.9</b>	<b>3.4</b>	<b>-4.4</b>	<b>-15.4</b>	<b>-9.8</b>	<b>-18.0</b>	<b>-5.3</b>	<b>-36.2</b>	<b>-12.3</b>	<b>-2.8</b>	<b>-0.9</b>
<b>Average contribution to total employment growth</b>	<b>-3.1</b>	<b>-3.9</b>	<b>3.4</b>	<b>-4.4</b>	<b>-15.4</b>	<b>-9.8</b>	<b>-18.0</b>	<b>-5.3</b>	<b>-36.2</b>	<b>-12.3</b>	<b>-2.8</b>	<b>-0.9</b>
<b>Agriculture, hunting, forestry, fishing (ISIC A-B)</b>												

(continued)



Table 4.A.1 Continued

	Australia	Austria	Belgium	Canada	Denmark	Finland	France	Germany	Greece	Iceland	Ireland	Israel
<b>Developed countries</b>												
Mining, utilities (ISIC C, E)	3.9	-3.1	1.8	3.6	3.8	-2.0	-2.7	-1.1	4.7	0.9	1.1	-0.1
Manufacturing (ISIC D)	0.0	-16.6	-8.3	-3.2	-81.0	-2.6	-18.0	1.5	-8.3	-14.6	-3.0	12.1
Construction (ISIC F)	16.7	3.8	15.4	15.6	8.7	14.8	17.3	-23.2	18.9	20.1	20.0	4.4
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	16.9	32.0	6.6	23.3	66.4	21.5	14.8	16.5	40.0	15.4	22.7	20.3
Transport, storage, communication (ISIC I)	6.9	0.9	2.5	6.0	-16.3	1.7	5.4	7.9	-4.3	2.4	7.0	6.0
Other services (ISIC J-P)	58.7	86.8	78.7	59.2	133.7	76.5	101.2	103.8	85.1	88.2	55.1	58.1
<b>Industry (ISIC C-F)</b>	<b>20.6</b>	<b>-15.9</b>	<b>8.9</b>	<b>16.0</b>	<b>-68.5</b>	<b>10.2</b>	<b>-3.4</b>	<b>-22.8</b>	<b>15.3</b>	<b>6.4</b>	<b>18.1</b>	<b>16.4</b>
<b>Services (ISIC G-P)</b>	<b>82.5</b>	<b>119.7</b>	<b>87.8</b>	<b>88.5</b>	<b>183.8</b>	<b>99.7</b>	<b>121.4</b>	<b>128.2</b>	<b>120.8</b>	<b>106.0</b>	<b>84.8</b>	<b>84.4</b>

Table 4.A.1 Continued

Developed countries (contd.)	Italy	Japan	Luxembourg	Malta	Netherlands	New Zealand	Norway	Portugal	Spain	Sweden	Switzerland	United Kingdom	United States
Average contribution to total productivity growth	22.0	8.4	2.9	n.a.	25.1	29.0	10.0	3.4	65.9	6.6	3.6	2.2	4.1
Agriculture, hunting, forestry, fishing (ISIC A-B)	3.2	2.9	3.4	n.a.	6.2	10.6	39.0	8.3	9.8	1.9	5.9	10.6	6.9
Mining, utilities (ISIC C, E)	35.3	36.7	40.7	n.a.	62.3	17.1	5.6	22.1	46.3	43.1	68.1	37.9	39.0
Manufacturing (ISIC D)	4.0	-0.9	1.4	n.a.	3.0	-7.3	5.5	-1.8	-8.4	3.1	17.0	3.3	-0.8
Construction (ISIC F)	13.8	20.3	10.8	n.a.	-2.4	-24.0	13.8	2.7	-26.1	12.7	29.8	19.2	31.9
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	12.8	7.9	21.7	n.a.	38.4	65.7	20.8	11.5	18.1	13.4	5.5	16.1	10.1
Transport, storage, communication (ISIC I)	8.8	24.6	19.1	n.a.	-32.6	8.8	5.3	53.8	-5.6	19.2	-29.9	10.7	8.7
Other services (ISIC J-P)	42.5	38.7	45.5	n.a.	71.5	20.4	50.1	28.6	47.7	48.1	91.0	51.8	45.1
Industry (ISIC C-F)	35.4	52.8	51.6	n.a.	3.4	50.5	39.9	68.0	-13.6	45.3	5.4	46.0	50.7
Services (ISIC G-P)													

(continued)



<b>Agriculture, hunting, forestry, fishing (ISIC A-B)</b>	<b>177.3</b>	<b>7.4</b>	<b>-4.4</b>	<b>74.1</b>	<b>4.8</b>	<b>8.0</b>	<b>14.5</b>	<b>11.7</b>	<b>57.3</b>	<b>6.2</b>	<b>1.8</b>	<b>0.9</b>	<b>4.8</b>
Mining, utilities (ISIC C, E)	80.1	4.5	6.5	-544.4	2.5	-0.6	5.2	9.5	21.9	-0.9	0.4	-3.6	0.4
Manufacturing (ISIC D)	119.0	49.9	36.1	1564.6	41.3	53.9	23.8	58.7	53.2	96.5	71.0	30.6	46.3
Construction (ISIC F)	-111.3	6.0	-10.2	-768.8	-0.8	-18.4	-12.2	-16.7	-80.9	-5.0	1.1	-4.7	-10.7
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	-347.7	-3.4	-4.5	-2512.2	31.9	3.3	58.2	-15.5	-160.4	15.9	26.8	22.0	32.7
Transport, storage, communication (ISIC I)	210.8	7.2	72.7	-736.8	25.9	61.9	22.1	28.8	13.8	11.3	39.0	20.6	13.9
Other services (ISIC J-P)	-228.2	28.3	3.9	3023.4	-5.6	-8.1	-11.6	23.5	-4.9	-24.0	-40.1	34.1	12.6
<b>Industry (ISIC C-F)</b>	<b>87.8</b>	<b>60.4</b>	<b>32.4</b>	<b>251.4</b>	<b>43.0</b>	<b>34.9</b>	<b>16.8</b>	<b>51.5</b>	<b>-5.8</b>	<b>90.6</b>	<b>72.5</b>	<b>22.3</b>	<b>36.0</b>
<b>Services (ISIC G-P)</b>	<b>-365.1</b>	<b>32.1</b>	<b>72.1</b>	<b>-225.6</b>	<b>52.2</b>	<b>57.1</b>	<b>68.7</b>	<b>36.8</b>	<b>-151.5</b>	<b>3.2</b>	<b>25.7</b>	<b>76.7</b>	<b>59.2</b>
<b>Average contribution to total employment growth</b>													
<b>Agriculture, hunting, forestry, fishing (ISIC A-B)</b>	<b>-11.0</b>	<b>-45.2</b>	<b>0.5</b>	<b>3.9</b>	<b>-1.0</b>	<b>1.7</b>	<b>-12.4</b>	<b>-16.2</b>	<b>-3.8</b>	<b>-0.2</b>	<b>-2.3</b>	<b>-1.6</b>	<b>-1.1</b>
Mining, utilities (ISIC C, E)	-3.1	-4.8	0.1	0.5	-0.6	0.3	2.0	0.6	0.2	-1.3	0.0	1.9	1.4
Manufacturing (ISIC D)	-4.0	-125.0	0.2	-61.1	-11.1	-2.5	-13.3	-63.2	6.2	-17.5	0.1	-63.2	-28.6
Construction (ISIC F)	15.4	-75.8	9.9	15.3	6.8	14.8	13.6	11.9	18.0	13.8	3.9	20.3	16.2
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	28.3	12.7	12.4	45.7	13.3	22.0	6.8	49.2	25.3	15.9	3.2	9.2	12.5
Transport, storage, communication (ISIC I)	7.1	-8.5	8.7	11.6	8.9	4.5	-5.1	11.4	5.9	0.8	5.0	8.5	9.0
Other services (ISIC J-P)	67.3	146.7	68.2	84.1	83.7	59.2	108.3	106.4	48.3	88.6	90.0	124.9	90.6
<b>Industry (ISIC C-F)</b>	<b>8.3</b>	<b>-205.6</b>	<b>10.2</b>	<b>-45.3</b>	<b>-4.9</b>	<b>12.6</b>	<b>2.3</b>	<b>-50.7</b>	<b>24.4</b>	<b>-5.0</b>	<b>4.0</b>	<b>-41.0</b>	<b>-11.0</b>
<b>Services (ISIC G-P)</b>	<b>102.7</b>	<b>150.9</b>	<b>89.3</b>	<b>141.4</b>	<b>105.9</b>	<b>85.7</b>	<b>110.0</b>	<b>167.0</b>	<b>79.5</b>	<b>105.3</b>	<b>98.2</b>	<b>142.6</b>	<b>112.1</b>

(continued)

Table A.1 Continued

	Azerbaijan	Bulgaria	Croatia	Cyprus	Czech Republic	Estonia	Georgia	Hungary	Kazakhstan	Kyrgyzstan	Latvia
<b>Central and SE Europe and CIS</b>											
<b>1984-1998</b>											
<b>Average contribution to total productivity growth</b>											
Agriculture, hunting, forestry, fishing (ISIC A-B)	-42.6	18.2	n.a.	12.1	-63.1	81.5	n.a.	16.8	n.a.	-28.5	n.a.
Mining, utilities (ISIC C, E)	-9.1	-2.6	n.a.	5.6	-36.2	n.a.	n.a.	3.9	n.a.	-12.1	n.a.
Manufacturing (ISIC D)	-20.8	-15.9	n.a.	10.1	230.0	27.9	n.a.	54.7	n.a.	-17.0	n.a.
Construction (ISIC F)	56.0	3.9	n.a.	-0.5	-10.9	32.6	n.a.	-0.2	n.a.	-4.5	n.a.
Wholesale & retail trade, restaurants, hotels (ISIC G-H)	-30.3	8.6	n.a.	14.7	52.4	-23.8	n.a.	3.4	n.a.	-18.1	n.a.
Transport, storage, communication (ISIC I)	-14.3	21.9	n.a.	9.4	12.7	9.8	n.a.	8.2	n.a.	-8.7	n.a.
Other services (ISIC J-P)	-38.9	65.9	n.a.	48.6	-84.9	-28.0	n.a.	13.3	n.a.	-11.1	n.a.
<b>Industry (ISIC C-F)</b>	<b>26.1</b>	<b>-14.6</b>	<b>n.a.</b>	<b>15.2</b>	<b>182.9</b>	<b>60.5</b>	<b>n.a.</b>	<b>58.4</b>	<b>n.a.</b>	<b>-33.6</b>	<b>n.a.</b>
<b>Services (ISIC G-P)</b>	<b>-83.5</b>	<b>96.4</b>	<b>n.a.</b>	<b>72.7</b>	<b>-19.8</b>	<b>-42.0</b>	<b>n.a.</b>	<b>24.9</b>	<b>n.a.</b>	<b>-37.9</b>	<b>n.a.</b>
<b>Average contribution to total employment growth</b>											
Agriculture, hunting, forestry, fishing (ISIC A-B)	-189.8	-20.6	n.a.	-8.2	-1774.2	-55.4	n.a.	-48.6	n.a.	804.9	n.a.
Mining, utilities (ISIC C, E)	4.0	-1.4	n.a.	-0.4	-757.9	n.a.	n.a.	-10.6	n.a.	-28.7	n.a.
Manufacturing (ISIC D)	-747.0	-46.9	n.a.	1.0	-1669.7	-37.8	n.a.	-36.5	n.a.	-458.8	n.a.
Construction (ISIC F)	-329.2	-14.6	n.a.	6.2	790.0	-9.5	n.a.	4.1	n.a.	-300.7	n.a.
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	1327.0	-2.0	n.a.	42.9	2569.2	8.1	n.a.	-0.2	n.a.	243.6	n.a.
Transport, storage, communication (ISIC I)	-157.6	-4.7	n.a.	8.9	-167.0	-5.6	n.a.	-12.3	n.a.	-55.5	n.a.
Other services (ISIC J-P)	192.5	-9.8	n.a.	49.5	909.6	0.1	n.a.	4.2	n.a.	-304.7	n.a.
<b>Industry (ISIC C-F)</b>	<b>-1072.2</b>	<b>-62.9</b>	<b>n.a.</b>	<b>6.8</b>	<b>-1637.6</b>	<b>-47.3</b>	<b>n.a.</b>	<b>-43.0</b>	<b>0.0</b>	<b>-788.2</b>	<b>n.a.</b>
<b>Services (ISIC G-P)</b>	<b>1361.9</b>	<b>-16.5</b>	<b>n.a.</b>	<b>101.3</b>	<b>3311.8</b>	<b>2.6</b>	<b>n.a.</b>	<b>-8.3</b>	<b>0.0</b>	<b>-116.6</b>	<b>n.a.</b>

1999–2008

## Average contribution to total productivity growth

Agriculture, hunting, forestry, fishing (ISIC A-B)	8.4	-1.7	11.7	-94.1	10.5	6.1	-3.1	19.9	11.8	230.1	32.1
Mining, utilities (ISIC C, E)	3.5	-0.9	0.5	35.5	4.1	n.a.	3.1	1.5	14.4	-18.7	0.5
Manufacturing (ISIC D)	14.9	32.8	24.8	-2.1	49.4	58.4	19.0	52.1	8.3	-20.3	20.9
Construction (ISIC F)	63.3	0.9	-1.2	-112.3	-2.5	2.1	9.9	-0.1	12.6	-69.0	-8.2
Wholesale & retail trade, restaurants, hotels (ISIC G-H)	1.3	4.6	30.6	45.5	25.5	8.5	21.7	1.5	10.9	-60.7	19.5
Transport, storage, communication (ISIC I)	5.3	27.1	9.5	204.7	6.9	8.3	13.7	9.2	11.1	28.5	14.4
Other services (ISIC J-P)	3.3	37.2	24.2	-177.3	6.2	16.7	35.8	15.8	30.9	10.0	20.8
<b>Industry (ISIC C-F)</b>	<b>81.7</b>	<b>32.8</b>	<b>24.1</b>	<b>-78.9</b>	<b>51.0</b>	<b>60.5</b>	<b>32.0</b>	<b>53.5</b>	<b>35.3</b>	<b>-108.0</b>	<b>13.2</b>
<b>Services (ISIC G-P)</b>	<b>9.9</b>	<b>68.9</b>	<b>64.3</b>	<b>72.9</b>	<b>38.6</b>	<b>33.5</b>	<b>71.2</b>	<b>26.5</b>	<b>52.9</b>	<b>-22.2</b>	<b>54.7</b>

## Average contribution to total employment growth

Agriculture, hunting, forestry, fishing (ISIC A-B)	-3.4	-13.4	-37.3	3.8	-74.1	-56.4	345.1	-54.9	-0.5	-15.9	-70.2
Mining, utilities (ISIC C, E)	3.4	-14.9	0.3	1.0	-33.2	n.a.	-28.7	-29.4	4.3	4.6	0.4
Manufacturing (ISIC D)	5.0	-26.1	-8.5	1.1	66.5	-5.7	-179.1	-20.8	5.0	6.5	-9.6
Construction (ISIC F)	20.5	26.0	48.4	15.5	-7.3	69.5	217.7	42.2	24.7	34.5	51.1
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	26.4	89.0	49.2	16.1	-3.4	36.0	52.6	79.0	16.4	39.5	38.9
Transport, storage, communication (ISIC I)	11.5	-10.1	-1.5	1.6	-2.5	1.1	-18.1	-7.3	6.9	11.7	19.7
Other services (ISIC J-P)	36.5	49.6	49.5	60.9	154.0	55.5	-489.7	91.1	43.2	19.1	69.8
<b>Industry (ISIC C-F)</b>	<b>28.9</b>	<b>-15.0</b>	<b>40.2</b>	<b>17.6</b>	<b>26.0</b>	<b>63.8</b>	<b>9.9</b>	<b>-8.0</b>	<b>34.0</b>	<b>45.6</b>	<b>41.9</b>
<b>Services (ISIC G-P)</b>	<b>74.4</b>	<b>128.5</b>	<b>97.2</b>	<b>78.6</b>	<b>148.1</b>	<b>92.6</b>	<b>-455.2</b>	<b>162.8</b>	<b>66.5</b>	<b>70.3</b>	<b>128.4</b>

(continued)

Table 4.A.1 Continued

	Lithuania	Moldova, Rep. of	Poland	Romania	Russian Fed.	Slovakia	Turkey
<b>Central and SE Europe and CIS (contd.)</b>							
<b>1984-98</b>							
<b>Average contribution to total productivity growth</b>							
Agriculture, hunting, forestry, fishing (ISIC A-B)	n.a.	n.a.	25.4	-44.8	-25.3	n.a.	12.7
Mining, utilities (ISIC C, E)	n.a.	n.a.	5.4	-23.7	-22.9	n.a.	6.2
Manufacturing (ISIC D)	n.a.	n.a.	52.4	-22.1	-13.1	n.a.	43.1
Construction (ISIC F)	n.a.	n.a.	9.6	-1.2	-11.0	n.a.	0.0
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	n.a.	n.a.	11.7	-19.3	-6.7	n.a.	15.9
Transport, storage, communication (ISIC I)	n.a.	n.a.	10.3	-9.2	-13.5	n.a.	17.2
Other services (ISIC J-P)	n.a.	n.a.	-14.9	20.3	-7.6	n.a.	4.9
<b>Industry (ISIC C-F)</b>	<b>n.a.</b>	<b>n.a.</b>	<b>67.4</b>	<b>-47.0</b>	<b>-47.0</b>	<b>n.a.</b>	<b>49.3</b>
<b>Services (ISIC G-P)</b>	<b>n.a.</b>	<b>n.a.</b>	<b>7.1</b>	<b>-8.2</b>	<b>-27.8</b>	<b>n.a.</b>	<b>38.0</b>
<b>Average contribution to total employment growth</b>							
Agriculture, hunting, forestry, fishing (ISIC A-B)	n.a.	n.a.	-95.8	127.4	-9.1	n.a.	-7.5
Mining, utilities (ISIC C, E)	n.a.	n.a.	-7.9	18.8	2.1	n.a.	0.2
Manufacturing (ISIC D)	n.a.	n.a.	-59.6	-258.9	-65.9	n.a.	30.8
Construction (ISIC F)	n.a.	n.a.	-1.7	-44.0	-28.0	n.a.	10.6
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	n.a.	n.a.	37.2	67.9	8.9	n.a.	33.1
Transport, storage, communication (ISIC I)	n.a.	n.a.	-8.3	-29.4	-7.5	n.a.	6.3
Other services (ISIC J-P)	n.a.	n.a.	36.1	18.2	-0.6	n.a.	26.6
<b>Industry (ISIC C-F)</b>	<b>n.a.</b>	<b>n.a.</b>	<b>-69.2</b>	<b>-284.1</b>	<b>-91.8</b>	<b>n.a.</b>	<b>41.6</b>
<b>Services (ISIC G-P)</b>	<b>n.a.</b>	<b>n.a.</b>	<b>65.0</b>	<b>56.7</b>	<b>0.8</b>	<b>n.a.</b>	<b>66.0</b>

1999–2008

## Average contribution to total productivity growth

<b>Agriculture, hunting, forestry, fishing (ISIC A-B)</b>	15.4	59.1	13.2	32.4	18.8	16.0	36.6
Mining, utilities (ISIC C, E)	n.a.	1.2	-11.1	-0.6	47.8	0.6	4.2
Manufacturing (ISIC D)	40.1	24.2	77.8	38.5	17.6	59.3	18.5
Construction (ISIC F)	3.6	-0.8	2.6	5.8	4.8	-1.7	9.1
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	5.8	-7.0	10.2	3.1	0.4	23.1	-1.4
Transport, storage, communication (ISIC I)	10.9	8.3	8.8	5.4	6.0	-0.9	25.0
Other services (ISIC J-P)	24.2	15.1	-1.6	15.5	4.6	3.6	8.0
<b>Industry (ISIC C-F)</b>	43.7	24.6	69.3	43.7	70.2	58.2	31.8
<b>Services (ISIC G-P)</b>	40.9	16.4	17.4	24.0	11.0	25.8	31.6

## Average contribution to total employment growth

<b>Agriculture, hunting, forestry, fishing (ISIC A-B)</b>	-468.9	-143.2	-1176.0	-120.9	-2.7	-37.1	-897.0
Mining, utilities (ISIC C, E)	n.a.	0.8	-301.5	-12.2	6.3	-14.5	-10.1
Manufacturing (ISIC D)	-86.0	0.5	-31.0	-26.6	6.9	32.0	238.4
Construction (ISIC F)	194.9	17.0	-25.5	25.0	14.6	22.2	-47.4
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	222.7	24.9	375.3	22.1	34.3	35.8	363.9
Transport, storage, communication (ISIC I)	15.9	0.5	36.7	-0.8	9.5	2.6	-13.5
Other services (ISIC J-P)	221.5	-0.6	1022.0	13.4	31.0	58.9	465.7
<b>Industry (ISIC C-F)</b>	108.9	18.3	-358.0	-13.8	27.8	39.7	180.9
<b>Services (ISIC G-P)</b>	460.1	24.8	1434.0	34.7	74.8	97.3	816.1

(continued)



Table 4.A.1 Continued

	Egypt	Morocco	Saudi Arabia	Mauritius	South Africa
<b>Middle East and North Africa and sub-Saharan Africa</b>					
<b>1984-1998</b>					
<b>Average contribution to total productivity growth</b>					
<b>Agriculture, hunting, forestry, fishing (ISIC A-B)</b>	54.2	n.a.	n.a.	n.a.	n.a.
Mining, utilities (ISIC C, E)	0.5	n.a.	n.a.	n.a.	n.a.
Manufacturing (ISIC D)	35.0	n.a.	n.a.	n.a.	n.a.
Construction (ISIC F)	-2.7	n.a.	n.a.	n.a.	n.a.
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	9.4	n.a.	n.a.	n.a.	n.a.
Transport, storage, communication (ISIC I)	6.8	n.a.	n.a.	n.a.	n.a.
Other services (ISIC J-P)	-3.4	n.a.	n.a.	n.a.	n.a.
<b>Industry (ISIC C-F)</b>	<b>32.8</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>
<b>Services (ISIC G-P)</b>	<b>12.8</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>
<b>Average contribution to total employment growth</b>					
<b>Agriculture, hunting, forestry, fishing (ISIC A-B)</b>	<b>-115.4</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>
Mining, utilities (ISIC C, E)	10.2	n.a.	n.a.	n.a.	n.a.
Manufacturing (ISIC D)	7.2	n.a.	n.a.	n.a.	n.a.
Construction (ISIC F)	22.0	n.a.	n.a.	n.a.	n.a.
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	67.4	n.a.	n.a.	n.a.	n.a.

Transport, storage, communication (ISIC I)	12.2	n.a.	n.a.	n.a.	n.a.
Other services (ISIC J-P)	96.5	n.a.	n.a.	n.a.	n.a.
<b>Industry (ISIC C-F)</b>	<b>39.4</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>
<b>Services (ISIC G-P)</b>	<b>176.1</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>
<b>1999–2008</b>					
<b>Average contribution to total productivity growth</b>					
<b>Agriculture, hunting, forestry, fishing (ISIC A-B)</b>	<b>-32.0</b>	<b>22.5</b>	<b>26.0</b>	<b>7.5</b>	<b>52.4</b>
Mining, utilities (ISIC C, E)	22.1	9.0	30.4	4.3	13.4
Manufacturing (ISIC D)	62.3	11.1	115.1	33.1	10.4
Construction (ISIC F)	-22.0	-0.6	73.5	1.7	-6.1
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	34.6	9.5	-8.0	4.3	1.0
Transport, storage, communication (ISIC I)	12.9	20.2	36.6	27.3	20.8
Other services (ISIC J-P)	22.2	28.2	-173.6	21.7	8.1
<b>Industry (ISIC C-F)</b>	<b>62.4</b>	<b>19.5</b>	<b>219.0</b>	<b>39.1</b>	<b>17.7</b>
<b>Services (ISIC G-P)</b>	<b>69.7</b>	<b>57.9</b>	<b>-145.0</b>	<b>53.3</b>	<b>29.9</b>
<b>Average contribution to total employment growth</b>					
<b>Agriculture, hunting, forestry, fishing (ISIC A-B)</b>	<b>37.0</b>	<b>23.2</b>	<b>-1.7</b>	<b>-41.7</b>	<b>-71.5</b>
Mining, utilities (ISIC C, E)	0.7	-1.3	-1.2	-0.3	-17.5
Manufacturing (ISIC D)	6.6	-6.5	1.7	-118.6	23.6
Construction (ISIC F)	13.8	32.0	-1.1	40.5	29.7
Wholesale and retail trade, restaurants, hotels (ISIC G-H)	8.5	12.8	17.0	72.2	43.2
Transport, storage, communication (ISIC I)	9.2	14.3	12.7	22.1	11.2
Other services (ISIC J-P)	24.1	25.5	72.6	125.9	81.3
<b>Industry (ISIC C-F)</b>	<b>21.1</b>	<b>24.2</b>	<b>-0.6</b>	<b>-78.4</b>	<b>35.8</b>
<b>Services (ISIC G-P)</b>	<b>41.8</b>	<b>52.6</b>	<b>102.3</b>	<b>220.2</b>	<b>135.7</b>

Note: When period averages of aggregate labour productivity and employment growth are very small, % can be greater than 100.

Table 4.A.2 Within-sector versus reallocation effects on aggregate labour productivity growth by country

	1984–1998						1999–2008					
	Productivity		Within		Reallocation		Productivity		Within		Reallocation	
Australia	1.7	2.0	-0.3	0.9	0.5	0.3	1.7	2.0	-0.3	0.9	0.5	0.3
Austria	1.9	1.6	0.3	1.6	1.6	-0.1	1.9	1.6	0.3	1.6	1.6	-0.1
Belgium	1.9	2.0	-0.1	0.7	0.7	0.0	1.9	2.0	-0.1	0.7	0.7	0.0
Canada	1.1	1.2	0.0	0.9	0.9	0.0	1.1	1.2	0.0	0.9	0.9	0.0
Denmark	1.5	1.4	0.1	-0.3	-0.4	0.1	1.5	1.4	0.1	-0.3	-0.4	0.1
Finland	2.9	2.7	0.1	2.2	2.6	-0.4	2.9	2.7	0.1	2.2	2.6	-0.4
France	1.7	1.4	0.3	0.8	0.8	-0.1	1.7	1.4	0.3	0.8	0.8	-0.1
Germany	2.2	1.9	0.3	1.0	0.8	0.2	2.2	1.9	0.3	1.0	0.8	0.2
Greece	1.3	0.4	0.9	2.7	2.5	0.3	1.3	0.4	0.9	2.7	2.5	0.3
Iceland	1.5	1.4	0.1	2.6	2.7	-0.1	1.5	1.4	0.1	2.6	2.7	-0.1
Ireland	3.3	3.3	0.1	1.9	2.8	-0.8	3.3	3.3	0.1	1.9	2.8	-0.8
Israel	2.0	1.9	0.1	1.2	0.9	0.3	2.0	1.9	0.1	1.2	0.9	0.3
Italy	2.0	1.6	0.4	-0.1	-0.1	0.0	2.0	1.6	0.4	-0.1	-0.1	0.0
Japan	2.0	1.7	0.3	1.6	1.4	0.1	2.0	1.7	0.3	1.6	1.4	0.1
Luxembourg	3.0	2.7	0.4	1.3	1.4	-0.1	3.0	2.7	0.4	1.3	1.4	-0.1
Malta	n.a.	n.a.	n.a.	0.0	-0.3	0.3	n.a.	n.a.	n.a.	0.0	-0.3	0.3
Netherlands	0.5	0.5	-0.1	1.2	1.4	-0.2	0.5	0.5	-0.1	1.2	1.4	-0.2
New Zealand	0.9	1.0	-0.1	0.8	0.9	-0.1	0.9	1.0	-0.1	0.8	0.9	-0.1
Norway	2.2	2.1	0.2	1.6	1.8	-0.2	2.2	2.1	0.2	1.6	1.8	-0.2
Portugal	1.9	1.7	0.3	0.9	0.4	0.4	1.9	1.7	0.3	0.9	0.4	0.4
Spain	0.9	0.6	0.3	-0.3	-0.2	-0.1	0.9	0.6	0.3	-0.3	-0.2	-0.1
Sweden	2.6	2.6	0.0	1.6	2.2	-0.6	2.6	2.6	0.0	1.6	2.2	-0.6
Switzerland	0.9	0.7	0.2	0.8	0.7	0.1	0.9	0.7	0.2	0.8	0.7	0.1
United Kingdom	2.0	2.2	-0.1	1.6	1.7	-0.1	2.0	2.2	-0.1	1.6	1.7	-0.1
United States	1.5	1.6	0.0	1.6	1.9	-0.2	1.5	1.6	0.0	1.6	1.9	-0.2

Developed



Table 4.A.2 Continued

	1984–1998			1999–2008		
	Productivity	Within	Reallocation	Productivity	Within	Reallocation
Taiwan (China)	5.3	4.8	0.6	3.0	2.5	0.5
Thailand	5.1	2.4	2.8	2.9	2.1	0.8
Viet Nam	n.a.	n.a.	n.a.	4.2	1.7	2.6
Argentina	1.9	1.8	0.0	-0.8	-0.5	-0.3
Bahamas	-0.1	-0.7	0.6	0.5	0.1	0.3
Barbados	0.7	0.4	0.3	-0.6	-0.5	-0.2
Bolivia	0.2	0.4	-0.4	0.5	0.5	-0.1
Brazil	n.a.	n.a.	n.a.	1.0	0.6	0.4
Chile	3.1	3.0	0.1	1.5	1.5	0.0
Colombia	1.2	0.4	0.6	-0.9	-0.8	-0.1
Costa Rica	1.6	1.1	0.6	1.3	0.8	0.3
Cuba	n.a.	n.a.	n.a.	4.9	4.0	0.9
Dominican Republic	n.a.	n.a.	n.a.	2.9	3.1	-0.2
El Salvador	n.a.	n.a.	n.a.	1.6	1.2	0.3
Jamaica	0.1	-1.0	1.0	-0.7	-1.4	0.5
Mexico	n.a.	n.a.	n.a.	1.2	0.8	0.3
Nicaragua	-0.5	-0.4	-0.2	0.0	0.0	0.0
Panama	-1.3	-1.8	0.5	2.0	2.0	0.0
Peru	0.5	0.2	0.1	2.5	2.4	0.0
Puerto Rico	2.0	2.5	-0.5	0.8	1.7	-0.9
Trinidad and Tobago	0.3	0.3	0.0	5.3	5.4	0.0
Venezuela	-0.7	0.0	-0.7	-0.5	0.3	-0.7
Egypt	3.2	1.1	2.1	1.6	2.0	-0.4
Morocco	n.a.	n.a.	n.a.	4.7	4.0	0.7
Saudi Arabia	n.a.	n.a.	n.a.	0.4	1.3	-0.9
Mauritius	n.a.	n.a.	n.a.	3.4	3.0	0.4
South Africa	n.a.	n.a.	n.a.	2.5	1.9	0.6

Latin America and Caribbean

MENA

SSA

## Notes

1. Though informal employment is of fundamental importance as a defining characteristic of labour markets in developing countries, we regard it as beyond the scope of our already wide-ranging paper.
2. See Ramaswamy and Agrawal (2012) for similar views.
3. See Mattoo (2009) for related views.
4. These findings are based on the covariance between aggregate labour productivity growth and each sector's total (within-sector, reallocation and interaction effects) contribution to aggregate labour productivity growth.
5. Pieper notes, however, that there was a correlation coefficient between labour productivity growth and employment growth of -0.47, significant at the five per cent level, for the 1985–1993 period. The author does not report the correlation coefficient for the 1975–1984 period, but notes that it was not statistically significant (Pieper 2000: 73).
6. This is based on a comparison of Ocampo, Rada and Taylor's (2009) figures 3.4 and 3.5, the former showing overall productivity growth and within-sector effects (according to the note for figure 3.4) and the latter showing reallocation effects.
7. The countries in this group are Argentina, Brazil, Chile, Colombia, Mexico, South Africa, Turkey and Venezuela.
8. The countries in this group are Costa Rica, the Dominican Republic, El Salvador, Guatemala and Jamaica. For the group of small Andean countries, comprised of Bolivia, Ecuador and Peru, the total reallocation effect was negative but small, much smaller in absolute value than the positive effects for the groups of semi-industrialized and Central American and Caribbean countries.
9. Note that the colours of the bar graphs indicating within versus structural change are reversed between the relevant figures 2.8 and 2.9 (McMillan and Rodrik 2011: 66, 69).
10. Timmer and de Vries analysis was based on a ten-sector breakdown, but results were aggregated up to these five sectors. Timmer and de Vries also make an adjustment to employment reallocation versus within-sector effects on the assumption that shifts of workers from agriculture to other sectors increases agricultural labour productivity, which attributes more of labour productivity growth to reallocation than within-sector effects. The authors make an additional adjustment to within-sector versus reallocation effects depending on whether sectors are above or below average labour productivity levels. Based on the example given by the authors of the Republic of Korea for 1963–2005 (a growth acceleration period), these adjustments have more of an effect on sectoral than total estimates. That is, without adjustments, the total within-sector effect is 3.6 per cent and the total reallocation effect is 0.8 per cent; with either the first adjustment or both the first and second adjustments, the respective figures are 3.4 and 1.0 per cent.
11. Note that in Ocampo, Rada and Taylor (2009), the interaction term takes the form of  $(1+n_i)^{-1}$  outside of the summation operator in Eq. 4.2, but that within-sector and reallocation effects are identical to Eqs. 3 and 4.
12. In this sense, the method we use is not vulnerable to the concern raised by Timmer and de Vries that 'In the traditional procedure, all expanding sectors

- contribute positively to productivity growth, even though they have below-average productivity levels' (Timmer and de Vries 2009: 170).
13. See Ocampo, Rada and Taylor (2009: 5) regarding data limitations and Lipsey and Carlaw (2001) regarding the meaning of TFP. In the conclusion of their critical survey of TFP, Lipsey and Carlaw write: 'TFP is as much a measure of our ignorance as it is a measure of anything positive. It seems to us that, whatever TFP does measure – and there is cause for concern as to how to answer that question – it emphatically does not measure all of technological change. In the long term, we are interested in increases in output per unit of labour, resources and waiting (in the Austrian sense of the term)' (2000: 43).
  14. For example, what are identified as within-sector effects for the manufacturing sector may result from the reallocation of employment from less to more productive manufacturing sub-sectors, say from apparel to machinery.
  15. For weighted averages, weights are constructed as a country's GDP relative to average GDP (in constant US dollars) based on period annual averages for the full sample of countries within the 1984–1998 and 1999–2008 periods, with regional averages derived from the sum of weights within regions. GDP data are from IMF (2011). Note that data are missing for some countries in either the 1984–1998 or 1999–2008 period (See Table 4.4), and these differences in country samples between periods can affect regional averages, as in Table 4.2, as well as correlation coefficients, as in Table 4.3. To address this potential problem, all relevant analyses were done for the full sample of countries as well as the restricted sample of countries with data for both periods, and in no case did this substantively affect results. Throughout the chapter, therefore, only results with full samples of countries are shown. Results from restricted samples of countries are available from the authors on request.
  16. Country-level results are available from the authors on request.
  17. The focus is on samples of developed and developing countries rather than the sample of all countries, for the last includes the countries of Central and South-East Europe and the CIS for which there are a number of extreme values.
  18. Though the authors refer to their econometric analysis as a 'first pass through the data' (77), it is worth noting several concerns. First, the analysis is based on only 38 observations, and econometric results based such small samples are prone to being driven by outliers. Second, country-level analyses of the impact of employment regulations on employment or unemployment can come to opposite conclusions depending on whether they are driven by variation across countries, as in McMillan and Rodrik's study, or by variation over time. More specifically, regressions driven by variation across countries can provide evidence of an adverse impact while those driven by variation over time can provide evidence of a beneficial impact, even though all other factors are equivalent (See Heckman and Pagés-Serra (2000) and IMF (2003) for two examples of studies having such internally contradictory findings). Third, the authors use an employment rigidity index from the World Bank's Doing Business Indicators, which has been extensively critiqued (for example, Berg and Cazes (2007) and Lee, McCann and Torm (2008)).
  19. An additional difference is evident when comparing our within-sector calculation to McMillan and Rodrik's. While algebraic manipulation shows a similar central term of sectoral output growth minus sectoral employment

- growth, McMillan and Rodrik use the ratio of sectoral output (at  $t = 0$ ) to sectoral employment (at  $t = 1$ ) multiplied by the sectoral employment share (at  $t = 0$ ) as a weight in calculating the within-sector effect, whereas we use the sectoral output share (at  $t = 0$ ) as shown in Eq. 4.3. Further details are available from the authors on request.
20. Note that we use the same employment data as McMillan and Rodrik for Argentina, Columbia and Peru.
  21. Examples of beneficial declines in employment intensity include less child labour, more years of schooling, retirement, and – arguably – declines in women's labour force participation in earlier stages of economic development (Goldin 1994). Among labour force participants, labour productivity increases make possible fewer annual working hours through shorter work weeks and more vacation time.
  22. For further information, see: <<http://www.ilo.org/emppolicy/units/employment-intensive-investment-unit-empinvest/lang--en/index.htm>> (accessed 19 August 2013).

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# 5

## Creating Productive Capacities, Employment and Capabilities for Development: The Case of Infrastructure Investment

*Irmgard Nübler and Christoph Ernst*

[A] successful development process and a country's rising level of incomes ... should be based on superior knowledge, embodied in technologies and institutions, rather than simple command over resources ... and we need a view of development which is based on ... a vision of transformation in productive structure (and the development of social and technological capabilities that are both the causes and the consequences of such transformation).

(Chang 2010: 2)<sup>1</sup>

### **Introduction**

An emerging debate in development economics is shifting attention away from the quantity of growth towards productive transformation and the dynamics of the growth process. Structural and technological change are being discussed, along with social capabilities, as a source of productivity and job growth, poverty reduction and an improved standard of living. The experience of the successful catch-up countries in Asia confirms that these countries achieved high and sustained growth through a process of structural change, job creation and rapid technological learning. Experience also shows that government interventions promoted manufacturing and industrial development, exports, the upgrading of technologies and high learning effects through education, training and experience in industries. The Commission on Growth and Development (2008), therefore, concluded that if an economy is failing to diversify its production structure and exports or to generate

productive jobs in new industries, governments should look for ways to jump-start the process.

This chapter discusses infrastructure development as a policy area with high potential for governments to contribute to 'jump-starting' and supporting a dynamic process of catching up and economic development. The chapter applies a dynamic framework of catching up, in order to analyse the impact of infrastructure development policies and institutions on the economic development process. Recent research at the ILO has developed a framework of catching up that integrates evolutionary, structuralist and institutional perspectives of the economic development debate, and develops a knowledge-based concept of social capabilities (Nübler, forthcoming). This framework explains the dynamics of economic development as an evolutionary process of productive transformation in the economy. The accumulation of social capabilities is both the cause and consequence of increasingly complex and sophisticated productive transformation processes. A core message of this framework is that sustained and high-performing catch-up growth can only be achieved in an inter-related process of investment in productive capacities; learning and accumulation of social capabilities; and the creation of productive jobs, and higher wages and income.

The analysis shows that infrastructure development projects, the maintenance of infrastructure and the service provided by the infrastructure itself have the potential to contribute to the dynamics of economic development by promoting each of these three processes. Firstly, infrastructure creates productive capacities and supports productive transformation by providing services to the economy; by facilitating connectivity, access to markets and information; and by creating a demand for local resources, products and intermediate goods. Secondly, during the construction, maintenance and operation phases, public works and infrastructure projects enhance employment of workers, which contributes to income generation, poverty reduction and economic stability (Ernst and Berg 2009; ILO 2007; Islam 2006). Thirdly, infrastructure development contributes to learning and to the development of social capabilities at the level of domestic enterprises, the labour force and society. Social capabilities are a prerequisite for productive transformation, the diversification of the economy and the adoption of new technologies. The analysis derives government policies for the design, procurement, implementation and maintenance of infrastructure projects that promote a rapid and high-performing development and catch-up process.

This chapter first presents the dynamic model of economic development; this model provides the framework for analysing infrastructure policies as part of a development agenda. Secondly, it demonstrates the importance of infrastructure for economic development. Thirdly, it analyses policies and institutions, which enhance capability development in this sector. The final section concludes that the challenge facing governments is to plan, design and implement a development-oriented infrastructure investment agenda that creates employment and productive capacities, but that also creates opportunities for local workers, enterprises, communities and governments to learn and gain experience, which can be applied in a new economic context.

### **A dynamic framework of catching up**

This chapter discusses a framework to explain the dynamics of economic transformation and the forces shaping these dynamics. The framework integrates views of structural, evolutionary and institutional economics, as well as insights from economic history and studies of catching up. The dynamic framework has been constructed as part of a recent ILO research project and it draws on chapter 2 in Nübler (forthcoming).

### **An evolutionary perspective of catching up**

The process of catching up is portrayed as an evolutionary procedure of structural and technological change, with social capabilities, productive capacities and the participation of local workers and domestic firms as distinct forces driving the dynamics of the process. The catch-up framework distinguishes between, on the one hand, the global product and technology space, and, on the other, a country's productive capacities spaces (see Figure 5.1). The global space describes the technologies and products existing around the world, while productive capacities describe a country's existing portfolio of the technologies and products it masters. The gap between the global product space and the country-specific productive capacities defines the potential for borrowing and catching up through imitation and innovation (Abramovitz 1986).

Countries, therefore, have choices between different patterns of productive transformation, and these different patterns affect productivity growth, the quantity and quality of jobs generated, and learning opportunities. However, choices are restricted by the social capabilities that define the paths, boundaries and feasible patterns of productive transformation. Social capabilities define those technologies and products in the global space that a catch-up country can feasibly develop

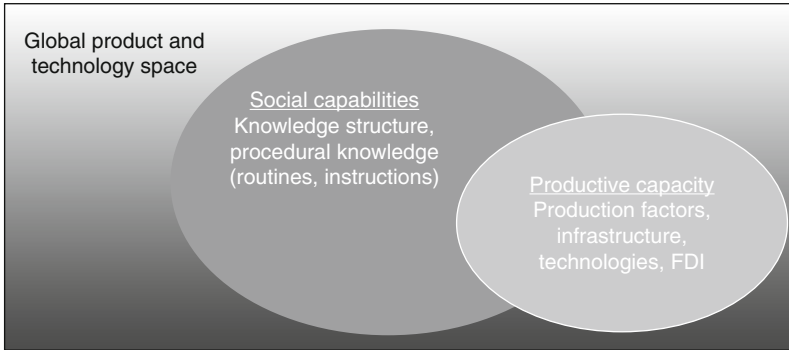


Figure 5.1 Global product and technology space, capabilities and capacities  
Source: Nübler (forthcoming).

(see Figure 5.1). Hence, countries, even those with similar factor endowments and comparative advantages, may have different social capabilities and, therefore, different feasible paths for catching up.

Moreover, the evolutionary approach considers knowledge as the essence of development and as the building blocks of social capabilities. The dynamic framework of catching up develops a knowledge-based concept of social capabilities, arguing that capabilities are embodied in collective forms of knowledge at the level of the society, enterprises and the labour force. They exist in the knowledge sphere, that is, in knowledge structures and in 'knowing how to do'. It is the knowledge base of a society that shapes the feasible patterns of productive transformation.

This reflects the observation of Penrose (1959) that 'economies show two different rhythms of evolution: the slow evolution of their capabilities and the faster expansion of their activities in the direction set by the former'.

### Enhancing productive capacities and productive transformation

Productive capacities are created through investment in production factors, in particular in capital, technologies, human capital and infrastructure. These factors determine comparative advantages, productivity, output and the existing production and export structure. Productive transformation describes the pattern of change in productive capacities in the economy. Productivity-enhancing transformation patterns are characterized by a shift of resources from low to high value-added products and sectors, the upgrade of the technology and infrastructure, and

the diversification of the production and export structures into more complex technologies and products.

Traditional models of technological catching up and product cycle approaches take a linear approach, assuming that developing countries catch up with a step-by-step approach, following the technological development path of advanced countries and by gradually imitating and producing the products in which industrial countries are losing their comparative advantages. This chapter looks at catching up as a dynamic process. Catching up can follow an incremental path of diversification, although countries may also leapfrog into high productivity sectors. Developing countries may innovate by adapting imported technologies to local conditions or by developing local technologies to respond to country-specific conditions. Such innovations not only fill gaps but may also give the industry a competitive advantage in the country-specific context, and may even allow them to forge ahead. This perspective of catching up suggests that countries have choices and that each country needs to develop its own path, pace and structure of catching up.

### **Accumulating social capabilities**

Social capabilities relate to the feasible products and technologies that a country may develop but which are not yet part of its production structure. Social capabilities shape economic dynamics through structural and process dimensions. Firstly, they determine the options for diversification and the products and technologies that a country might be able to imitate (production structure). This option space is determined by the specific knowledge structure in a society, that is, the mix, as well as the variety, diversity and complexity of the social knowledge base created through learning in social networks such as families and communities. It is also determined by the acquisition of technical, vocational and occupational knowledge through learning in industries, and through formal education in schools. A diverse and sophisticated knowledge structure allows enterprises to diversify into a wide range of new products and technologies since it enhances the probability of finding and recombining a complementary knowledge set for the production of new goods. In contrast, a highly specialized knowledge base limits the range of products that can be developed.

Secondly, capabilities define the competences of a country or an enterprise to translate options into investment, and thus into productive capacities. In other words, having accumulated the right knowledge sets in social groups is not enough; it needs collective competences to take advantage of options and to recombine knowledge sets in social groups

such as the labour force or the team of an enterprise for the production of new goods or services. For example, a firm may have recruited the correct occupational structure, but may still fail because it lacks the experience and organizational routines of how to establish a new product line.

Collective competences are embodied in 'smart' procedures that characterize institutions and routines. They relate to formal and informal institutions at the level of societies; to high-performing technological, managerial or coordination routines of enterprises; and to policy formulation and implementation procedures at the level of governments that are effective, avoid political captures and limit rent seeking.

These collective procedures become capabilities when they can be applied to new economic contexts. Firms learn to produce new products by applying procedures and routines they have acquired through previous experience to the new economic context (Nübler, forthcoming). The same is true for institutions at the social level. For example, societies that have gained experience and developed effective procedures in social dialogue in a particular context can apply these procedures to a new context, perhaps to reconcile diverging interests of workers and employers that may arise from structural transformation. Institutions effectively promoting learning to master new technologies in domestic enterprises are critical for economic diversification. Such procedures and institutions represent social competences and they have high value in a catch-up context.

Such procedural knowledge represents 'collective forms of tacit knowledge' or 'knowing how to do', and like all tacit knowledge forms they cannot be 'taught'. Each firm, society and government has to build up such competences in a process of experience, practicing and learning by doing.<sup>2</sup> This process of learning can be fostered and supported through close cooperation and by working side by side with experienced workers and firms. Joint ventures, apprenticeships and 'tandem agreements' between teams (e.g. of firms or city councils) have been shown to be important institutions supporting the transfer of tacit 'knowing how to do'.

It is important to note that the concept of capabilities developed within the context of the dynamic framework of catching up takes a 'productionist' perspective. The concept of capabilities, like the concept of human capital, contributes to explaining economic growth. These concepts, however, differ in that the concept of capital highlights the investment aspect and measures efficiency by rates of returns, while the concept of capabilities highlights the value of options and competences. Social capabilities are about knowledge and learning at the collective level. The value of diverse knowledge structures and of



competent routines tends to be reflected in market prices only to a limited extent and, therefore, markets tend to fail in creating dynamic social capabilities.

More precisely, it is important to distinguish this 'productionist' view of capabilities from the 'humanistic' view of development and capabilities developed by Sen (Chang 2010). Sen developed a concept of human capabilities to provide a new measure for development. While Sen defines human development as a process of enlarging people's choices, and expanding the capability of each individual to live the life he or she values, the 'productionist' view of development explains how capabilities at the level of firms and economies shape and determine productive transformation and growth.

### **Local participation for creating social capabilities**

The capability concept argues that productive transformation processes need to be inclusive, in order to sustain the development dynamics. The participation of the local workforce and domestic enterprises in the production and infrastructure development process not only enhances income and domestic demand, it is also central to the creation of human capital and social capabilities. The workplace, industries and infrastructure development sites are important places for providing learning opportunities. The pattern and quality of employment in a firm or in an economy shapes the nature and variety of knowledge that workers can acquire in the production process, and the emerging knowledge structure determines the options for further diversification and catching up. What people produce matters because it determines the set of general and technical knowledge they acquire. The deliberate creation of employment in more sophisticated industries creates learning opportunities, enriches the social knowledge base, increases the variety and diversity of technological knowledge, and diffuses competences for catching up broadly in the labour force.

In short, productive employment represents an objective of productive transformation; however, it is also considered instrumental in enhancing human capital, as well as social capabilities. Employment in increasingly complex economic activities enriches the social knowledge base, which enhances the options for diversification and develops collective competences to take advantage of these options.

The same is true for the development of collective procedures and competences in domestic firms. A team of local enterprises can develop effective technological and management routines only through a process of experience and gradual learning. This implies that effective

procedures are not created automatically; they cannot 'spill over' from foreign direct investment (FDI) to domestic firms and they cannot be 'imported' like technological designs or blueprints. Creating capabilities in domestic enterprises is crucial because it allows local enterprises to shift into new economic activities, to diversify and innovate – in short, to become drivers of the economic development process. This dynamic effect is lost if production in more sophisticated industries is performed primarily by foreign firms.

### **A framework to analyse the role of infrastructure development**

The dynamic catch-up framework is applied to analyse the role of infrastructure development projects to economic development process and its contribution to enhancing productive capacities in the economy, supporting the dynamics of diversification and structural transformation, creating employment and promoting the expansion of social capabilities in the labour force and in enterprises. The framework suggests infrastructure development policies and institutions to promote each of these processes. This relates to promoting technologies that support the achievement of employment, domestic learning and productivity goals, as well as providing incentives for the use of local resources and equipment to induce the creation of jobs, employment, local knowledge and appropriate technologies. In addition, they may provide incentives and support for the participation of domestic firms in infrastructure development projects, accelerating the learning of collective forms of tacit knowledge and the accumulation of social capabilities.

### **Infrastructure and economic development**

Infrastructure investment has a high potential for contributing to the triggering and sustaining of a dynamic growth and development process.<sup>3</sup> When properly designed and implemented, infrastructure has the potential to enhance productive capacities and create jobs and productive employment, as well as provide opportunities for firms to acquire or strengthen capabilities.

Traditionally, development economics has highlighted the relevance of infrastructure investments for economic growth and industrial development and for creating employment among the poor, as well as stabilizing income and smoothing consumption during economic crisis. This article elaborates on the important role of infrastructure development projects in enhancing social capabilities as a key driver for a dynamic development process.

**Enhancing productive capacities**

Infrastructure enhances productive capacities in the economy by providing important services such as transport, communication, electricity, water, energy, information, health care and training. The improved connectivity can trigger a process of higher trade and investment in the geographic area, which benefits from a better infrastructure and new business opportunities. As a result, firms are able to increase productivity, adopt improved technologies and diversify into new and higher value-added products. The competitiveness of the productive sectors depends on the quality and cost of the services provided by the infrastructure. Cheap and reliable energy and communication, low transportation costs and times, and fast internet connection are essential services that firms require if they are to become competitive in local and global markets. Relevant infrastructure also has the potential to increase competitiveness by reducing the costs of production and the delivery time for goods and services in many developing countries.

Table 5.1 illustrates the impact of the improvement of a road in Kenya<sup>4</sup> on the socio-economic development of the benefitting region.

*Table 5.1* Impact of an improved road at the local level in Kenya

<b>Category</b>	<b>Impacts and benefits</b>
<b>Traffic</b>	Number of bike taxis on the road has increased Time taken to reach the town has become shorter The improved road enabled the motorcyclists to increase the fuel mileage The fee of the bike taxis has become cheap
<b>Agrobusiness</b>	The frequency of the visits of the buyers has increased The farmers become able to arrive at the market earlier in the morning Farmers' planting areas have increased, since most products can be transported and sold Extension officers have visited the village more frequently
<b>Group activities</b>	Number of group members has increased Group became more cohesive and started new self-development projects, e.g. new crops, fish pond and nursery Group started to transfer the Do-nou technology to neighbours
<b>Life</b>	Patients could be transported to hospital in time New kindergarten has been built Some people decided to commute to the nearby town

*Source:* Inoue et al. 2011: 125.

First and foremost, transport has become faster and cheaper, which has triggered economic and social benefits. On the economic side, it has improved the business environment for the dominating agrobusiness. It has facilitated business and technical contacts, as well as group activities and access to markets, and has also led to rising investment and an extension of cultivated areas, thereby increasing productivity and providing the farmers with a higher income. On the social side, better connectivity has led to improvements in education and health. Table 5.1 illustrates the long-term effect of the availability of a new infrastructure asset: a better road leading to better transport and communication services, improved access to information, greater knowledge and better technology, the extension of services and superior health and education services.

Various similar research studies, primarily driven by the development banks, have been undertaken in order to demonstrate the impact that the creation of a new asset, a new or improved infrastructure, has on the economy (market access, trade, investment, productivity), the social life (education, health) and the environment.<sup>5</sup> These studies show, for example, that trade, investment and thus local production, increase through better infrastructure, as well as through its impact on education and health.

### **Supporting diversification and sectoral transformation**

While roads, telephone lines, electricity grids and so on create new physical capacity and provide services to the economy, the construction of this infrastructure itself has the potential to contribute to the achievement of a more diversified economy and structural transformation, as it is highly connected to other economic sectors. Infrastructure construction can create many connections and linkages within the economy throughout the supply and distribution chains, thus supporting diversification by creating demand for domestic inputs and services. Investment in infrastructure spreads over to many other productive activities, from carpenters who have to construct doors, tables and chairs for school buildings, to the cement industry or to transport services carrying material to the workplace. These effects do, however, need to be promoted through policies and institutions.

A Dynamic Social Accounting Matrix (DySAM) provides a methodology for evaluating the potential impact of such infrastructure construction projects on other sectors and throughout the economy in general over time.<sup>6</sup> It is an accounting framework, where major socio-economic datasets of a country are brought together in a consistent way reflecting



table demonstrates that road construction has the highest backward linkages<sup>8</sup> among the Indonesian sectors, followed by food processing and simple services. In general, the infrastructure sector can be considered a relatively well integrated sector within the national economy.<sup>9</sup> Infrastructure is known as a good puller, in times of crisis, and it is also good for general development because of its strong linkages with the rest of the economy. This sector needs stones, cement, steel, concrete, energy, trade services, as well as food for the workers. These products are also mostly produced within the country and so there are no leakages from the economy in the form of intermediary imports from other countries.<sup>10</sup>

### **Creating direct and indirect employment effects**

Infrastructure investments are an opportunity to create jobs and productive employment and thus have important multiplier effects through a high direct, indirect, but also induced employment effect. Employment represents a critical channel through which poverty is alleviated and income distribution is affected. The chosen technology, and the rules imposed, will shape the process of implementation, the employment intensity and the structure of skilled versus unskilled workers employed directly in the infrastructure project and indirectly in activities related to the infrastructure project through its integration with the rest of the economy. An 'induced' effect can also be observed through, for example, related higher income at the locality of infrastructure projects and consequently higher consumption, or higher tax revenue. Economic theories highlight the importance of public policies and fiscal stimulus during an economic crisis to stabilize private income, smooth consumption and stimulate economic demand. Traditionally, infrastructure investment has been a key area of fiscal stimulus, which governments have successfully applied. The government of Indonesia reacted swiftly to the anticipated impact of the global financial crisis by announcing a fiscal stimulus package worth 1.4 per cent of GDP (73.3 billion Indonesian rupiah (IDR)). The intention was that the package would help maintain the development path and cushion the impact of the crisis by boosting consumption and easing the financial distress of companies. The job-creation outcomes of the spending were of key concern to policy-makers. The provision of tax cuts, subsidies and labour-intensive infrastructure spending were the major measures taken.

According to a DySAM analysis estimating the economic and employment implications of the spending, it was found that the fiscal stimulus created a total of 1.2 million additional jobs in 2009. Further analysis of the various components of the package (tax cuts, subsidies

and infrastructure investment) reveals differences in the impact of the spending on target groups and sectors of the economy. For example, close to 90 per cent of the infrastructure package (IDR10.8 billion) was spent on labour-intensive infrastructure (roads) and this generated approximately 293,000 full-time equivalent jobs. Put into perspective, this spending amounted to only 0.19 per cent of GDP and generated about 1.6 per cent of GDP growth; so it was highly effective.

Some 114,000 jobs have been created directly and indirectly throughout the production network in the production sector, whereas 173,000 jobs have been created through its impact on income, demand, consumption and tax collection (the 'induced effect'). The high level of induced effect also shows the importance of infrastructure investment for low-income groups. A dominant share of the direct and indirect jobs went to rural workers (63 per cent) and mostly to male workers (97 per cent), as this sector is generally – and even more so in Indonesia for cultural reasons – dominated by a male labour force. The model's level of disaggregation also revealed that the infrastructure spending was more effective at targeting low-income workers and creating employment than other elements of the fiscal stimulus instruments that relied on direct interventions to households.

Overall, the infrastructure investment component of the Fiscal Stimulus Package (FSP) was very effective as the sector was highly integrated with the rest of the economy and even better targeted towards low-income groups than the other FSP measures. It was effective not only in sustaining economic growth, but also in sustaining a development process in which infrastructure as a highly integrated sector within the national economy played a key role for economic growth and as a provider of employment.<sup>11</sup>

### **Enhancing social capabilities**

In order to create a dynamic catch-up process, countries have to develop social capabilities. They need to develop a diverse and complex knowledge structure to enhance options for diversification, and they need to develop 'competent' institutions and routines that can be transferred to new economic contexts, thus enabling countries to take advantage of their options. Infrastructure development has the potential to create capabilities among workers and domestic firms.

By gaining broad experience in the infrastructure development process, developing procedures for the effective performance of tasks and accumulating a broad and diverse range of knowledge, workers, firms, governments and other organizations can apply this experience in new

contexts. On the one hand, the experience can be used to design, build and maintain further infrastructure projects and improve productive capacities and infrastructure services in the economy. On the other hand, to the extent that such experiences can also be transferred to the production of new goods and services, the infrastructure construction projects enhance social capabilities for the diversification of the production structure.

A recent ILO tracing study on contractors (Beusch 2010) allows conclusions to be drawn on the managerial, technical and social capabilities created through training, experience and learning in infrastructure projects.<sup>12</sup> The aim of the study was to evaluate the impact of training programmes conducted in the field of local infrastructure development on the performance of local contractors in Ghana, Lesotho, Kenya, Madagascar, South Africa, the United Republic of Tanzania, Uganda and Zambia in Africa; Cambodia and Indonesia (Aceh and Nias) in Asia; and Nicaragua in Latin America. The study traced amongst other issues the business activities of trained local contractors after the labour-based infrastructure programme had ended. In Zambia, about 25 per cent of trained contractors are still active in labour-based works and most of them have managed to diversify and survive in other areas of construction. Some smaller ones have become medium-sized, or even large, contractors. The successful contractors applied labour-based methods on activities previously implemented by equipment and also diversified their activities into infrastructure projects using equipment-based methods. For reasons of competitiveness and sustainability, they opted for diversity.

In Ghana and Cambodia, some contractors shifted to equipment-based operations, which allowed them to achieve considerably higher turnovers. In the Analamanga region of Madagascar (see Rakotoniaina 2009), many contractors that had been working under a public work programme diversified into new activities. In order to avoid periods without work, the SMEs have diversified their activities: 33 per cent in buildings, 32.3 per cent in telecommunications activities, 15.6 per cent in roads, 12 per cent in irrigation, 5.4 per cent in fencing, 1.4 per cent in landscaping, 0.2 per cent in water supply and 0.1 per cent in Madarail (railway network). The analysis confirms that the training and knowledge acquired during the infrastructure project has created capabilities at the level of contractors and their staff.

The major challenges involve the lack of access to financing, cumbersome tender and contract procedures, and corruption. Some challenges arise from the contractors themselves. The lack of working capital and



the incapacity to pay for complementary training represent serious obstacles. Overall, there are some key lessons to be learned from this study. Ineffective governance and the lack of available capital at the local level are key challenges for small, local companies attempting to translate capabilities into productive capacities in different sectors and technologies.

Recent large-scale infrastructure projects in some African countries provide interesting examples of rules and governance procedures applied by governments, which create capacities, but limited domestic capabilities. These cases relate to the awarding of infrastructure projects to foreign firms, mainly from China. The results of studies analysing the impact of Chinese infrastructure development in African countries have been mixed, depending on the focus of their analysis. Alden concludes that the reconstruction of hospitals, schools and other essential public sector buildings, such as railways and roads, were crucial for countries such as Angola, Ethiopia and Sudan, 'which had been accustomed to crumbling transport infrastructure for decades' (Alden 2007: 4).

Conversely, when it comes to learning opportunities and the creation of social capabilities, the situation is different. Evidence shows that the rate of local participation in the infrastructure projects, specifically the employment of local workers and domestic firms, was low. Corkin (2009)<sup>13</sup> found that only a few Chinese companies were participating in joint ventures with Angolan companies that provided opportunities for the transfer of knowledge, technologies and management, and technical procedures. A similar picture emerges with employment. When the China Railway 20 Bureau Group began the project, 300 Angolans and 300 Chinese were employed (Railway Gazette 2010). However, Chinese labour gradually began to outnumber the Angolan technicians, engineers and construction workers. This practice was defended by the Chinese on the ground who argued that hiring Chinese workers and replacing Angolan workers was more beneficial for 'cost, productivity and cultural affinity' (Alden and Davis 2006: 94). Additionally, the skill levels and expertise of Angolan employees were regarded as 'substandard' (Centre for Chinese Studies 2006: 28). In particular, the machines and equipment imported from China gave those Chinese workers who had been trained to operate these machines an advantage. Angolan workers were either employed on a short-term basis or not at all. This tends to suggest that limited capabilities have been created in the domestic labour force and the domestic firms.

Studies on Algeria paint a similar picture. Infrastructure projects were planned and implemented by Chinese firms, and these imported most

of their equipment and material from China. Large Chinese construction companies are dominating the construction market; from airports to highways, from petroleum drilling to hospitals.<sup>14</sup> Even the workforce was largely imported from China. Chinese workers at all levels undertook the planning and construction tasks.<sup>15</sup> These investments contributed to the creation of infrastructure services and new productive capacities in Algeria; however, they have left the country with very limited social capability development.

In other words, studies evaluating the services and capacities provided through these projects identify positive effects, while those studies assessing the creation of social capabilities find a very limited impact. Such capabilities are, however, critical in developing countries as they allow local workers and firms to maintain the infrastructure even when the Chinese workers and firms have left. They also allow the development and construction of similar infrastructure projects, thereby gaining further experience in addition to the new infrastructure services.

### **Getting the policy procedures right**

Governments need to develop capabilities and good governance procedures, which they then apply in the design, procurement, implementation and maintenance of infrastructure projects.

This implies that the process of infrastructure development (planning, design and implementation) needs be linked to a learning process and the development of effective governance institutions. Governments also need to develop transparent and effective rules, as well as 'smart' governance and public management procedures that effectively enforce rules and demonstrate high performance. National and local governments need to learn to apply procedures that help the country to achieve the multiple development goals, and also procedures that follow principles such as decentralization, subsidiarity of responsibilities, social dialogue and collective bargaining institutions leading to the development of social capabilities.

An interesting example of 'smart' governance procedures comes from South Africa, where a fiscal incentive scheme has been used to promote labour-based methods of construction. This incentive is aimed at ensuring that the job-creation targets set by the government in infrastructure projects are respected and thus create, in the long run, an institutional culture that will automatically include employment considerations in the government's infrastructure investment decisions. This scheme was introduced to tackle divergent results that were observed in the fulfilment of

employment targets among public entities. The incentive system works as follows: a public body receives an incentive amount corresponding to the number of full-time equivalent job opportunities created above a previously fixed threshold established for the type of infrastructure implemented. The eligibility and minimum threshold/target is set by the National Department of Public Works. In this process, past performance is compared to a base target and then a final performance target is established. Though this is a recent experience, some lessons can be learned from it. Good communication with all stakeholders about the incentives schemes (framework, guidelines, process) is crucial. Engineering technical skills are low, especially at the municipal level, and require special training. Often, reporting on project implementation is rather low-key and this leads to rather low usage of the incentive scheme. It has been observed that public entities that offer longer duration for the jobs created (e.g. KwaZulu-Natal Department of Transport) are more able to draw on the incentive scheme (Ariyo 2011). Overall, the incentive scheme is an interesting illustration of how to bring about significant change in the collective behaviour of government institutions in a planned direction, thus improving the effectiveness of governance.

### **The role of policies and institutions in infrastructure development**

Policy-makers aiming at promoting productive capacities, employment and social capabilities through infrastructure development face the challenge of designing 'smart' institutions and applying policies. Governments need to choose infrastructure projects and shape, regulate and guide the infrastructure development process in accordance with their development strategy and related goals, including the country's ambitions and aspirations; this involves: the provision of public goods, social and environmental objectives, and the accumulation of capital and capacity; the creation of employment; productivity growth and the accumulation of capabilities and learning. Infrastructure development should, therefore, be considered as part of an industrial policy agenda and a national learning strategy.

This section explores different policies and institutional options that have been applied successfully in infrastructure projects in various countries and have thus contributed to economic development. This chapter highlights, in particular, those policies and institutions that play a central role in the development of capabilities. This shifts

attention to measures that enrich the knowledge structures for high options and build routines for competences.

### **The choice of technology**

The choice of technologies in infrastructure construction is critical to the impact of the project on multiple development objectives. Governments need to select those technologies that contribute best to achieving development goals. Technology choices are, therefore, strategic decisions and different economic models suggest different criteria for the selection of technologies. The economic growth models suggest choosing efficient technologies combining given resources in a way that maximizes productivity and productive capacity.<sup>16</sup> Pro-poor growth models and the Decent Work approach argue that employment-intensive technologies should be applied, while the appropriate technology approach suggests selecting technologies that take into account local resource endowment and local knowledge systems such as the culture and traditional knowledge.

From a dynamic perspective, technologies that are learning-intensive and involve a large number of workers should be given preference. Dahlman et al. (1987) argue that the nature of technologies applied in enterprises determines the learning opportunities, and that some technologies imply more learning, accumulation of skills and competences than others. The value of investing in a particular technology needs to be measured against the learning options and the potential to create dynamic learning effects (Dahlman et al. 1987: 762). The choice of technologies is, therefore, also a choice between static efficiency (selecting those technologies that result in an optimal allocation of resources today) and the dynamic effects and options for productive transformation. The latter is created through the experience enterprises and individuals have acquired with specific technologies. Such experience would enable them to move on to new activities, or could be used for modifying technology to increase productivity.

This implies trade-offs, and requires political choices and setting priorities between the various goals of efficiency and productive capacities, employment and environmental friendliness, as well as enhancing capabilities to boost productivity transformation.

Cold Bitumen Technology provides an example from an infrastructure project in South Africa in which the development of a new technology responded to the local conditions and resource endowment and is, therefore, considered as an appropriate technology. In addition, this technology is more labour-intensive than alternative

technologies and contributes to employment and poverty reduction. It also upgrades the social knowledge base with important local knowledge elements, which therefore expands options for the development of new infrastructure.

Many countries, however, have deliberately applied policies and developed rules and regulations to adopt labour-based or employment intensive methods for constructing infrastructure. In the Philippines, the use of labour-based methods has been introduced into the national legal framework. The Batas Pambansa Republic Act 132, for example, required the application of labour-based techniques whenever technically feasible. Two other conditions are that the cost for its use should not exceed the best alternative option by more than 10 per cent and that the duration should not exceed the best alternative option by more than 50 per cent. Additionally, an Executive Order (EO 94 from April 1999) and a Department Order (183) also encourage the promotion of labour-based methods, which were then incorporated in the current national Medium-Term Development Plan. The government of Tanzania took similar steps to promote employment creation in infrastructure projects. It even created a Labour-Based Technology Unit (LBTU) within the Ministry of Public Works whose task has been to enhance and strengthen this technique in public programmes and investments.

### **Support local knowledge and appropriate technologies**

Measures to promote the use of domestic resources and inputs in infrastructure projects contribute to the development of local knowledge on how to adjust 'ways of doing things' and to use these resources effectively in the construction of infrastructure. Such knowledge may be created during the construction phase through a process of trial and error where local firms develop idiosyncratic knowledge by solving problems. It may also be the result of research and development (R&D) and exploring the properties of local material, or of cooperation between research institutes and the private enterprises implementing the infrastructure project.

Local knowledge is tradable within the specific context. Knowledge on the properties of local inputs and on how to adapt the procedures and other knowledge elements for effective infrastructure technologies can be applied in the construction of other infrastructure or in the production of goods and services. The high tradability and transferability of such new knowledge reflects social capabilities.

Government policies need to be combined with measures that help to adapt technologies and develop the local knowledge components, in order to provide possibilities for the use of local material, resources and

equipment in infrastructure projects. The government plays a role in supporting R&D directly through public or sponsored private research centres and through the effective divulgence of these methods to the contractors involved in infrastructure investment. This was the case in South Africa, where the government supported the development of Cold Bitumen technology. Governments may also develop institutions that create trust and cooperation between research institutes and the production sector as well as promoting joint research projects and cooperation of firms within industrial clusters.

In short, policies and institutions that promote the development and adaptation of technologies while using local inputs and the development of local knowledge elements enhance social capabilities; consequently, they increase the options for productive transformation. These effects are supported by strong backward linkages throughout the domestic economy not only through the use of local material in infrastructure development but also through the creation of additional income at the local level (income-induced effect). In addition, infrastructure needs maintenance on a regular and frequent basis and local inputs are more readily available than imported goods. They imply low transport costs and lower related carbon emissions, and they avoid possible import-related leakages.

Ghana provides an example for the development of local knowledge and technologies that make effective use of local materials and equipment, and create additional employment opportunities at different skills levels. As a result of intensive research by the Council for Scientific and Industrial Research (CSIR) Institute of Ghana, burnt clay bricks have been used as an alternative to conventional road pavement materials for the construction of light pavements. Clay can be found in all regions of Ghana, whereas its alternative, gravel, is considerably scarcer. It has also proved to be cost effective, to respect the environment and to be sound from an engineering point of view. Brick construction is mostly used for roads with light traffic. Within the production chain, workers are also engaged in the production of bricks, which means that there are employment opportunities for both unskilled and semi-skilled workers and that about one-third of production costs are allocated to labour. As a result, more than 34 per cent of the production costs are allocated to labour. There are even supervisory assignments for skilled workers, implying significant training, which is of particular importance to a country with a high unemployment rate among university graduates (Debrah 2011).

An additional argument is that locally-produced intermediate goods and equipment contain substantial local knowledge, for example on

the properties of the material, and the weather and climate conditions. These local bodies of knowledge and experience can be transferred to new economic activities and to new circumstances. An illustrative example of this is the use and development of locally-produced equipment in Zimbabwe, which was initiated through the establishment of a rural road maintenance system by the District Development Fund in the 1980s. This equipment is still being produced and used in the country.

The basic equipment is a very common agricultural tractor, which has been extended to become a tractor-drawn, towed grader. It has a relatively large backup service compared to specialized heavy equipment, such as motorized graders, and is cheaper to own, operate and repair; it is also easier to maintain and operate. Last but not least, since 1951, not only have all of the tractor-towed items been locally manufactured within Zimbabwe but all current model spares continue to be compatible with the earliest machines. The tractor can be used for dry and wet season activities. It is thus fully utilized throughout the year and the equipment parts required are limited. Another use of the tractor, combined with the trailer, is to transport labour and materials for road maintenance. Briefly, tractor technology is supposed to be part of a natural progression from simple labour operations to sophisticated heavy equipment roadworks, in particular with regard to capital requirements (Gongera and Petts 2003; Petts 1997).

### **Mobilize and develop knowledge and routines in domestic firms**

The dynamic model of catching up shows that domestic firms play a central role in economic transformation. By developing capabilities, they also develop the potential to diversify into new products and services. The challenge of policies and institutions in infrastructure development is, therefore, to promote participation of domestic firms and contractors, and to provide the enterprise team with opportunities for learning and for developing effective organizational, technological and management routines during the infrastructure development process.

Procurement policies are an effective tool to mobilize and engage domestic firms and small contractors, and open up opportunities for gaining experience, learning and building capabilities in implementing infrastructure projects. Public procurement is often a major challenge for smaller companies wishing to participate in infrastructure investments projects as it often requires conditions that are difficult if not impossible to fulfil. Consequently, procurement policies need to be designed in such a way as to ensure that small enterprises find it easy

to gain access to the bidding process for infrastructure projects. In addition, public procurement provides an entry point for governments to impose conditions that also enforce the learning process.

South Africa has established the so-called 'Targeted Procurement' system and established public procurement rules that provide criteria for access of small firms and disadvantaged groups to the bidding process. This system is considered to be a success since government institutions were highly competent and effective in the implementation of procurement rules (Addo-Abedi 2011), and there was a strong interest among the target groups to grasp the opportunity.

According to the rules, smaller enterprises with contracts below a financial threshold can have direct access to the bidding process provided that they belong to vulnerable groups, pre-defined as 'targeted workers. They can participate even though they do not fulfil all the requirements related to available resources, capacities or expertise. Above the predetermined thresholds (which is generally an advance of 10 per cent of the total spending) bidders compete on economic (e.g. costs related to the execution) and social targets, such as the number of workers employed or the wage share in total costs. Incentives are provided to train the labour force. There is an extra bonus if workers also benefit from a training programme to upgrade or develop their technical skills.

This procurement system guarantees the achievement of social benefits at a low cost for the public sector. In this process, the contractor has the flexibility to decide on how to use the targeted workers in the production process, instead of following strict prescriptions by the public sector on technology choice, and also the way in which their workers would be involved.

Another interesting aspect is that large companies may have the obligation to sub-contract to smaller firms for the implementation of major infrastructure projects. This clause enhances business linkages and the development of smaller firms. There are no implicit rules governing the transfer of technology from larger to smaller companies, although in order to be cost-effective, these transfers are often in the interest of large firms, which then set their standards to smaller firms, share their knowledge and train them on new technologies.

The competences of governments and the procedures they have developed in 'doing business' determine the contractors' ability to take full advantage of their options. An interesting study from Kenya shows that contractors have developed significant capabilities to build infrastructure, but the poor performance of governments has limited the ability of contractors to exploit opportunities. A recent tracer study



has been carried out by Omari in 2008, in order to assess the impact of capacity-building projects in the context of small-scale, labour-based road construction. The five contractors involved in the projects had established and registered their respective companies within the last ten years for road construction and maintenance works. Four of the companies had developed capabilities to participate in the development of new infrastructure projects. They reported growth in annual turnover, the creation of gainful employment and the successful completion of awarded contracts. Three contractors experienced substantial growth in hand-tool holding and staffing, one of the contractors indicated minimal growth, while another had closed down the business. In short, four out of five companies were able to transfer the knowledge they had created to the development of new infrastructure projects. However, the competences of the government to allow companies to take full advantage of their options were limited. The following major obstacles were identified:

- limited access to bank finance
- long delays in receiving payments for work accomplished
- cumbersome tender procedures
- biased and corrupted contract award practices.

In summary, most obstacles are related to the limited competences of governments which are reflected in their practices and procedures.

### **Promote direct interaction to accelerate the learning process**

Competences of workers and firms are embodied in procedures that they have acquired through experience. Procedures are tacit forms of knowledge that cannot be articulated or codified. They can be acquired only through a gradual and incremental process of observation, imitation and practice. This learning process is accelerated by direct interaction between an expert and the learner, or between the high-performing, competent enterprise and the learning organization. By working side by side, workers learn from observing the performance of the skilled workers, and by imitating and practicing, and receiving feedback from the expert, they improve performance and meet occupational standards. Apprenticeship training provides such effective learning arrangements where the apprentice works alongside a master craftsman or an expert, which builds workers' occupational competences. Infrastructure projects provide excellent opportunities for such apprenticeship arrangements.

The same is true for firms. Joint ventures and partnerships between foreign and domestic firms are an important way to transfer technical, organizational and management routines effectively. History gives us some interesting examples of infrastructure constructing projects providing partnership arrangements between foreign subcontractors and consulting firms on the one hand, and domestic firms on the other hand. For example, British engineering firms played a decisive role in the diffusion of railway transport technologies. There was a rapid transfer of this technology from British to local firms in what is today the industrialized world. Another example involves the legendary contractor Weetman Pearson, a British firm, which, at the turn of the twentieth century, undertook the construction of a series of major tunnels in the United States – the Hudson River tunnel, the Blackwell tunnel and the East River tunnels – transferring the technologies to domestic firms through repeated cooperation.

China is another prominent example. Stage one of its infrastructure development (1954–1977) was marked by the strong use of labour-substituting capital because of inadequate financial resources, but with a positive learning effect for the labour force. Since 1978, and through the opening up of the economy, a modern construction sector emerged with the help of foreign financing and technical expertise. These international companies played a ‘catalytic role in China’s process of learning, reforming and innovating’ (IPRCC 2011: 15). China has thus acquired a deeper knowledge of the relevant aspects of project management and financing, international competitive bidding rules, procurement regulations and of social and environmental evaluations without losing national ownership of the process. Chinese companies are now in the driver’s seat for further infrastructure development (e.g. expressways or rural highways) and have even started to compete internationally outside China, in particular in Africa.

A study by Zahlan (1991) analysing the transfer of technology from international consulting and contracting firms to companies in Arab countries demonstrates that foreign consulting firms have played a crucial role in designing the overwhelming majority of large-scale Arab infrastructure projects. It shows that about one-third of them had a marked impact on local contracting and transferred technologies from foreign consulting firms to local contractors (Zahlan 1991: 87). This study concludes that ‘probably the most powerful method for the transfer of complex technology is through private joint ventures and subcontracting’ (ibid.: 88). Zahlan discusses several conditions for the successful transfer of technologies. A key condition is that ‘the

speed and efficiency of a process of technology transfer is contingent on national technology policies'. In addition, it is important that the two parties have agreed to the relationship and have established the modalities for cost-effective transfers. It is also important that consultants have the capacity to identify and respond to the 'social, cultural and economic needs of the client' (Zahlan 1991: 67, 68). Furthermore, the flow of technologies between firms 'depends on the capacity of the parties in the joint-venture to manage the process efficiently and on the eagerness and capacity of the acceptor to acquire the know-how'. Zahlan (1984) stresses the importance of system behaviour as the most crucial factor of successful growth.

In other words, the foreign firm must be willing to share the knowledge, demonstrate the procedures and provide feedback to the local firm, while the domestic firm must be committed to observe, imitate, practice and improve upon the feedback provided by the foreign firm. Zahlan argues that the incentives for domestic firms to enter such a learning process and acquire the relevant procedural knowledge depend on the transferability of such technologies to other infrastructure projects: 'if the firm has no opportunity to apply the technology again, the technology system ... is taken apart and the manpower redeployed to perform other tasks' (Zahlan 1991: 81). This means that the individual workers acquire knowledge and competences, which they may transfer to other jobs. However, the domestic firm (or the team) lacks motivation to build up the shared procedures at the collective level – that is, develop collective technological routines that could be transferred to the development of similar infrastructure projects. The situation is different with management procedures that can be applied to many projects with some modifications. Therefore, the study concludes that firms are much more motivated to acquire such collective competences when they have options to transfer them to similar activities and projects (Zahlan 1991: 81).

## **Conclusion**

This chapter has applied a dynamic framework of economic development to the analysis of infrastructure development projects. The framework describes economic development as an evolutionary process of enhancing social capabilities and investing in productive capacities. Social capabilities shape the options for productive transformation and the competences to take advantage of the options. Productive employment and the participation of local enterprises in this process

are instrumental in creating the knowledge and competences that shape social capabilities. A high-performing growth and transformation process is achieved by an interrelated process of developing social capabilities, productive transformation, productive jobs, employment and domestic enterprises. Governments play an important role in shaping and accelerating this process.

The analysis of infrastructure development projects and empirical evidence from developing countries shows the potential of infrastructure projects to trigger and facilitate such a dynamic development process. Firstly, investment in infrastructure improves the capacity of developing countries to provide transport, energy, water supply, communication and other services that increase connectivity, productivity and thus production. Secondly, investment in infrastructure contributes to the expansion of related industries and domestic production as this sector generally has high forward and backward linkages into the economy, and is part of a value chain net.

Thirdly, infrastructure investment, financed by the public sector and implemented largely through private companies, plays an important role as an employment provider, directly or indirectly, through the supplier network, which could be enhanced further by the choice of technology and the appropriate targeting of specific groups of workers.

Fourthly, infrastructure investments are an important means to build social capabilities. When designed as part of a learning and dynamic development strategy, such projects can provide substantial learning opportunities for workers, local enterprises and governments in planning, management, construction and maintenance, and in using local knowledge and technologies. This goes hand in hand with more effective governance structures at the central and local level, and also with possible learning effects for other socio-economic activities.

These domestic capabilities shape the paths for further productive transformation. They provide options for firms to build similar infrastructure projects and to diversify into new economic activities by transferring to the new economic context the knowledge, routines and technological competences accumulated during the infrastructure development. In addition, the labour force employed in infrastructure projects gains new experience, which enriches the social knowledge base and enhances the options for productive transformation.

We argue that in a dynamic development context, it is at least as important to possess the capabilities to produce infrastructure as it is to possess the infrastructure itself. This challenges research to further

explore and better understand the nexus between infrastructure development, the accumulation of capabilities and productive transformation. This chapter concludes that infrastructure development policies contribute to economic development by selecting relevant infrastructure projects, establishing and implementing tendering and procurement rules, and providing technology choices that contribute to achieving employment objectives, productive transformation and capability development goals.

## Notes

1. Chang, H.-J. (2010: 2,5) 'Hamlet without the Prince of Denmark: How Development has Disappeared from Today's "Development" Discourse', in S. Rafi Khan and J. Christiansen, *Towards New Developmentalism: Markets as Means*.
2. For example, we cannot learn to ride a bicycle simply by reading a book on the theory of cycling. The competence to ride a bicycle can only be acquired through practice and experience.
3. 'By raising labour productivity and lowering production and transaction costs, economic infrastructure – transport, energy, information and communication technology, and drinking water, sanitation and irrigation – enhances economic activity and so contributes to growth, which is essential for poverty reduction' (OECD 2006): 10.
4. The road was improved with the help of an innovative Japanese 'Do-Nou' technology for spot improvement for the maintenance of rural roads, which makes extensive use of local material and is labour-intensive. It illustrates the successful transfer of an appropriate technology to small local contractors by a foreign provider who developed it specifically for a developing country context.
5. Some examples include Socio-Economic Impact Study on the Rural Roads Component of the Road Sector Support Programme in Benin, Ministry of Foreign Affairs and DANIDA, September 2006 or Impact Evaluation of Rural Roads and Application to Rural Transport Project (RTPI) in Viet Nam, by Dominique van de Walle, World Bank (2006).
6. Contrary to a static SAM, a DySAM provides not only a snapshot of the economy in one point of time but also a time series of DySAM generated thus allowing time-series analysis. For more information on DySAM methodology, see Alarcón et al. (2011).
7. The Indonesian DySAM 2010 is a derived data system of official national data, national accounts data, flows of fund, budget, input-output/supply-use tables, household survey (SUSENAS) and labour force survey (SAKERNAS) data.
8. Labour-intensive road construction has the highest backward linkage. As it is basically capital formation, forward linkages in construction are very low (repair and maintenance).
9. If we look at weighted (weighted to its contribution to national output) backward linkages, road construction has one of the highest backward linkages while the other construction sectors have much more modest linkages.

This can be explained by the fact that road construction has been most widely used, but it also shows the high potential economic impact of other construction sectors.

10. For example, imported goods, which are not produced at the national level and imply only very limited service activities. The production 'leaks' from the national economy.
11. Alarcón et al. (2011); Ernst and Chatani (2011); and the authors' recent calculation using the fully expanded DySAM 2010.
12. The majority of these programmes were labour-based rural road projects.
13. Corkin, L. (2009) 'Angola's Relations with China in the Context of the Economic Crisis', in *China's Involvement in Angola: Mutually beneficial commercial pragmatism?* Stellenbosch University: The Centre for Chinese Studies.
14. ('*Les entreprises chinoises ont raflé 720 millions de dollars en Algérie*'), available at: [www.algerie-dz.com](http://www.algerie-dz.com) (accessed 13 March 2013).
15. See <http://www.algerie-dz.com/article1973.html> (accessed 30 September 2012).
16. The aim of economic growth models is to choose a technology that provides the highest total factor productivity, a terminology, which is rather unclear, or a global technological border, also a rather diffuse notion.

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# 6

## Investing in People: Extending Social Security through National Social Protection Floors

*Christina Behrendt*

### **Introduction<sup>1</sup>**

Social protection is increasingly recognized as an essential building block for sustainable development policies that promote inclusive growth. Social protection policies contribute to supporting both economic and social development, and are an essential element of a rights-based approach to development. It is now better understood that social protection policies are not merely a vehicle for the transfer of income in cash and in kind aiming at smoothing consumption, but also an investment in people, which can enhance their capabilities and enable them to engage in productive employment in a much broader way.

In recent years, many developing countries have vigorously rebuffed the myth ‘grow first – distribute later’ by implementing social protection programmes that are now widely considered to be cornerstones of their economic and social development strategies. The experience of countries that have recently stepped up their investments in social protection, such as Brazil, Cape Verde, China and others, demonstrates that social protection can have marked spillover effects on economic growth and job creation, in addition to contributing to the prevention and reduction of poverty and vulnerability, as well as to broader social development objectives. The global crisis has also demonstrated that social protection systems can play a key role in weathering the repercussions of major crises, and in supporting structural transformations of the economy and the labour market.

Reflecting this shift of development policy paradigms, a broad international consensus has emerged around the concept of national SPFs, which constitute the first level of national social protection systems,

ensuring access to at least a basic level of social protection to all. The recently adopted Social Protection Floors Recommendation, 2012 (No. 202) provides guidance to the ILO's 185 member States in building and maintaining such SPFs and social protection systems.<sup>2</sup> This Recommendation is the first international legal instrument that explicitly recognizes the triple role of social security as a universal human right, and an economic and social necessity.

This chapter assesses the role of social protection policies in promoting inclusive growth in a development context and reflects on the implications of the guidance provided by the Social Protection Floors Recommendation for the design, implementation and monitoring of national social protection policies.

The chapter is structured in four main parts. After briefly recalling the case for social protection policies as a key policy instrument in a development context, the second section provides a concise overview on the current state of social security and the large social security coverage gaps in large parts of the developing world. The third section reviews the growing body of evidence on social protection as an 'investment in people', focusing on the economic rationale for social protection. Investment in people is conceived very broadly, reflecting not only investment in people as individuals, but also in societies, underscoring the importance of strengthening rights and entitlements, legal and institutional frameworks, as well as participation and voice. The review focuses in particular on the impact of social protection on human development, human capital and human capabilities; on the promotion of productive employment; on stabilizing and strengthening aggregate consumption; and on stimulating local markets. Building on this review, the final section of the chapter discusses the implications of the recently adopted ILO Social Protection Floors Recommendation for national and international development policies.

## **The case for social protection in economic and social development**

Social protection plays an increasingly prominent role in economic and social development policies. Recent social protection policy initiatives in a number of low- and middle-income countries have built a strong case for social protection<sup>3</sup> as a key policy element in a development context. Over the last decade, it has been widely recognized that sustainable and equitable growth cannot be achieved in the absence of strong social protection policies, which progressively extend social security coverage

to much larger groups of the population. This acknowledgement comes late, given that it is well accepted that the development of social protection systems constitutes an essential ingredient of the economic development of today's developed countries (e.g. Chang 2004; Kangas and Palme 2009), and continues to do so.

The lack of access to comprehensive social security, which is a reality for the large majority of the global population, constitutes a major obstacle to economic and social development (ILO 2010a, 2011a). Consequently, a number of international policy documents have acknowledged the essential role of social protection in social and economic development, and in accelerating progress towards the achievement of the MDGs. This recognition reflected an important policy paradigm shift in international development (cf. Behrendt et al., 2009; Cichon and Hagemeyer 2007; Cichon, forthcoming). This policy paradigm shift did not only manifest itself in policy documents and academic studies, but also in the wide range of recent policy reforms in a growing number of developing countries.

The re-emergence of social protection policies follows a period of widespread disregard of the necessity and relevance of such policies. During the 1980s and 1990s, structural adjustment policies curtailed public spending on health, education and social protection in many countries, and stripped down publicly provided benefits and services. These policies aimed at limiting social protection policies to temporary safety nets, which were needed to offset the repercussions of these policies. These safety nets were frequently operated outside established national legal and institutional frameworks. Moreover, the introduction of user fees in the health and education sectors in many countries resulted in a marked drop of utilization of health services and school attendance, and was often associated with the exclusion of the most vulnerable groups of the population, despite measures to exempt the poorest from those fees (e.g. Cornia et al. 1987). Overall, structural adjustment policies largely failed to produce economic growth, that would eventually trickle down to the poor. To the contrary, these policies negatively affected various dimensions of social development.

As a consequence, the international debate gradually shifted towards poverty reduction and the promotion of pro-poor growth. Social protection was receiving more attention, yet still largely limited to temporary safety nets and 'social risk management'. According to this logic, little attention was given, if at all, to the wider functions of social protection policies, such as the realization of human rights, containing inequality and income insecurity, and the promotion of social cohesion.

The debate again shifted when it became clear that, despite partial progress of some countries, many developing countries would not be able to attain the MDGs. At the same time, evidence in the positive development results generated by countries investing in social protection received wider attention. As a result, more consideration was now given to social protection policies as integral parts of national economic and social development strategies (OECD 2009). Rights-based approaches have gained traction, based on the notion that effective social protection policies need to be embedded in national legal and institutional frameworks, which provide clear rights and entitlements.

The emergence of a growing number of effective social protection programmes in low- and middle-income countries supported the case for social protection as an integral part of economic and social development policies. Various types of programmes have been introduced or extended in recent years.<sup>4</sup> Cash transfer programmes for families with children, conditional or non-conditional, now exist in several countries, including Argentina, Brazil, Mexico and South Africa. Some of these programmes, provide cash benefits only under the condition that recipient families utilize health and education services,<sup>5</sup> which represents a major turnaround against earlier policies introducing user fees and curtailing public social services in the context of structural adjustment policies. Universal or means-tested non-contributory pensions play an important role in ensuring at least a basic level of income security for older women and men in many countries, including Bolivia, Cape Verde, Mauritius, Namibia, Nepal and South Africa. Employment guarantee schemes, guaranteeing a certain number of days of employment to poor households in rural areas, coupled with cash transfers for those who are not able to work, have contributed to enhancing living standards in Ethiopia and India. Many countries, including Rwanda and Thailand, implemented bold measures to strengthen effective access to health care for their populations. These experiences, complemented by a number of costing studies (ILO 2008; Mizunoya et al. 2006; Pal et al. 2005), challenged the myth that social protection programmes would not be affordable to middle- and low-income countries. Instead, they supported the view that low- and middle-income countries can find fiscal space (Heller 2005; Roy and Heuty 2009) for social protection policies, although resource constraints may dictate a progressive approach (ILO and IMF 2012; ILO 2011e). Many countries have followed a gradual approach, starting with relatively modest programmes, which are gradually expanded as fiscal space widens.

The policy paradigm shift has, to some extent, been accelerated by the global financial, economic and social crisis. Revealing some of the imbalances of globalization, the global crisis helped to promote the understanding that an integrated policy approach is necessary to respond to the crisis and build resilience for the future. The Global Jobs Pact, which was adopted by the ILO and endorsed by the UN in 2009 (ILO 2009; UN 2009), put forward a coordinated policy approach combining employment promotion, social protection, rights and social dialogue as a way out of the crisis. At the same time, the UN created the Social Protection Floor Initiative, which aimed at the promotion of inclusive growth and social justice, and at accelerating progress towards the achievement of the MDGs. The SPF initiative promotes integrated strategies for ensuring access to essential social services and income security for all. It was endorsed by the UN Chief Executive Board in April 2009 as part of the joint UN crisis response initiatives, and is supported by a global coalition of various UN agencies, international and regional financial institutions, bilateral donors and non-governmental organizations (NGOs). Since then, the role of social protection in general, and SPFs in particular, for economic and social development has been acknowledged in a number of international, regional and multi-national forums, including the UN (e.g. UN 2010, 2012) and the G20 (2009, 2011, 2012).

Against this backdrop, it is not a coincidence that the recently published strategic frameworks of the major multilateral players in the field of social protection emphasize some common messages (European Commission 2011, 2012; ILO 2012a; UNICEF 2012; World Bank 2012). Despite differences in detail, these frameworks appear to converge on the need for a systemic approach to social protection, which aims at creating inclusive and sustainable social protection systems, building on national SPFs, which are closely coordinated with other social and economic policies. While the policy messages of the various organizations vary, this common understanding represents an important step forward towards securing more inclusive growth by closing the social security coverage gaps and ensuring access to effective social protection.

### **The status quo: lack of access for the large majority of the population in developing countries**

To date, the limited access to social protection mechanisms in developing countries is one of the main policy challenges in achieving

sustainable growth, productive employment and decent work. While comprehensive statistical information is scarce, the ILO estimates that less than one tenth of the economically active population in least developed countries has access to comprehensive social security, including a minimum level of income security and access to health care.

For example, in the majority of least developed countries, less than one in 20 elderly women and men receive an old age pension, which would provide them with income security in old age (ILO 2010a, 2011a). In Africa, only one in six elderly women and men receive an old age pension, and only one in four in Asia and the Pacific and the Middle East (see Figure 6.1). Likewise, only one in ten women and men of active age in Africa, and one in five in Asia and the Pacific and the Middle East contribute to a pension scheme and can thus expect to be economically secure in the event of employment injury, disability or old age. Unless appropriate policy measures are taken, these women and men will also face a high level of income insecurity in old age.

With regard to health care, a large proportion of the population in low- and middle-income countries face financial barriers in accessing health care services. In least developed countries, on average, only 62 per cent of total health cost is pre-paid through public or private collective health financing mechanisms.<sup>6</sup> This leaves, on average, 38 per cent of the total cost of health care to be paid out of pocket, which results in a high poverty risk for people seeking health care, at a vulnerable moment of their lives, and their families. The level of out-of-pocket expenditure, however, does not reflect the fact that many of the poorest groups cannot afford to access health services at all. Overall, levels of health spending vary strongly (see Figure 6.2).

While the allocation of an adequate level of resources for health care is essential, high levels of spending are, however, not necessarily associated with adequate health infrastructure, a well trained workforce of health workers, and accessible health services, including for people in remote areas and the extreme poor. In some countries, the available resources are efficiently used to ensure quality health services even at a relatively small cost, whereas other countries, at similar levels of expenditure, do not achieve the same health outcomes.

Obviously, the level of resources that can be allocated to social protection varies with the level of economic development. However, a linear relationship cannot be observed between levels of GDP and levels of social protection expenditure. While the relative level of government expenditure as a proportion of GDP can explain some of the variation in the level of social protection expenditure (ILO 2010a: 83–86), there

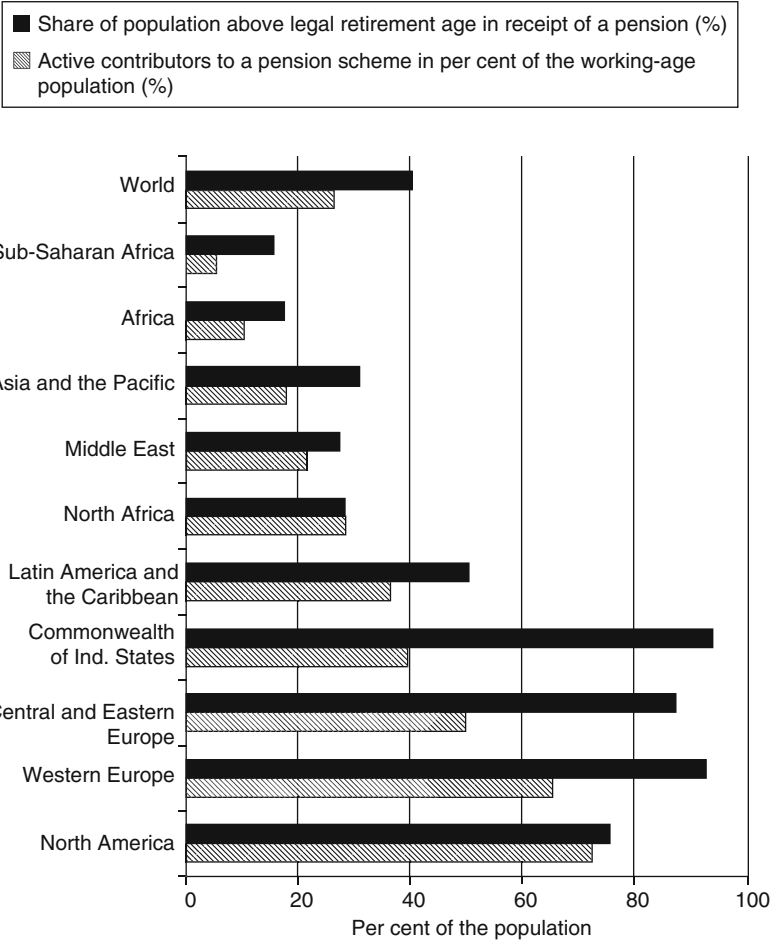


Figure 6.1 Share of recipients of a contributory or non-contributory pension and active contributors to a pension scheme, regional estimates (weighted by population), latest available year

Source: Based on ILO (2010a), Annex Table 21.

is large variation in the share of government spending devoted to social protection. Figure 6.3 demonstrates that at each level of economic development (measured as GDP per capita) countries have chosen widely varying levels of social protection expenditure. Countries at similar levels of development spend largely varying shares of their national income on social protection. Such variation may be partly explained by variations in

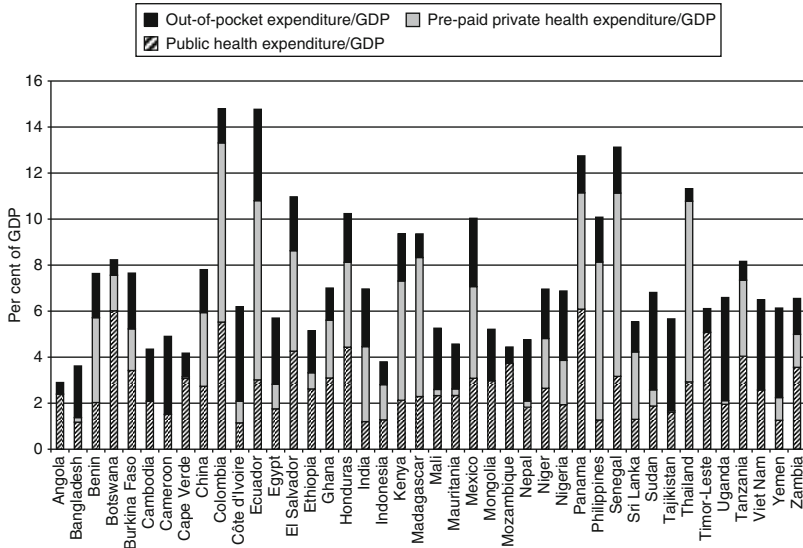


Figure 6.2 Total health expenditure and sources of financing in selected countries, 2011

Source: Author's calculations based on WHO National Health Accounts, available at: <http://www.who.int/nha/en/>

need (associated with the socio-demographic structure of the population, health status, employment patterns and other factors) and variations in the available resources (associated with the structure of the economy and the labour market, as well as the ability of the government to collect taxes and contributions and the effectiveness of fiscal institutions). However, a critical role is also played by 'soft' factors, which some observers subsume under the notion of 'political will'. This notion reflects the social contract in a given society, understood as the societal consensus on the level of redistribution that is acceptable to the population, as well as political leadership and vision, both translated into policy decisions through political processes and institutional structures.

The lack of social security coverage is closely associated with the prevalence of informal employment in many low- and middle-income countries. Social insurance arrangements usually cover only salaried workers in the formal economy, sometimes excluding workers on temporary contracts or in small enterprises. In many countries, there have been commendable efforts to extend the coverage of formal schemes to additional categories of workers through the extension of



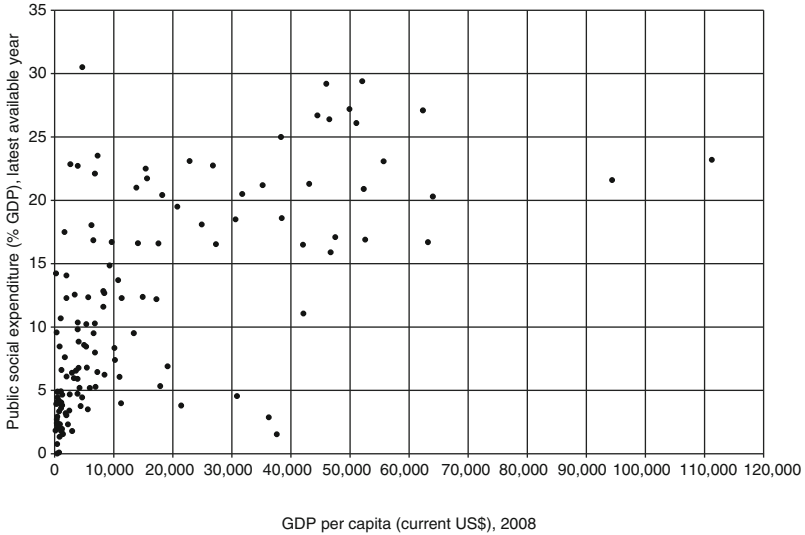


Figure 6.3 GDP per capita and social protection expenditure, latest available year  
Source: ILO (2011e), Graph 2.7, based on ILO (2010a), Annex tables 13 and 25.

coverage of social security schemes to workers at the margins of formal employment, or the complementary use of micro-insurance schemes. These efforts have been successful where the design, financing and administration of schemes respond to the specific needs of the covered groups of workers, and where measures were taken to accommodate the specific characteristics of their work, such as irregularity or seasonality of employment, low and/or fluctuating incomes or their employment status (own-account workers and self-employed).

Non-contributory programmes, such as social pensions, child benefits or other cash transfers, are another important component of national social protection strategies, as they are designed in a way that include the most vulnerable groups of the population and guarantee at least a basic level of social protection for all. While the programmes in place are not yet sufficient to cover the protection gaps faced by the majority of the population in large parts of the world, many countries have stepped up their efforts to extend social protection coverage through non-contributory programmes.

The growing evidence for the effectiveness of such programmes in reducing and preventing poverty and promoting wider social and economic development goals has strengthened, and continues to strengthen, the economic argument for social protection in developing

countries. It is increasingly understood that the lack of social protection constitutes an effective hindrance to economic and social development, which seriously damages opportunities for sustainable growth.

### Investing in people through social protection: the economic rationale – a review of the evidence

The persistence of poverty and the failure of policies relying on narrow conceptions of economic growth have spurred wider interest in the relationship between social and economic growth, and in the role that social protection can play in this context. It is now much better understood that early investments in education, health and income security are not just key elements of social development, but also constitute essential preconditions to economic development. These investments enable people to become more productive members of their society, seize economic opportunities, generate higher incomes and move out of poverty and destitution. Thus, such investments are critical to breaking the vicious circle of the intergenerational transmission of poverty (see Figure 6.4).

There is a growing body of evidence on the positive effects that social protection policies can have on breaking the vicious cycle of intergenerational poverty traps. If the necessary conditions are in place,

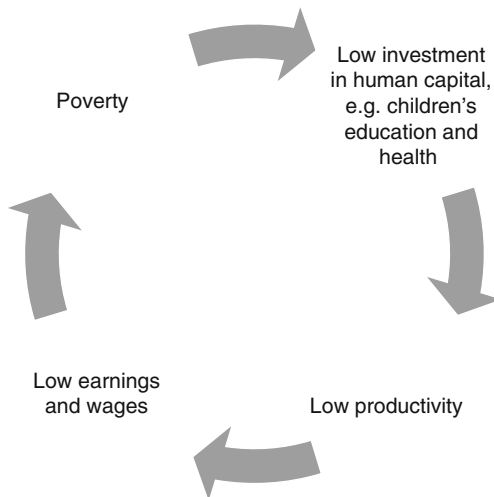


Figure 6.4 Intergenerational poverty traps

Source: ILO (2010c: 97).

investments in people can contribute to better health and education outcomes, which can in turn contribute to enhancing productivity and promote decent employment, which can help to generate inclusive economic growth. In an ideal world, the vicious cycle of intergenerational poverty traps could be transformed into a virtuous cycle of inclusive growth. While there is a solid body of evidence on the importance of social protection for economic and social development, as well as state-building and social cohesion in a high-income country context, the debate in a development context is still in its early stages (e.g. Townsend 2009).

The following four sections will summarize the growing, yet still patchy, evidence on the impact of social protection programmes on economic development in low- and middle-income countries, focusing on investments in human capital and human capabilities, the promotion of productive employment and the stabilization of aggregate demand and the stimulation of local markets.<sup>7</sup> This review is not intended to provide a full discussion of the growing body of evidence, and is certainly not complete. It rather aims at highlighting some key lessons from the emerging evidence that shed a new light on the complex interactions between social protection, employment and economic growth in a development context, and at identifying possible avenues for future research.

### **Investing in human development, human capital and human capabilities**

Social protection is increasingly acknowledged as a means of fostering investments in people and enhancing human development. Such investments could also be conceptualized as investments in human capital and human capabilities. In order to fully capture the effects of social protection on various aspects of human development, a long-term framework is needed that allows reflecting the long-term effects of certain policies on human development. This is particularly important for assessing the impact of social protection policies on children's development.

The following paragraphs will summarize some of the available evidence on the impact of social protection on the following dimensions of human development: investments in nutrition and health; investments in education and skills development; and the promotion of gender equality and women's empowerment.

#### *Promoting investments in nutrition and health*

Social protection plays a strong role in promoting nutrition and health. Three main channels of impact need to be distinguished: first, the

impact of the direct provision of social protection benefits in the form of food, as well as, arguably, agricultural inputs; second, the impact of greater income security, which facilitates access to nutrition, sanitation, education and other essential goods and services; and third, the direct impact on health through ensuring effective access to health care including health prevention and promotion.

### *Nutrition and food security*

As food consumption constitutes the largest expenditure item of poor households, social transfers in cash or in kind, aimed at protecting or raising household consumption, have a strong effect on nutritional status (FAO 2012; Gentilini and Omamo 2010). Employment guarantee programmes in rural areas in countries such as Ethiopia and India can also play a critical role in enhancing income security, and thus nutritional status, during the low season. In addition, effective access to health care, especially to health prevention, also plays a critical role in detecting malnutrition and providing information regarding better diets. Some social protection programmes also address food security specifically by providing nutrition-related interventions, especially for children, including school feeding programmes and other benefits. The available evidence from a range of programmes in various countries suggests that beneficiary households tend to spend more on food, have a better nutritional status and follow a more varied diet than non-beneficiary households (ILO 2010b, 2010c). Investments in nutrition obviously have a direct impact on the physical development and health status of the population, particularly on children (discussed further). Many of the available evaluations report on a marked improvement of nutritional status for children, which obviously is essential in terms of long-term progress of human development, especially with regard to fostering children's educational attainment and their productive activity during adult life.

### *Access to health care*

One of the key functions of social protection policies is to ensure effective universal access to health care, which obviously is of key importance to ensuring investments in health for people at all ages. Mechanisms of social health protection, which include social health insurance and national health services and other forms of public health services, play a key role in making sure that the population has effective access to health care. This is particularly important with respect to minimizing out-of-pocket expenditure for health care, which constitutes one of the preeminent poverty risks in many countries around the world,

as discussed already (Figure 6.2). Countries that have invested in social health protection aiming at ensuring universal access to health care, adequate benefit packages and a sufficient level of financial and human resources in the health sector, tend to achieve better results in terms of the health status of the population (e.g. ILO 2010a; Scheil-Adlung and Bonnet 2011). Enhancing the health status of the population and guaranteeing access to health care when needed are also critical preconditions for achieving broader human development outcomes in other areas, including education and productive employment.

### *Maternal health*

Enhancing maternal health has been part of the focus of development policies in many countries for some time, supported by the strong focus of the MDGs on the reduction of maternal and child mortality. Measures taken include the waiving of health service user fees for childbirth and for pre- and post-natal visits, as well as cash transfers for pregnant women or young mothers and their children, some of which are explicitly linked to conditions related to the aim of achieving maternal health objectives, such as a higher utilization of pre- and post-natal health visits and an increase in births attended by skilled health personnel. Evaluations of conditional cash transfer programmes in Latin America, such as the Peruvian Juntos programme and the Mexican Oportunidades programme, show a marked increase in the utilization of pre- and post-natal health visits and a reduction in home based births (ILO 2010b: 99).

### *Child health and physical development*

Recognizing the importance of early investments in children's health for their later physical and cognitive development, as well as educational achievement, many social protection programmes have focused on children. In numerous countries, the removal of obstacles to accessing health services has been combined with cash transfers associated with health-related conditions, such as participation in immunization programmes and health visits for children, which have led to a better utilization of health services. For example, evidence from the Colombian Familias en Acción programme demonstrate a marked increase in health visits, and a decline in the number of young children affected by diarrhoea in rural areas (Attanasio et al. 2005). There is some evidence from various countries, which has found marked impacts on height for age indicators and a lower incidence of stunting, including Duflo's (2003) study on South African children growing up in pensioner households. Such improvements in physical and cognitive development, particularly in early years, are an essential precondition

for educational achievements and a person's ability to seize economic and social opportunities in their later lives.

*Promoting investments in education and skills development*

Social protection also constitutes an important contribution to fostering educational attainment and skills development. Cash transfer programmes aim to reduce poverty and prevent its intergenerational transmission through linking income security for children and their families to education and health outcomes, explicitly or implicitly, and by this token generate beneficial longer-term effects on education, skills and eventually productive employment.

The following sections highlight some of the available evidence on the impact of social protection on educational attainment, the abolition of child labour and skills development.

*Educational attainment*

Social protection also plays an important role in facilitating access to education, and is obviously also closely connected to health outcomes. Some programmes directly target school enrolment and attendance through conditions attached to cash transfers; others have a more indirect effect on these factors through ensuring at least a basic level of income security, which facilitates school attendance. The latter type of programme includes child benefits but can also include other schemes that provide a predictable cash transfer to poor households. For example, school enrolment rates of children living in households of pensioners in South Africa have been found to be higher than for other children (Devereux 2001). There is strong evidence about the impact of conditional cash transfer programmes on children's school enrolment and attendance, particularly for countries in Latin America, such as Brazil, Chile, Colombia, Ecuador, Honduras, Mexico and Nicaragua, as well as for Bangladesh, Cambodia, Malawi and Pakistan (Baird et al. 2009; ILO 2013a; Fiszbein and Schady 2009). Many of these studies confirm significant effects of conditional cash transfers especially for older children, particularly with respect to facilitating transitions to secondary school and increasing the likelihood of spending additional years in education rather than dropping out of school. In some countries, effects for girls have been found to be superior to those for boys, which suggests that such transfers contribute to closing the gender gap (e.g. Baird et al. (2009) for Malawi). The evidence on programme effects on education outcomes (additional years of schooling, impact on wages) is less conclusive, which has been explained with the low quality of education services provided and household-level constraints that have not been addressed by the programme (Fiszbein and

Schady 2009: 160–64). These results suggest that social protection policies need to be closely integrated with education and other social policies in order to effectively promote educational attainment. This includes, among other factors, the accessibility of schools and child care facilities, including adequate allocation of financial and human resources.

While most of the available evidence on the link between social transfers and educational attainment focuses on conditional cash transfer programmes, this should not lead to the conclusion that non-conditional programmes are necessarily less effective (ILO 2011e, 2013a). In fact, despite the lack of an explicit conditionality associated with health and education objectives, such programmes play an important role in enhancing the resilience of poor families and children, strengthening human rights and promoting human development. It is an open question whether it is the conditions attached to the receipt of benefits that are the decisive factor in reaching positive human development outcomes, or whether these results are influenced more by the availability of a cash transfer as such or by complementary measures to ensure the availability and accessibility of education and health services, which often accompany the establishment of conditional cash transfer programmes (ILO 2010c, 2011e, 2013a). While the importance of investments in the health and education of children for individuals and societies is uncontested, the necessity, effectiveness and design of behavioural conditions have been the subject of debate. Some observers focused on implications for gender equality, arguing that conditional cash transfers place an undue burden on women's time (e.g. Molyneux 2006). Another stream of discussion has focused on implications for human rights (summarized in ILO 2011e: 118–20). While some observers hold that behavioural conditions cannot be reconciled with the universal nature of human rights, others stress the importance of obligations supporting the practical realization of such rights.

### *Abolition of child labour*

In recent years, the role of social security benefits in contributing to the effective abolition of child labour, in particular with regard to the worst forms of child labour, has been acknowledged (ILO 2010d, 2011d, 2013a; UCW 2010). While a few (conditional) cash transfer programmes are explicitly designed to reduce child labour, as is the Programme for the Elimination of Child Labour (PETI) in Brazil, others target child labour as a secondary objective. Many evaluations of cash transfer programmes show a sustained increase in school attendance and performance. However, the evidence on the reduction of child labour is

somewhat less conclusive: while in some countries conditional cash transfer programmes were associated with a reduction in employment rates for children, at least in certain age groups, in others no significant reduction in employment rates could be discerned. In some countries, higher rates of school attendance were associated with a stable incidence of child labour, that is, children were more likely to combine school with work. This evidence suggests that conditional cash transfer programmes alone may not be sufficient to reduce the incidence of child labour, but need to be combined with other measures (Fiszbein and Schady 2009; ILO 2013a; Tabatabai 2009). Public employment guarantee programmes can also play a decisive role in abolishing child labour through providing guaranteed employment for adults. Careful programme design and implementation is necessary, however, to avoid adults' working time (including for household chores) being substituted by children's time, and to ensure that additional household income is invested in the health and education of children (ILO 2013a; UCW 2010).

### *Skills development*

While the impact of social protection policies on educational attainment is relatively well researched, the possible link between social protection and skills development, particularly with respect to participation in vocational training, tertiary education and life-long learning, has received less attention. However, in a similar way that income security and effective access to health care facilitate access to education, they should facilitate access to skills development. While in many developed countries specific programmes exist to ensure income security during participation in training programmes, often associated with unemployment insurance, few such programmes exist in developing countries. Employment guarantee schemes and other public employment programmes to some extent fulfil a similar role, as far as participants in the programme acquire better skills and increase their productivity. However, in practice, not all programmes attach the same importance to skills development and devote sufficient attention to the training of beneficiaries (McCord 2012; Subbarao et al. 2013). More research would be needed to better assess the link between social protection and skills development in a development context.

### *Promoting gender equality and women's empowerment*

Economic and social development is closely associated with the promotion of gender equality and women's empowerment. The link between higher levels of female education, a reduction in fertility rates and



investments in children's health and education is well established. Evidence from a number of cash transfer programmes suggest a marked effect on closing the gender gap in terms of access to education and, to some extent, educational attainment (Fiszbein and Schady 2009). However, some studies also identified distinct gender differences in the impact of social protection schemes on school attendance and attainment, as well as on the reduction of child labour.

More generally, there is ample evidence that social transfers that enhance women's command over resources are also likely to improve their status within their families (Fiszbein and Schady 2009; Patel et al. 2012). For example, social pensions tend to have a particularly pronounced effect on the well-being of older women, both with regard to enhancing their economic situation and their command over resources, as well as with regard to their status within their family (Kidd 2009).

There is also strong evidence that social transfers provided to women tend to be invested to a larger extent in children's health and education, and thus are prone to generate more positive development effects, as compared to transfers provided to men. However, the strong focus on women as key agents in social protection programmes has also had negative repercussions (Veras Soares and Silva 2010). For example, the focus on mothers in conditional cash transfer programmes has raised concerns about an additional burden on women's time associated with fulfilling the behavioural conditions required by the programme (Molyneux 2006). This points to the need to carefully consider the design of cash transfer programmes with respect to their gender effects.

Non-contributory cash transfers are particularly important as instruments that can at least partly compensate for women's lower coverage rates in contributory social insurance schemes, which reflect gender inequalities in access to paid employment and women's higher exposure to precarious and/or informal employment and unpaid work (Razavi et al. 2012). However, non-contributory transfers alone are not sufficient to ensure gender equality in social security coverage; equally important is women's participation in social insurance, which requires increased attention to a gender-sensitive policy design, as well as measures to promote women's access to decent employment, a more equal sharing of care responsibilities between women and men and the availability of quality social services (Holmes and Jones 2013; Jensen 2009).

### **Promoting productive employment**

The positive effects of social protection in terms of investments in nutrition, health and education, as discussed in the previous section, clearly

have a positive effect on the promotion of employment and productivity in the longer term. However, social protection policies can have an effect on the promotion of productive employment more directly through different channels. This section will highlight some of the existing evidence on more short-term effects that help to promote productive employment. These include ensuring income security and smoothing household consumption, increasing productivity and promoting employment.

#### *Ensuring income security and smoothing household consumption*

Obviously, social protection policies play a strong role in ensuring income security and smoothing household consumption during times when earned income is temporarily or permanently reduced. This is the case in particular during spells of unemployment, sickness and maternity, as well as in the case of old age or disability. In this context, both contributory (social insurance) and non-contributory benefits can play a key role in ensuring income security and smoothing household consumption. Such benefits can protect people from poverty and from being forced to adopt harmful coping strategies in order to make ends meet, such as sending children to work, taking out loans at excessive interest rates, engaging in work under unacceptable working conditions or resorting to coping strategies that are harmful to the environment. Ensuring income security at the micro-level thus can also impact the level and quality of employment, as well as macro-economic performance (discussed further).

#### *Enable workers to take more risks*

A basic level of income security is an important precondition for workers' ability to accept economic and entrepreneurial risks, which enables them to increase their productivity (ILO 2001; ILO 2011e; Social Protection Floor Advisory Group 2011; World Bank 2005). Where workers are malnourished, sick, illiterate and living in dire poverty, they have little choice other than to engage in basic livelihood strategies that secure their mere survival. With a basic level of income security and access to health care and other social services, people can engage in more productive activities and unlock their productive potential. Ideally, social protection is one of the components of a virtuous circle of development, by which higher productivity translates into higher wages and incomes, employment and sustainable growth.

#### *Seizing economic opportunities*

Where they exist, social cash transfers often are the only regular source of cash income for poor households. For example, evidence from

Zambia has demonstrated that modest, but regular, social transfers enabled poor households to save, often through traditional savings groups, and invest their savings in livestock or a small business, which enabled them to further increase the economic opportunities of their households (Zambian government and GTZ 2005).

#### *Increasing reservation wages and incomes*

Social protection programmes can have an impact on reservation wages, whereby the availability of cash benefits may render low-wage employment less attractive as compared to a situation without cash transfers. Such effects have often been debated. Some observers argued that social protection benefits would crowd out low-wage employment and ultimately harm the economy. However, other observers have argued that an increase in reservation wages may lead to higher productivity, higher consumption and sustained growth. There is some evidence on such effects in a development context. For example, evaluations of the MGNREGA programme in India have demonstrated that the 100 days of guaranteed employment at the minimum wage level has contributed to increase wage levels in rural areas, particularly for women (Belser and Rani 2011; Dasgupta and Sudarshan 2011).

#### *Reducing employment participation for children and the elderly*

As sketched out already, there is some evidence, albeit not fully conclusive, that social protection can contribute to curbing the incidence and intensity of child labour. Greater income security for older people, namely through social pensions, may also have an effect on the employment of older women and men, taking into account that high labour force participation of older people in developing countries in many cases is necessitated by the lack of other sources of income, rather than out of choice (ILO 2013b; UNFPA and HelpAge International 2012). It could be argued that lower labour force participation rates for children and the elderly may contribute, under some circumstances, to greater employment opportunities for prime-age adults, but systematic evidence is still lacking.

### **Stimulating local markets, stabilizing aggregate consumption and supporting structural transformations of the economy**

In addition to effects at the micro level, social protection policies can also impact economic development at the meso and macro level through various channels, including the stimulation of local markets, the stabilization of aggregate consumption and the support of structural transformations of labour markets and the economy as a whole.

### *Stimulating local markets*

Social protection programmes contribute to stimulating local markets by creating demand for domestic goods and services, especially in rural areas, where in many cases, the availability of cash income is very limited. Channelling cash transfers into such rural areas through social protection programmes can constitute an important contribution to the functioning of the local economy, which in many cases creates multiplier effects through creating business opportunities for small and micro enterprises and employment opportunities for the rural population. Evidence from Namibia and Zambia highlights the impact of modest social pensions, which often constitute the only regular source of cash income for poor rural households, for the local economy (Devereux 2001; Zambian government and GTZ 2005). The Bolsa Família programme in Brazil was reported to have similar effects on the local economy in rural areas, which helped to create much-needed employment opportunities in these areas (ILO/IILS 2011a: 91).

### *Stabilizing aggregate consumption*

The global crisis has drawn attention to the role of social protection policies as an automatic stabilizer of aggregate consumption and aggregate demand in the event of major economic shocks (Behrendt et al. 2011; ILO 2010e; ILO/IILS 2011b). Such stabilizing effects had been most pronounced in countries that had comprehensive social security systems in place before the crisis, in particular with respect to unemployment benefits, as well as social assistance and other cash transfer programmes. Such transfer programmes constitute effective mechanisms to channel resources to those groups of the population that would otherwise suffer a dramatic reduction of their personal income (Bonnet et al. 2012a; ILO and World Bank 2012). In addition, social health protection adds another layer of social security that prevents people from losing access to health care when losing their job or earned income, thus further enhancing resilience during economic crises. Such measures contribute to maintaining or boosting aggregate consumption and demand, and are likely to have a strong effect on local markets for food and other basic necessities, as well as on personal services.

In a development context, the economic stabilization function of social protection tends to be less pronounced in low and middle income countries than in many high income countries when considered at the macro level, due to the usually much smaller volume of social expenditure. However, there is strong evidence that existing social protection policies play a strong role in contributing to the functioning of the

economy also in development contexts. For example, Brazil implemented a set of policies that contributed to stimulating the economy and to achieving sustained levels of growth through an income-led strategy even throughout the global crisis (Berg and Tobin 2011; ILO/IILS 2011a). This included, in addition to an increase in real minimum wages, the extension of the unemployment insurance programme and an expansion in the Bolsa Família programme, which provides conditional cash transfers to poor families with children.

#### *Supporting structural transformations of the economy*

The economic stabilization function of social protection is, however, not limited to times of major crises. To the contrary, social protection policies play an important role in facilitating structural changes of the economy. This includes facilitating the mobility of workers, supporting skills development, preserving human capital and protecting workers from being forced to engage in informal employment. If workers are made redundant in ailing sectors of the economy, unemployment protection schemes, particularly if well integrated with employment services and active labour market policies, can help to facilitate the retraining of those workers and provide income security until they have found new employment in other sectors of the economy (ILO 2011e). While unemployment protection benefits tend to have the most direct and pronounced effect in this respect, other cash transfers may play a similar role in supporting structural transformations of the economy, yet their impact is less direct. For example, it has been reported that the South African social pensions programme appears to enable some prime-age adults to migrate to urban areas to find employment (Posel et al. 2006).

#### **Summarizing the evidence**

The review of some of the available evidence has illustrated the complexity of the relationship between investments in people through social protection, and possible effects on employment and economic growth in a development context.

Figures 6.5 and 6.6 sketch out some of the effects that have been identified in a schematic way, focusing on short- and long-term effects of higher investments in social security. Given the complexity of these effects, such schematic representation can only provide an incomplete picture of the causal links between these factors, yet it may still be helpful in illustrating some of the effects and their interrelations.

Figure 6.5 highlights some of the short-term effects that can be generated by investments in social security. As outlined in this chapter,

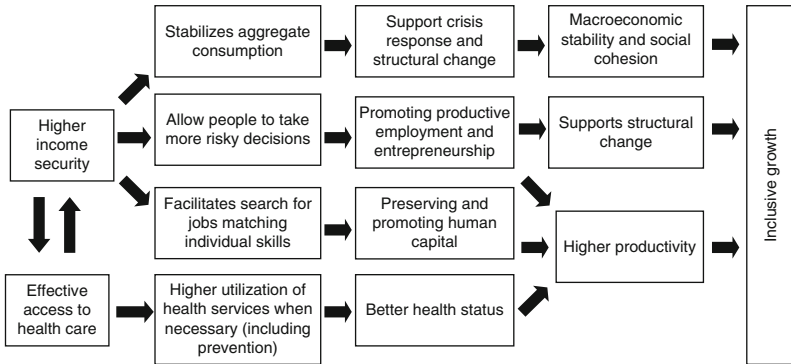


Figure 6.5 Schematic representation of some of the short-term effects of investment in social security

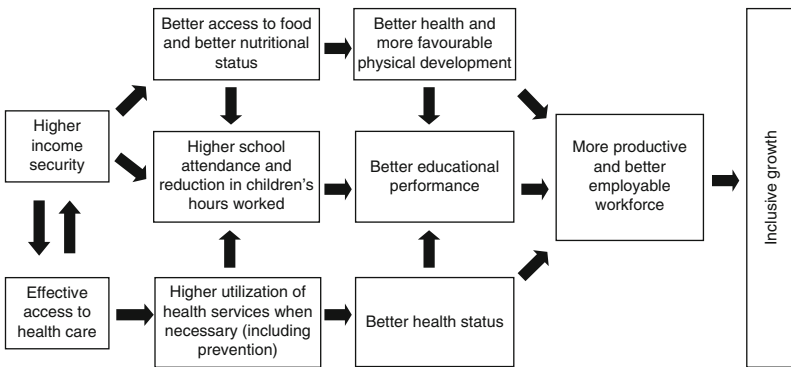


Figure 6.6 Schematic representation of some of the longer-term effects of investment in social security

higher income security can have a direct impact on the macroeconomic stability by stabilizing aggregate consumption, which can help to cushion economic shocks and support the structural change of the economy. Higher income security can also contribute to higher productivity by allowing people to take more risky decisions, therefore, promoting productive employment and entrepreneurship, and by facilitating job searches matching individual skills and preserving human capital. Ensuring effective access to health care also contributes to the preservation of human capital and to promoting higher productivity.

In the longer run, additional factors come into play, as highlighted by Figure 6.6. Investments in social security help to ensure better access to food and better nutritional status of the population, particularly for children, which contribute to better health and more favourable physical development, as well as facilitating educational outcomes. Higher income security has also been associated with higher school attendance and a reduction in child labour. Effective access to health care plays a key role in achieving more positive human development results. Together, these factors contribute to enhancing productivity and the employability of the workforce, which in turn is a key precondition for achieving sustainable and inclusive growth.

The schemata given in Figure 6.6 can only capture some of the possible channels of impact, while others are more difficult to capture. For example, social protection plays an important role in containing inequality and reducing poverty, which are certainly important elements in promoting social cohesion and social peace (Behrendt and Woodall forthcoming; ILO/IILS 2008; OECD 2011; UNRISD 2010), but also has an important economic dimension, which could not be captured in the schemata here.

While the focus on the economic rationale for investments in social protection has helped to identify important channels of impact, social protection policies need to be assessed from a wider perspective.

Strengthening investments in people through social protection requires strong national SPFs, which can guarantee at least a basic level of protection to all, within progressively comprehensive national SPFs. The final section of this chapter will elaborate on national SPFs as a building block of national social and economic policies promoting inclusive growth and social cohesion.

## **Building national social protection floors and social security systems**

The broad international consensus on national SPFs constitutes a major step forward in the conceptualization of social protection policies as part of an integrated set of economic and social policies that are necessary for promoting inclusive growth. The SPF approach addresses the linkages between the (human) right to social security and the role of social protection as a social and economic necessity, and highlights the need for coherence between economic, employment and social policies.

The recently adopted ILO Social Protection Floors Recommendation, 2012 (No. 202) provides guidance to the ILO's 185 member states with regard to the implementation of their national SPFs and strategies for the extension of social security (ILO 2012a). This Recommendation explicitly acknowledges, in addition to its rights and social dimensions, the economic rationale for social protection policies by stating in the preamble that:

social security is an investment in people that empowers them to adjust to changes in the economy and in the labour market, and that social security systems act as automatic social and economic stabilizers, help stimulate aggregate demand in times of crisis and beyond, and help support transition to a more sustainable economy (ILO 2012a).

The Recommendation defines SPFs as a set of nationally-defined basic social security guarantees, which secure protection aimed at preventing or alleviating poverty, vulnerability and social exclusion.<sup>8</sup> They include, at least, access to essential health care for all and a basic level of income security throughout the life course, for children, people of working age and the older generation. Reflecting a two-dimensional strategy (ILO 2012a), the Recommendation insists that national strategies for the extension of social security should not only prioritize the implementation of national SPFs (horizontal dimension), but also progressively move towards higher levels of protection (vertical dimension) in view of building comprehensive social security systems. The importance of building coherent social protection systems is also emphasized in the recently adopted strategic frameworks of UNICEF (2012) and the World Bank (2012) regarding social protection.

The Recommendation explicitly acknowledges the importance of national SPFs for employment and economic development. Its preamble links the prevention and reduction of poverty, inequality, social exclusion and social insecurity, the promotion of equal opportunity and gender equality to employment and economic objectives. The preamble also acknowledges 'that the prioritization of policies aimed at sustainable long-term growth associated with social inclusion helps overcome extreme poverty and reduces social inequalities and differences within and among regions' and that 'the transition to formal employment and the establishment of sustainable social security systems are mutually supportive'.<sup>9</sup>



A key question is the financing of national SPFs and the extension of social security, particularly with respect to identifying and extending the necessary fiscal space. Two questions arise:

- (1) To what extent are national SPFs affordable, particularly in low income countries with constrained fiscal space?
- (2) How can they be financed in an effective and sustainable way?

With regard to the affordability of national SPFs, experience from existing social protection programmes in middle- and low-income countries demonstrates that significant investments in social protection have been made with relatively limited budgets. For example, the Brazilian Bolsa Família programme covers 26 per cent of the population based on a budget equivalent to 0.4 per cent of GDP (ILO 2011c). Some of the early model calculations of the ILO (ILO 2008; Mizunoya et al. 2006; Pal et al. 2005) have in the meantime been further developed into more refined country-specific cost estimations, which serve as the basis for national dialogues on the extension of social security (e.g. Bonnet et al. 2012b).

This evidence supports the view that the establishment of national SPFs is the financial reach of low-income countries in principle, yet its implementation may need to follow a gradual approach. Some countries with limited fiscal capacities may need to request transitional financial and technical support from the international community in order to accelerate the implementation of their national social protection floors. The Social Protection Floors Recommendation clearly specifies that national SPFs should be financed from national resources, however, countries with insufficient financial and economic capacities may seek international cooperation and support to help their own efforts.

During recent years, a number of low- and middle-income countries have put stronger emphasis on the allocation of public resources on education, health and social protection, acknowledging the importance of investment in people for achieving sustainable and inclusive growth. Various country experiences demonstrate that fiscal space (Heller 2005; Roy and Heuty 2009) can be found, and extended, if necessary, if the political will (reflecting a broad societal consensus and political leadership) is there.

A recent review of country experiences conducted jointly by the ILO and the IMF came to the following conclusion:

The pilot country case studies have reinforced the view that social protection floors are possible even in resource-constrained low-income

countries by demonstrating that core elements of the package of basic social protection measures can be implemented at a reasonable cost, with the rest to be progressively introduced. The pilots have also illustrated the importance of a country-specific approach – whereas the analysis identified several measures that could be introduced immediately in one country, in another, more work is necessary to identify the required financing; and in the third, more reflection is needed to integrate the social protection floor measures into the authorities' own social protection program.

(ILO and IMF 2012)

The emphasis on national conditions and national ownership is essential. Despite the possibility of international financial support under some circumstances, the funding of national social protection policies, at least in the longer run, out of national resources is indispensable. This has implications for national tax policies and administrations. The ILO Social Protection Floors Recommendation sets out that measures to strengthen the mobilization of resources can include the more effective enforcement of tax and contribution obligations, the reprioritization of expenditure or a broadening of a sufficiently progressive tax base.

Such policies reinforce the call for more attention to distribution and redistribution issues. If the majority of the world's poor are living in middle-income countries (Sumner 2010), redistributive policies through taxes and transfers need to become more important in order to contain inequality and to promote social cohesion and social justice at the national level. While these questions are certainly of key importance for middle-income countries, low-income countries will certainly face similar questions, particularly if they are endowed with natural resources (Hujo and McClanahan 2009; Hujo 2012). In view of the decline of official development assistance in the wake of the economic crisis, calls for stronger redistributive policies will become even louder. Many countries have already started building their national SPFs in response to these demands, acknowledging that social protection policies are an important component of an integrated policy response to support a more inclusive pattern of growth.

The emphasis on nationally-owned solutions and rights-based solutions highlights the importance of effective national social protection policies, which will effectively contribute to fostering inclusive growth and realizing human rights. By this token, this approach reaches beyond development assistance and short-term safety net policies, but contributes to a coherent set of national economic, employment

and social policies, grounded in effective national legal and institutional frameworks, as key ingredients of policies promoting inclusive growth.

## Notes

1. This chapter is written in a personal capacity and does not necessarily represent the position of the ILO. The author is grateful for constructive comments from Krzysztof Hagemeyer, the participants of the workshop on employment, development and macroeconomic policies (6–7 October 2011) and the 71st Decent Work Forum (12 December 2012), as well as from three anonymous reviewers.
2. The ILO Social Protection Floors Recommendation, 2012 (No. 202) was adopted almost unanimously (one abstention) by governments, employers' and workers' representatives at the 101st Session of the International Labour Conference. See ILO (2012a).
3. There are varying definitions of the terms 'social protection' and 'social security', which frequently lead to some confusion. In many contexts, the two terms may be used interchangeably. The ILO usually uses the term 'social security', with reference to the human right to social security according to Art. 22 of the Universal Declaration on Human Rights. This term encompasses a broad variety of policy instruments, including social insurance, social assistance, universal benefits and other forms of cash transfers, as well as measures to ensure effective access to health care and other benefits in kind aiming at securing protection. For more detail, see ILO (2010a 13–17).
4. For a review of some of these experiences, see e.g. ILO (2010b, 2011a); UNDP et al. (2010); Ribe et al. (2010).
5. The behavioural conditions incorporated in such schemes typically aim at ensuring that children attend school and that mothers and children follow a health check-up schedule.
6. Calculated based on WHO National Health Accounts data; see also ILO 2010: *World Social Security Report 2010/11: Providing coverage in the time of crisis and beyond* (Geneva: International Labour Office), available at: <http://www.socialsecurityextension.org/gimi/gess/RessFileDownload.do?resourceId=15263> (accessed 22 August 2013), Annex Table 27.
7. The following sections draw on a number of earlier reviews of the growing body of evidence on the economic impacts of social protection, including Fiszbein and Schady (2009), ILO (2010b, 2010c, 2011e), Social Protection Floor Advisory Group (2011) and others.
8. See ILO Social Protection Floors Recommendation, 2012 (No. 202), para. 2.
9. ILO Recommendation No. 202, preambular paragraphs 5–8.

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## **Part III**

# **Inequality, Wages and their Macroeconomic Consequences**

# 7

## Wages and Growth in Open Economies: A Policy Dilemma?

*Massimiliano La Marca and Sangheon Lee*<sup>1</sup>

### Introduction

One of the recent developments of the Great Recession (2008–present) has been the retrenchment of fiscal policies and an obsessive promotion of structural reforms, particularly in the labour market, as the only way out from crisis. Proposed reforms typically involve restructuring of the bargaining system and reduction in the minimum wages, employment protection and benefits. The objective is to make labour more flexible to increase efficiency as well as to reduce unit labour costs and improve external competitiveness. Such perspective on labour costs and growth has indeed gained prominence in this recent phase of crisis, recommended particularly to those economies undertaking severe fiscal consolidation measures. However, it has been a general prescription of the post-globalization era; a way to realize the benefits of liberalized trade and increased international competition. Moreover, it has been often promoted as a *universal* strategy for increasing growth.

The chapter explores a particular aspect of the consequences of undertaking labour market reforms that affect the wage share, in a world in which economies are strategically interdependent. In such a context, each economy seeks to achieve the maximum level of output given the structure of their internal and external demand as well as other economies' policies. However, changes in the wage shares that, other things being equal, would increase output of any economy may lead to undesired outcomes for each of them.<sup>2</sup>

The problem of policy actions leading to a sort of 'fallacy of composition' has been analysed in different contexts such as trade protectionism and specialization in labour-intensive manufactures. Terms such as 'race to the bottom' depict a situation in which labour conditions are worsened

and overall living standards are reduced by the systemic effect of attempting to improve a competitive position vis-à-vis other producers.

A 'coordination problem' represents the possibility that the choice any single country would take by pursuing its own economic objectives may lead to an outcome that no single country would choose, so that a 'coordination failure' emerges when countries acting in their own interest end up with an outcome that is somehow 'inferior' to another possible result of economic interaction.

The chapter analyses the possibility of global coordination failures emerging from policies affecting the wage share by using some well-known concepts of the game theory and institutional design literature. A simple Kaleckian macroeconomic model of aggregate demand and distribution serves as basis for the analysis of economic interaction, systemic outcomes and possible strategic behaviour.

It can be shown that global effective demand is like a public good in short supply: all economies benefit from it and there is an incentive to 'overuse' it by gaining competitive advantages against trading partners. If this conflicts with the capacity to generate aggregate demand, the composition of the policies of all economies leads to an undersupply of global demand and all the economies will be worse off. While in the 'Tragedy of the Commons' a resource such as common pasture was overexploited by herders with the sole incentive of having their cows grazing it as much as possible (Hardin 1968: 1243–48), in the current context cutting wages can lead to 'overgrazing' aggregate demand.

The chapter is organized as follows. The following section reviews some empirical aspects of the dynamics of the wage share. The next section introduces a two country macroeconomic model of demand and distribution in which the wage shares and output of the two economies are codetermined, and it presents some scenarios of economic interaction and policy coordination failure. The final section looks at distribution, economic activity and the coordination failure.

## **Wage share and policy**

The wage share is subject to both cyclical and structural changes which are to a large extent affected by policy and institutional changes, especially those directly relating to the labour market.

Since the classical economists conceived functional distribution as the main determinant of economic dynamics, changes in the wage share have been of key analytical importance. However, with the demise of the classical economics and the dominance of neoclassical economics, the wage share has not attracted much attention from economists and,

in many cases, tends to be considered of scarce relevance for economic decisions and outcomes. Such historical shifts in economic thinking were strongly influenced or supported by the empirical constancy of the wage share, which was observed by influential economists in the first half of the twentieth century, such as Bowley and Douglas. These empirical findings have since been known as Bowley's Law and also been incorporated into Cobb-Douglas production function, which typically assumes the constancy of functional income distribution. However, some reservations were expressed by Keynesian economists, including Keynes himself who described this empirical constancy as 'a bit of a miracle' (Keynes 1939), and later Solow who questioned the reliability of the empirical evidence (Solow 1958). In recent years there has been another dramatic rethinking (if not shift), again with new empirical evidence that indicates medium-run downward changes in the wage share in advanced economies. In particular, the evidence documented at the global level by numerous international agencies (EC 2007; ILO 2008, 2010; ILO 2012; ILO/IILS 2011, 2012; IMF 2007; OECD 2011, 2012) offers unquestionable empirical facts concerning the downward tendency of the wage share. The most recent review of evidence, which includes a number of developing countries, has confirmed the global nature of this trend (ILO 2008; Stockhammer 2012). Expectedly, the shrinking share of wages is closely tied to another empirical regularity concerning discrepancies between wage growth and labour productivity growth (see ILO 2010 for a recent review).

It is well known that the wage share at the national aggregate level needs to be examined with great care, particularly given the impacts of sectoral compositions on it (i.e. the expansion of the service sector, which may have lower wage share, might be the main cause of the falling wage share). However, while it is not possible to deny the existence of such composition effects, the declining trends within the sector are far greater. As Figure 7.1 shows, the wage share in the manufacturing sector between the 1990s and the 2000s fell quite considerably in many OECD countries. In fact, in most countries, the wage share in the manufacturing sector tends to be more subject to changes than that of other sectors (and, therefore, of the aggregate level), which provides an important empirical context for our model that examines the economic outcomes of changes in the wage share in two competing countries with open economy.

Figure 7.1 shows the difference between the 2005–2007 average and the 1993–1995 average of the wage share in the manufacturing sector. Figure 7.2 shows the wage shares of some selected OECD economies by sector.

These trends beg a number of questions for economic analysis and policies. One important one is why the wage share has been falling.

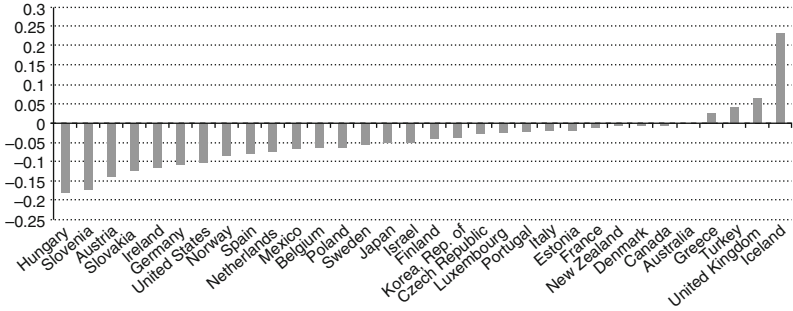


Figure 7.1 Changes in wage share: Difference between 2005–7 average and 1993–5 average

Source: Authors' calculation from OECD statistics.

Many studies that recognized the declining tendency of the wage share followed a usual path and put forward technological changes (more specifically, skill-biased technological changes) as the main cause (e.g. EC 2007; IMF 2007). This explanation is certainly in line with the standard macroeconomic models, and in this understanding the changes in the wage share are not particularly a matter of concern for economists and policy-makers, as they represent part of ‘natural law of the market’.

However, recent empirical findings point to the roles of policies, especially labour market policies (see ILO/IILS 2011; Stockhammer 2008, 2012) such as collective bargaining, wage policies and social security system. Most recently, OECD (2012) singled out minimum wages and collective bargaining as the major determinants of the wage share. These findings are of great importance to the present analysis, as they imply the possibility that the wage share is changeable through policy interventions. Incidentally, the reversal in the wage share since the 1980s coincided with the period of labour market deregulations.

It is also interesting to note that these two contrasting groups of empirical studies concerning the determinants of the wage share are in agreement on the role of globalization. Most of the empirical studies since Harrison (2002) found that globalization tended to reduce the wage share. Yet, it is not clear what channelling mechanism is working between globalization and the wage share. For instance, globalization may have effects of relocating resources and changing factor prices and thereby changing the wage share. This may be called ‘economic effects’. At the same time, globalization may have ‘threat effects’ which prompt policy shifts and weaken workers’ bargaining power, thereby reducing the wage share.

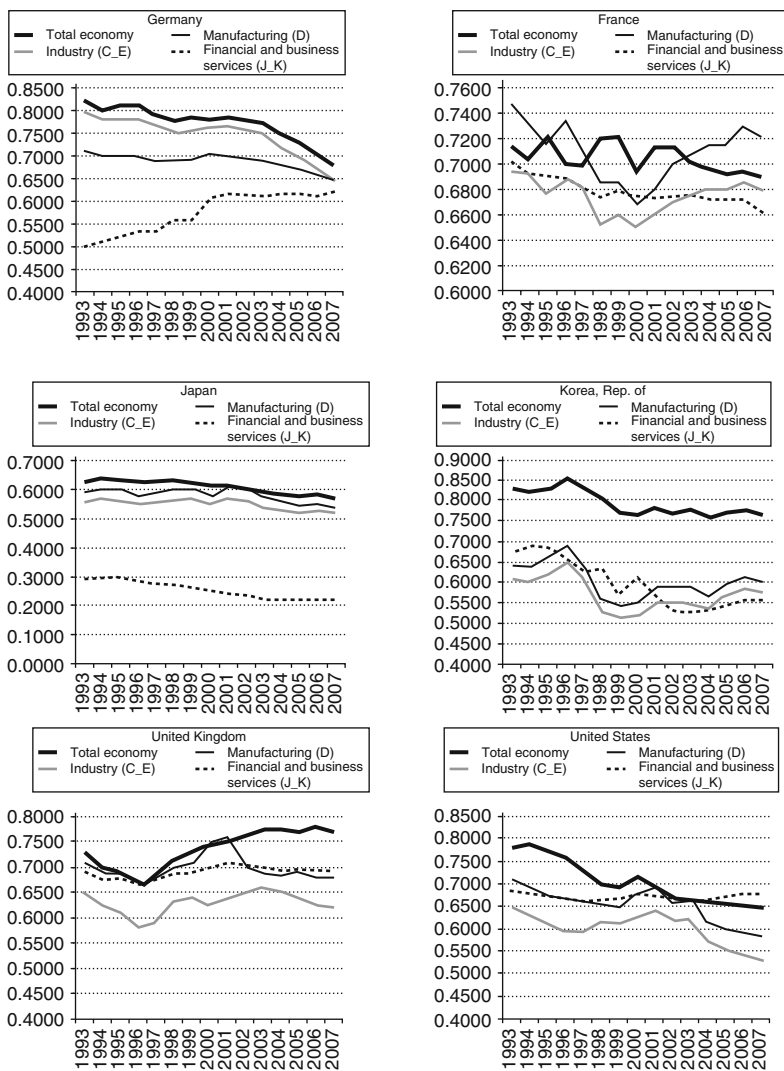


Figure 7.2 Wage share by sector  
 Source: Authors' calculation from OECD statistics.

All in all, it is possible to make two observations for our analysis. First, the wage share can be changed through policies (and also through policy changes under the 'threat' of globalization). Second, globalization, or more specifically, competition for the global market, provides a

critical economic framework in which the policy-driven changes in the wage share play out with sub-optimal economic outcomes. These two empirical findings serve as a basis for the model which will be developed in the next section.

### A model of distribution and output determination

There are two open economies, country A and country B, which are structurally identical. Variables of each country are denoted by the corresponding subscript. The wage share of income is denoted by  $\psi$  (with  $1-\psi$  being the profit share),  $u$  is output over capital (here used as an index of capacity utilization),  $\rho$  is the real exchange rate defined as the ratio between the price levels of country B and A. Domestic consumption (per unit of capital) of country A,  $c\psi_A u_A$ , depends on wages and on the propensity to consume  $c$ . Investment per unit of capital (the growth rate of capital) is  $\alpha(1-\psi_A) + \beta u_A + b$ . It depends on the profit share,  $(1-\psi_A)$ , the sensitivity to profits,  $\alpha$ , an accelerator  $\beta$  and an autonomous component  $b$ . Exports,  $\mu u_B + \delta\rho$ , depend on foreign income  $u_B$ , and the real exchange rate according to the coefficients  $\mu$  and  $\delta$ , respectively. Symmetrically, imports (in foreign prices),  $\mu u_A + \delta/\rho$ , depend on domestic income and on the inverse of the exchange rate. The output decomposition of country B is analogous with the real exchange rate inverted. Equilibrium in both economies is obtained when output supply equals demand:

$$u_A = c\psi_A u_A + \alpha(1-\psi_A) + \beta u_A + b + (\mu u_B + \delta\rho) - \rho(\mu u_A + \frac{\delta}{\rho}), \quad (\text{Eq. 7.1})$$

$$u_B = c\psi_B u_B + \alpha(1-\psi_B) + \beta u_B + b + (\mu u_A + \frac{\delta}{\rho}) - \frac{1}{\rho}(\mu u_B + \delta\rho). \quad (\text{Eq. 7.2})$$

Equations 7.1 and 7.2 show the interdependence of output of both economies for a given configuration of distribution and the real exchange rate. Capacity utilization in the two economies are jointly determined and depend on the real exchange rate and on the distribution of income in both of them. Define:

$$\Delta_A = 1 - (c\psi_A + \beta - \rho\mu), \quad (\text{Eq. 7.3})$$

$$\Gamma_A = \alpha(1-\psi_A) + b + \delta\rho - \delta, \quad (\text{Eq. 7.4})$$

$$\Delta_B = 1 - \left( c\psi_B + \beta - \frac{\mu}{\rho} \right), \quad (\text{Eq. 7.5})$$

$$\Gamma_B = \alpha(1 - \psi_B) + b + \frac{\delta}{\rho} - \delta \quad (\text{Eq. 7.6})$$

where  $\Delta$  collects the demand leakages that depend on output and  $\Gamma$  the output-independent injections to demand.

The equilibrium in one economy for a given output level in the other economy is

$$u_A = \frac{\Gamma_A + \mu u_B}{\Delta_A}, \quad (\text{Eq. 7.7})$$

$$u_B = \frac{\Gamma_B + \mu u_A}{\Delta_B} \quad (\text{Eq. 7.8})$$

Output in one country depends on its own (output-independent) injections,  $\Gamma$ , and the output of the other economy mediated by the sensitivity of imports to income,  $\mu$ . All these injections are augmented by the standard Keynesian multiplier  $1/\Delta$ .

The solution of equations 7.1 and 7.2 is

$$u_A = \frac{\mu\Gamma_B + \Delta_B\Gamma_A}{\Delta_A\Delta_B - \mu^2}, \quad (\text{Eq. 7.9})$$

$$u_B = \frac{\mu\Gamma_A + \Delta_A\Gamma_B}{\Delta_A\Delta_B - \mu^2} \quad (\text{Eq. 7.10})$$

Output of country A, for instance, depends on: (1) demand injections of country B via country A exports  $\mu\Gamma_B$ , (2) its own injections,  $\Gamma_A$ , reduced by the other economy's savings and import leakages  $\Delta_B$  and (3) the composite multiplier  $1/(\Delta_A\Delta_B - \mu^2)$ . As  $\Delta_A$  and  $\Gamma_A$  depend on  $\psi_A$  and  $\rho$ , while  $\Delta_B$  and  $\Gamma_B$  depend on  $\psi_B$  and  $\rho$ , then both  $u_A$  and  $u_B$  depend the income distribution in both economies and on the real exchange rate.

Distribution and the real exchange rate, on the other hand, depend on the dynamics of prices, wages and productivity, which are in turn a function of output and distribution. A full macroeconomic model of output and distribution determination is presented in the Appendix. It is shown that the real exchange rate, the relative price of the two



outputs, is determined by the mechanism of price determination in the two economies. Under the assumption that inflation is determined by conflicts on distribution and the relative prices of outputs, then the real exchange rate can take the form

$$\rho = \varepsilon \sqrt{\frac{\psi_B}{\psi_A}} \quad (\text{Eq. 7.11})$$

where  $\varepsilon$  is a composition of parameters of the two-country price functions. The real exchange rate defined in equation 7.11 is an increasing function of the relative size of the wage share in country B and country A. Such an extreme case is obtained under strong assumptions about the role of income distribution and the real exchange rate on price determination and, therefore, may overestimate the link between distribution and competitiveness. This is, however, instrumental to the question of whether strong competitive gains of wage reductions (that affect distribution) can increase output of each economy that is pursuing such policy.

With the real exchange rate as a function of distribution only, equations 7.9 and 7.10 map output levels  $u_A$  and  $u_B$  as functions of  $\psi_A$  and  $\psi_B$ .

### **Distribution, economic activity and the coordination failure**

Such a simple model of aggregate demand and the assumption that policies can have an intended effect on distribution allow analysis of coordination and strategic interaction problems between economies.

From the model solution it is clear that the positive feedback effects of a single economy's policy create a *complementarity* in the economic policies of all of them. A typical complementarity is choosing a language, a computer software or a means of exchange for transaction based on what other individuals would choose. The payoff of such action depends on how widespread the action itself.

The most evident form of complementarity at the global level is the creation of aggregate demand that sustains any country output and income. Aggregate demand for any economy depends on income distribution, the real exchange rate and the other economy's income. The model represented in equations 7.9 and 7.10 shows this interdependence of output  $u_A$  and  $u_B$  via incomes and real exchange rate so that each country output is a function of both wage shares,  $\psi_A$  and  $\psi_B$ .

If global demand is sustained by global consumption and investment responds strongly to output growth, then a generalized wage increase can boost global demand given the complementarity between economies. If, however, rising wages have 'ceteris paribus' a negative effect on the competitiveness of any single economies, which loses demand via trade balance effects, then reducing wages may be seen as means to increase output demand. Contrary to the case of a single language, software or money, each decision maker has an incentive to move in the opposite direction of the positive feedback and this turns the existing complementarity into a problem.

Not only do policies affecting distribution in one country affect output in the other, but the strategic complementarity of creating aggregate demand creates a situation where the pursuit of self-interested policies by each country may lead to undesired outcomes for that country as well as for the other. The fact that the action of any single economy matters for the outcomes of the other and that self-interested policy actions are carried out without taking into consideration their effect on other economies create a strategic interdependence and the possibility of a coordination problem. When the outcome of such interaction is a situation that no country would have chosen, then there is a fallacy of composition and a coordination failure.

In the present setting, countries may desire to use their policy instruments to obtain a distribution that favours internal and external demand for their economy taking into account the possible choices of the other economy. A first intuitive problem is that policies that affect the real exchange rate both divert demand from one economy to the other and have a distributional effect on income by changing the domestic demand and, therefore, the global demand level. Such complex interaction can take different forms depending on the structure of the economies and their policy options.

Some possible forms of this interaction are analysed by von Arnim et al. (2012) who developed a two-economy model that explicitly accounts for a distributional functional relation and endogenous determination of the wage share. Observing the dynamics around an initial equilibrium, they show that if economies are wage-led in autarky and profit-led with trade, then a cut on the wage share reduces global demand.<sup>3</sup> Starting from a given wage configuration they show that while the effect on the other economies is unambiguously negative, the devaluing economy can also be worse off due to the effect on the global and domestic demand.

In the present model wage shares are assumed to be somehow controlled by policy and institutional change. This simplifying assumption will allow representation of the policy interaction and possible outcomes in a graphical form, while not altering the essence of the analysis. In a more complete model, such as the one in the Appendix, the two wage shares are endogenously determined and are not under the full control of any country. This is because a government can change its labour market policies, institutions, inflation and firms' price setting aiming at a 'desired' distribution of income, yet the country's wage share will also depend on the policies and institutions of the other country via income and demand effects. In the following this complexity is mitigated by the assumption that the economies are identical, that the strategic interaction is symmetrical and that the chosen policies are the same in the equilibrium.<sup>4</sup>

This implies that if both economies are taking independently the same action, such as steering labour market policies and institutions over the medium to long run to obtain a desired level of wage share, then this policy becomes effective. Therefore, the strategic interaction of the two economies that maximize their output level can be analysed by targeting a specific income distribution and real exchange rate. Policy instruments in the labour, product and money markets are left implicit.

It is assumed that the wage share must be included between a conventional  $\psi_{max}$  and  $\psi_{min}$ , again, assumed to be the same for the two economies. These two conventional boundaries set, respectively, the minimum wage and minimum profit share socially acceptable in the economy. Such boundaries are assumed to be exogenous and independent of the rest of the system and the output level is assumed to be the 'policy objective' of each economy.<sup>5</sup>

Concepts widely used in game theory such as 'best response function', 'dominance', 'Nash equilibrium' and 'Pareto efficiency' represent useful tools for describing and analysing the interaction of the two economies. The best response of a country is a function that determines the actions to be taken by that country to maximize its objective function for any given action of the others. In the present setting, output is maximized by pursuing policies affecting the domestic wage share given the economic structure and the other country distributional target.<sup>6</sup> The definition of best response of any economy to the action of the other helps defining two solution concepts: a configuration of actions emerging from dominant strategies and a Nash equilibrium. An action can be 'dominated' (and, therefore, it will never be taken) if it is not a best

response for any of the other country's possible actions. On the other hand, a 'dominant' strategy is the best response whatever the other country does. A configuration of strategies is a Nash equilibrium if it belongs to the best response function of both economies. Therefore, a Nash equilibrium may not be unique and whether the two economies end up at one equilibrium or another will depend on beliefs, conventions or history. If equilibria are ranked according to their Pareto efficiency, then there can be situations in which Pareto inferior outcomes emerge either as dominant strategies (as in a 'Prisoner's dilemma' situation) or simply as a Nash equilibrium (as in 'Assurance' games). The coordination problem consists in recognizing that better outcomes for each economy are possible and that they can be obtained either by devising institutions that modify the payoff structure (as in 'Prisoner's dilemma' situations) or simply encouraging a change in conventions and taking a coordinated action to move to a better economic outcome (as in 'Assurance' games).

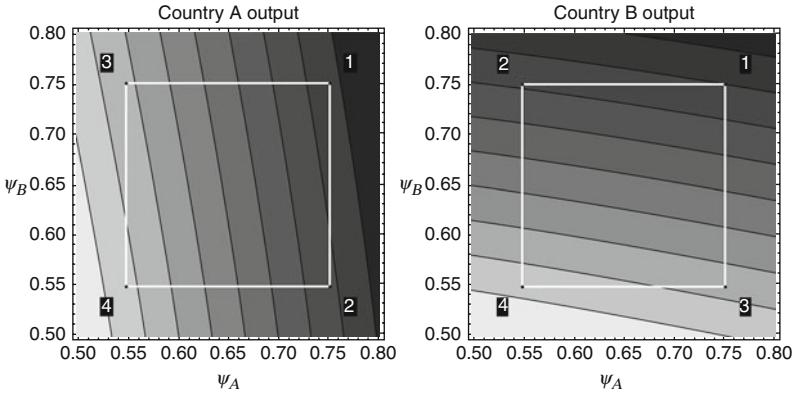
### Invisible hand or coordination problem?

#### *Profit and wage-led paradises*

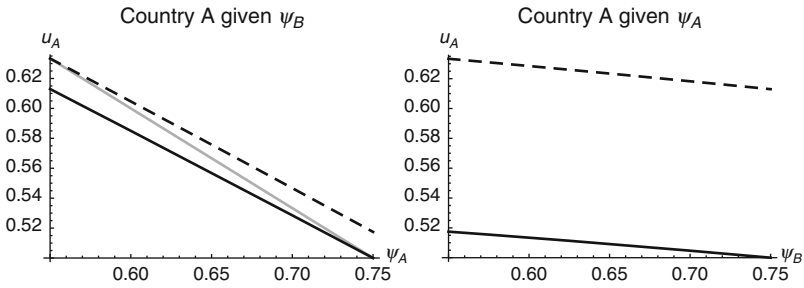
Suppose that a reduction in the wage share increases profit margins and investment and this demand injection is not fully offset by the reduction in consumption. If the economy were closed it would be called 'profit-led'. Moreover, if the wage reduction improves competitiveness and total demand is increased by net exports, the economy can also be labelled as 'profit-led'.

Figure 7.3 left panel shows the payoff of country A (output level) given the actions (determination of the wage share through policy and institutional change) of country A (x axis) and country B (y axis). The right panel shows the payoff of country B given the actions of country A (x axis) and country B (y axis). Contours represent functional relation between two country wage shares yielding a given output level. Darker contours represent lower level of output. Given the assumption of identical coefficients for the two countries, country B payoffs, Figure 7.3 right panel, mirrors those of country A, left panel, along the bisecting line. It is possible to infer the joint outcome of any configuration of actions by looking at one economy. The white boundaries mark the  $\psi_{max}$  and  $\psi_{min}$  constraints. For expositional purpose they are set at 0.55 and 0.75, respectively.<sup>7</sup>

The shape and position of the payoff (output) contours vary with the aggregate demand coefficients. Under this configuration of aggregate demand coefficients, country A will choose  $\psi_A = \psi_{min}$  if it expects that



**Figure 7.3** Profit-led paradise – outputs  
 Note: Left panel:  $u_A$  contours as a function of  $\psi_A$  and  $\psi_B$ . Right panel:  $u_B$  contours as a function of  $\psi_A$  and  $\psi_B$ .  $\epsilon = 1, \mu = 0.5, \delta = 0.5, c = 0, \beta = 0.25, \alpha = 0.5$  and  $b = 0.25$ .



**Figure 7.4** Profit-led paradise – wages  
 Note: Left panel:  $u_A$ , as a function of  $\psi_A$ , with  $\psi_B = \psi_{max}$  (solid black line) and  $\psi_B = \psi_{min}$  (dashed line). Closed economy analog  $u_A$ , as a function of  $\psi_A$  (grey line). Right panel:  $u_A$  as a function of  $\psi_B$ , when  $\psi_A = \psi_{max}$  (solid black line) and  $\psi_A = \psi_{min}$  (dashed line).

$\psi_B = \psi_{max}$ , it will choose  $\psi_A = \psi_{min}$  if  $\psi_B = \psi_{min}$  and still  $\psi_A = \psi_{min}$  if it expects  $\psi_B$  to be anywhere between  $\psi_{max}$  and  $\psi_{min}$ . Symmetrically, country B will choose  $\psi_B = \psi_{min}$  if it expects that  $\psi_A = \psi_{max}$ , it will choose  $\psi_B = \psi_{min}$  if  $\psi_A = \psi_{min}$  and again  $\psi_B = \psi_{min}$  if it expects  $\psi_A$  to be anywhere between  $\psi_{max}$  and  $\psi_{min}$ . As ‘corner’ output levels seem to matter as possible solutions of the interaction, Figure 7.3 shows a ranking 1 to 4 of the possible payoffs for each country.

Figure 7.4 shows in more detail the relation between the output of country A and the wage shares. In particular the left panel shows the output of

country A,  $u_A$ , as a function of country A wage share,  $\psi_A$  when the other country sets its wage share to the maximum,  $\psi_B = \psi_{max}$  (solid black line) and to a minimum,  $\psi_B = \psi_{min}$  (dashed line). The same relation is shown assuming that the economy is closed to trade so that the other country wage share does not matter (grey line). Such functions show the relation between one country's payoff and its policies (the wage share) for a given policy of the other country. The strategic interaction of the two economies, viewed from country A's perspective, is apparent in the right panel of Figure 7.4, which shows the relation between  $u_A$  and the *other country's* wage share,  $\psi_B$ , when  $\psi_A = \psi_{max}$  (solid black line) and  $\psi_A = \psi_{min}$  (dashed line). As  $\psi_A = \psi_{min}$  lies above the  $\psi_A = \psi_{max}$  line for any value of  $\psi_B$ , the strategy of setting the wage share at  $\psi_{min}$  dominates all others. Table 7.1 shows the interaction in strategic form.

Reducing wage share raises output in each economy and output is maximized at  $\psi_A = \psi_{min}$  for any choices of country B and  $\psi_B = \psi_{min}$  for any choices of country A (Figure 7.3 and Figure 7.4, left panels). Therefore, reducing wages is a dominant strategy and efficient as  $\psi_A = \psi_{min}$  and  $\psi_B = \psi_{min}$  yields the higher output for both economies (Figure 7.4, right panel and Table 7.1): the 'invisible hand' rules.

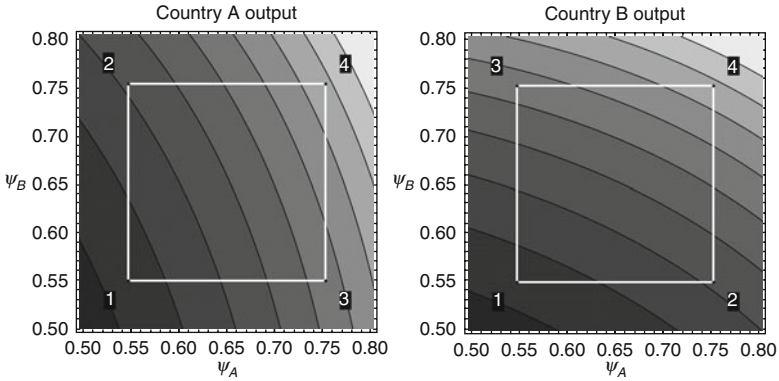
In this scenario, the wage share is a 'private' and 'public' problem as it reduces output in each economy individually and has a negative effect on global demand.

As is usually the case, it is possible to think of just an antithetical case where wage shares are sustaining output both with and without external trade. The domestic demand injections are both affecting investment demand through the accelerator effect and more than offset the negative competitive effect of wages on trade. The economy is wage led both as a closed and open system,  $\psi = \psi_{max}$  is the dominant strategy for both economies and  $(\psi_{max}, \psi_{max})$  is both a Nash equilibrium and a

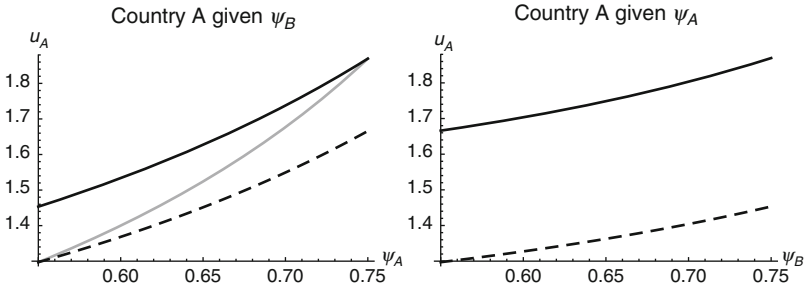
Table 7.1 Profit-led paradise – strategic form

		Country A	
		$\psi_{max}$	$\psi_{min}$
Country B	$\psi_{max}$	1, 1	2, 3
	$\psi_{min}$	3, 2	4, 4

Note: The numbers of the matrix indicate ranking and not actual output levels.



**Figure 7.5** Wage-led paradise – outputs  
 Note: Left panel:  $u_A$  contours as a function of  $\psi_A$  and  $\psi_B$ . Right panel:  $u_B$  contours as a function of  $\psi_A$  and  $\psi_B$ .  $\epsilon = 1, \mu = 0.5, \delta = 0.5, c = 0.75, \beta = 0.15, a = 0.15$  and  $b = 0.5$ .



**Figure 7.6** Wage-led paradise – wages  
 Note: Left panel:  $u_A$ , as a function of  $\psi_A$ , with  $\psi_B = \psi_{max}$  (solid black line) and  $\psi_B = \psi_{min}$  (dashed line). Closed economy analog  $u_A$ , as a function of  $\psi_A$  (grey line). Right panel:  $u_A$  as a function of  $\psi_B$ , when  $\psi_A = \psi_{max}$  (solid black line) and  $\psi_A = \psi_{min}$  (dashed line).

Pareto efficient outcome. The invisible hand rules again in this parallel and antithetical world! Figures 7.5 and 7.6 and Table 7.2 show this possibility.

*A ‘pure competitiveness’ view*

Policy discussion is often centred on the need to improve competitiveness by reducing wage costs and neglects the effect of wage reduction on aggregate demand. According to this perspective the distributional consequences of wage reduction do not affect domestic demand and

total demand can be raised by increasing competitiveness. In a multi-country setting, however, if economies are profit-led and global demand does not depend on wages, competitive gains become a zero-sum-game and output demand is simply ‘diverted’ from one economy to the other. Given the symmetry of our set up beggar-thy-neighbour attempts of the two economies cancel out and output would not increase for any of them.

Figure 7.7 shows the two economies under the assumption that the domestic demand component of output (investment and consumption) does not depend on the wage share and that the effect of domestic and foreign wage share on output depends only on the effect of wages on the real exchange rate. From Figure 7.7 it is apparent that the levels of output as function of the wage shares do not change if the wages in the two countries are changed proportionally.

Table 7.2 Wage-led paradise – strategic form

		Country A	
		$\psi_{max}$	$\psi_{min}$
Country B	$\psi_{max}$	4, 4	3, 2
	$\psi_{min}$	2, 3	1, 1

Note: The numbers of the matrix indicate ranking and not actual output levels.

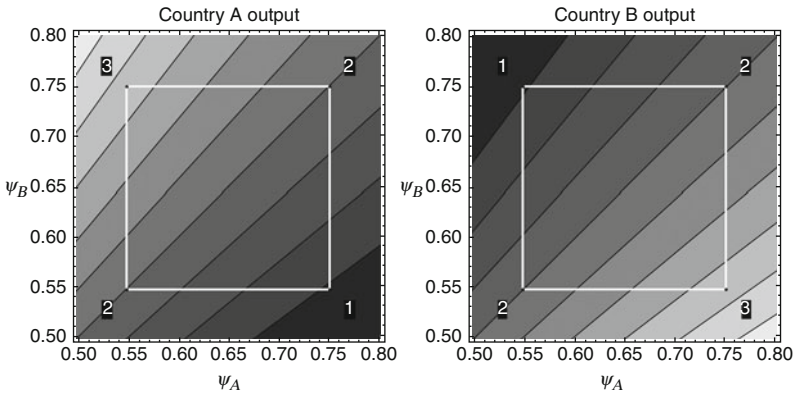


Figure 7.7 No distributional effects on domestic demand I – outputs

Note: Left panel:  $u_A$  contours as a function of  $\psi_A$  and  $\psi_B$ . Right panel:  $u_B$  contours as a function of  $\psi_A$  and  $\psi_B$ .  $\epsilon = 1$ ,  $\mu = 0.5$ ,  $\delta = 0.5$ ,  $c = 0$ ,  $\beta = 0.05$ ,  $\alpha = 0$  and  $b = 0.5$ .



The ‘pure competitiveness’ view (as in Figure 7.8, left panel) represents a strong case for any individual economy to force wages down. From the economy A’s perspective, pushing wages to a minimum maximizes output for any possible country B wage (Figure 7.8, right panel). Seeking to obtain a  $\psi_{min}$  is the dominant strategy for both economies (see also Table 7.3). Yet, there is a problem of composition of these uncoordinated strategies. As apparent in Figure 7.7, the output contours run omothetically from the origin so that output level at  $(\psi_A = \psi_{max}$  and  $\psi_B = \psi_{max})$  is equal to  $(\psi_A = \psi_{min}$  and  $\psi_B = \psi_{min})$ : by taking action in the independent pursuit of their output maximization, the two economies are no better off than at any other level of the wage share between the maximum and the minimum.

This unrealistic example shows a mild form of fallacy of composition in the action of the two economies even assuming the suppression of the function of wages as source of domestic demand.

It raises another paradox of the ‘pure competitiveness view’: it is possible to think of a situation where these open economies are wage led,

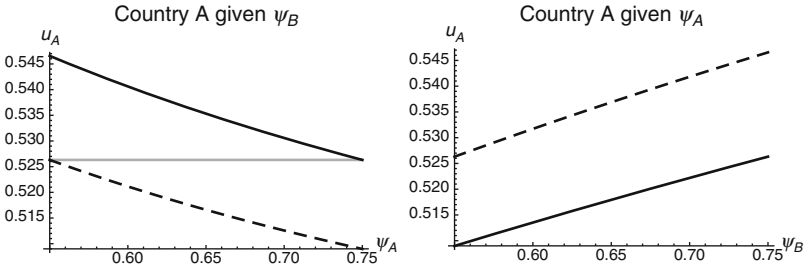


Figure 7.8 No distributional effects on domestic demand I – wages  
 Note: Left panel:  $u_A$ , as a function of  $\psi_A$ , with  $\psi_B = \psi_{max}$  (solid black line) and  $\psi_B = \psi_{min}$  (dashed line). Closed economy analog  $u_A$ , as a function of  $\psi_A$  (grey line). Right panel:  $u_A$  as a function of  $\psi_B$ , when  $\psi_A = \psi_{max}$  (solid blue line) and  $\psi_A = \psi_{min}$  (dashed line).

Table 7.3 No distributional effects – strategic form

		Country A	
		$\psi_{max}$	$\psi_{min}$
Country B	$\psi_{max}$	2, 2	1, 3
	$\psi_{min}$	3, 1	2, 2

Note: The numbers of the matrix indicate ranking and not actual output levels.

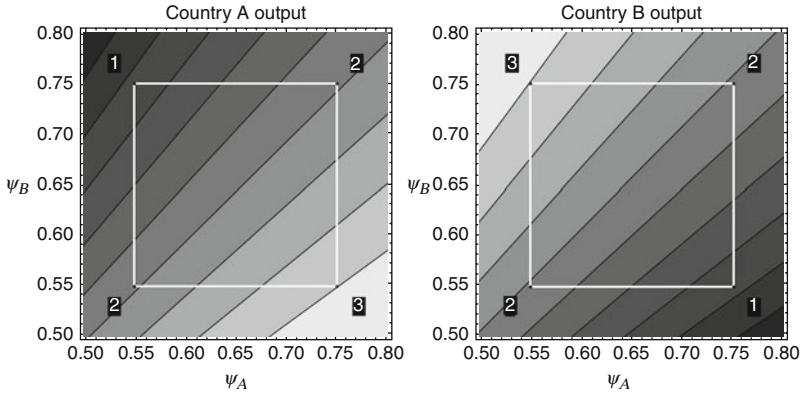


Figure 7.9 No distributional effects on domestic demand II – outputs  
 Note: Left panel:  $u_A$  contours as a function of  $\psi_A$  and  $\psi_B$ . Right panel:  $u_B$  contours as a function of  $\psi_A$  and  $\psi_B$ .  $\epsilon = 1$ ,  $\mu = 0.5$ ,  $\delta = 0.5$ ,  $c = 0$ ,  $\beta = 0.6$ ,  $\alpha = 0$  and  $b = 0.5$ .

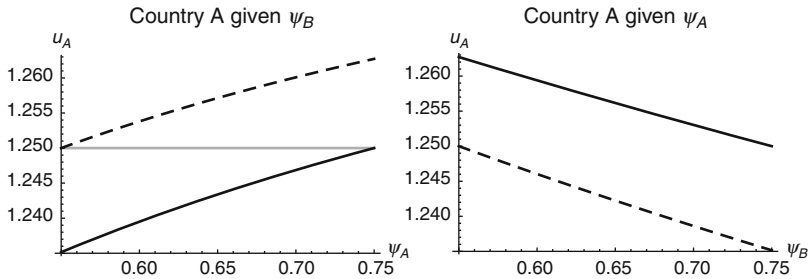


Figure 7.10 No distributional effects on domestic demand II – wages  
 Note: Left panel:  $u_A$ , as a function of  $\psi_A$ , with  $\psi_B = \psi_{max}$  (solid black line) and  $\psi_B = \psi_{min}$  (dashed line). Closed economy analog  $u_A$ , as a function of  $\psi_A$  (grey line). Right panel:  $u_A$  as a function of  $\psi_B$ , when  $\psi_A = \psi_{max}$  (solid black line) and  $\psi_A = \psi_{min}$  (dashed line).

thanks to a combination of large income elasticity, a strong response of investment to demand output and autonomous demand injections (Figures 7.9 and 7.10).

This time increasing wages raises output for each economy. Yet, again, the same strategy for all economies leaves output unchanged.

**Prisoner’s dilemma or pure coordination problem?**

Output–distribution relations can be very complex in reality and ‘non-monotone’, meaning that income distribution changes can have

different effects on output demand depending on the size of wage share. Competitiveness effect can become relatively less important when the domestic sector is large enough and consumption and investment–output feedbacks dominate the trade balance effects for large values of the wage share. If global demand is supported by wages (via consumption and investment through acceleration effects) but economies are not monotonously wage-led, then the individual policy incentive of

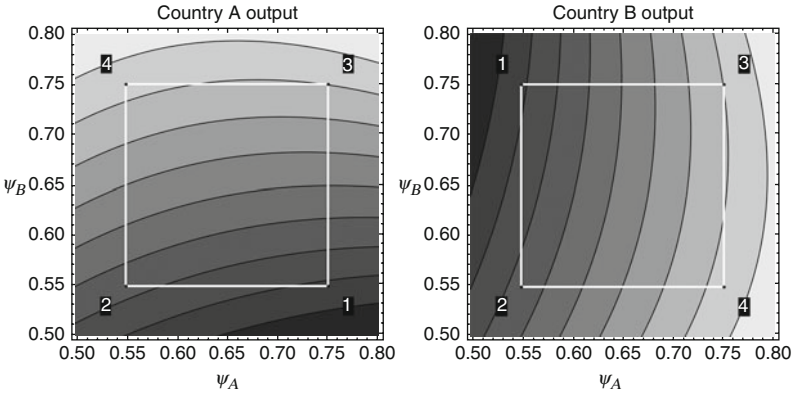


Figure 7.11 Prisoner's dilemma – outputs

Note: Left panel:  $u_A$  contours as a function of  $\psi_A$  and  $\psi_B$ . Right panel:  $u_B$  contours as a function of  $\psi_A$  and  $\psi_B$ .  $\epsilon = 1, \mu = 0.1, \delta = 0.9, c = 0.75, \beta = 0.1, \alpha = 0.13$  and  $b = 0.25$ .

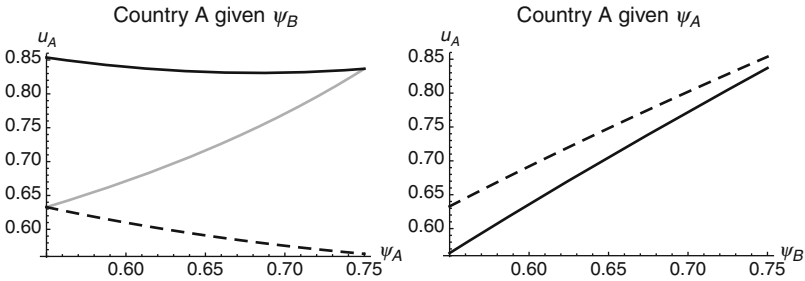


Figure 7.12 Prisoner's dilemma – wages

Note: Left panel:  $u_A$ , as a function of  $\psi_A$ , with  $\psi_B$  (solid black line) and  $\psi_B = \psi_{min}$  (dashed line). Closed economy analog  $u_A$ , as a function of  $\psi_A$  (grey line). Right panel:  $u_A$  as a function of  $\psi_B$ , when  $\psi_A = \psi_{max}$  (solid black line) and  $\psi_A = \psi_{min}$  (dashed line).

economies pursuing their output maximization can be inconsistent with their welfare.

Figure 7.12 shows in more detail the relation between the output of country A and the wage shares. In this specific case, when  $\psi_B$  is large, the economy A is profit-led for small values of its own wage share and then becomes wage-led, while it is profit-led if  $\psi_B$  is sufficiently small. The strategic interaction of the two economies, viewed from country A perspective, is apparent in the right panel of Figure 7.12, which shows the relation between  $u_A$  and the other country's wage share,  $\psi_B$ , when  $\psi_A = \psi_{max}$  (solid black line) and  $\psi_A = \psi_{min}$  (dashed line). As  $\psi_A = \psi_{min}$  lies above the  $\psi_A = \psi_{max}$  line for any value of  $\psi_B$ , the strategy of setting the wage share at  $\psi_{min}$  dominates all others.

Figure 7.12 shows that in general a change in the wage share of the other country can change this relationship by either simply shifting the curve or changing its shape and turning the output completely wage- or profit-led. In this particular case, a profit-led economy can become wage led for sufficiently high values of  $\psi_A$  and  $\psi_B$ . If, however, the output at  $\psi_A = \psi_{max}$  is lower than the output at  $\psi_A = \psi_{min}$  for any value of  $\psi_B$ , then  $\psi_A = \psi_{max}$  is dominated and  $(\psi_{max}, \psi_{max})$  cannot be an equilibrium. Table 7.4 represents the strategic form of the interaction described already: the familiar Prisoner's dilemma structure.

As the Prisoner's dilemma case shows, a dominant strategy can be Pareto inferior even if the economies are wage-led for certain levels of  $\psi_A$  and  $\psi_B$ . However, the fact that the closed economy analog (grey line in Figure 7.12, left panel) is wage-led is a necessary condition (and again not sufficient) for  $(\psi_{max}, \psi_{max})$  to be a Pareto superior outcome relative to  $(\psi_{min}, \psi_{min})$ .

The Prisoner's dilemma is the most severe form of coordination problem: the worst outcome is obtained as rational self-interested action

Table 7.4 Prisoner's dilemma – strategic form

		Country A	
		$\psi_{max}$	$\psi_{min}$
Country B	$\psi_{max}$	3, 3	1, 4
	$\psi_{min}$	4, 1	2, 2

Note: The numbers of the matrix indicate ranking and not actual output levels.

of both economies that cannot commit to enforce a deal and obtain a Pareto efficient outcome. The fact that many economies have been pursuing wage moderation and experienced low growth performances tells us that it can be a very realistic scenario.

If raising wages reduces output when the other economy wage share is low, but increases output significantly when the other economy's wage share is high, then there can be two Nash equilibria at  $(\psi_{min}, \psi_{min})$  and  $(\psi_{max}, \psi_{max})$  and the high wages configuration can be superior outcome. Figures 7.13 and 7.14 left panels show a situation in which demand becomes strongly wage-led when the other economy's wage share is high.

Figure 7.14 right panel shows that  $\psi_A = \psi_{max}$  (solid black line) becomes the best response of country A and dominates  $\psi_A = \psi_{min}$  (dashed line) for  $\psi_B$  larger than 0.5. Table 7.5 reports the interaction in normal form.

This kind of interaction is known in game theory as 'Assurance Game'.<sup>8</sup> As mentioned earlier, a famous example of that is the so called 'Tragedy of the Commons': a situation in which a pasture is overgrazed by self-interested herders that cannot enforce an agreement of limiting their use of the pasture and benefit from the better exploitation of it. In such interaction, no single strategy dominates on the whole domain of possible strategies. It is possible to obtain a *universal* improvement by shifting from an inferior to a superior equilibrium. However, by definition a Nash equilibrium is a configuration of strategies from which no

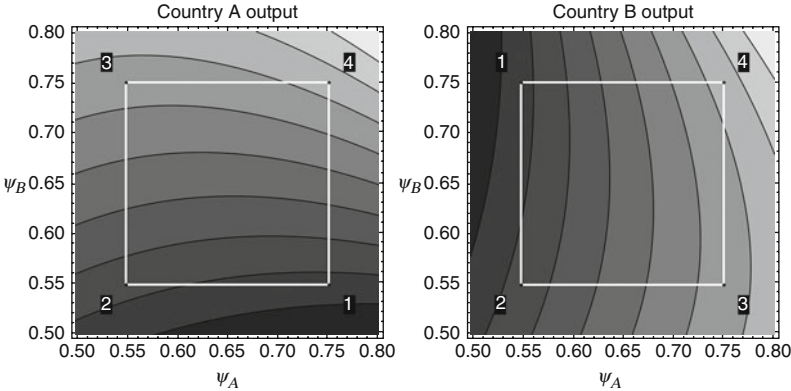


Figure 7.13 Pure coordination problem – outputs  
 Note: Left panel:  $u_A$  contours as a function of  $\psi_A$  and  $\psi_B$ . Right panel:  $u_B$  contours as a function of  $\psi_A$  and  $\psi_B$ .  $\epsilon = 1, \mu = 0.1, \delta = 0.9, c = 0.75, \beta = 0.2, \alpha = 0.13$  and  $b = 0.2$ .

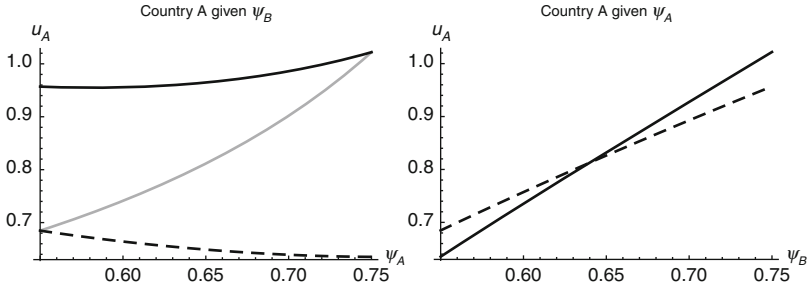


Figure 7.14 Pure coordination problem – wages

Note: Left panel:  $u_A$ , as a function of  $\psi_A$ , with  $\psi_B = \psi_{max}$  (solid black line) and  $\psi_B = \psi_{min}$  (dashed line). Closed economy analog  $u_A$ , as a function of  $\psi_A$  (grey line). Right panel:  $u_A$  as a function of  $\psi_B$ , when  $\psi_A = \psi_{max}$  (solid black line) and  $\psi_A = \psi_{min}$  (dashed line).

Table 7.5 Pure coordination problem – strategic form

		Country A	
		$\psi_{max}$	$\psi_{min}$
Country B	$\psi_{max}$	4, 4	1, 3
	$\psi_{min}$	3, 1	2, 2

Note: The numbers of the matrix indicate ranking and not actual output levels.

single player would like to deviate given the expectation on the other players' choice. Policy coordination requires supporting the expectation that policy action to obtain the best outcome can be taken and will be taken by all the economies. Therefore, the Prisoner's dilemma and the 'pure coordination' problems have different implications for the decision-making and enforcement processes and represent different challenges for global economic governance.

### Conclusions

Functional distribution has a well-known role in determining aggregate demand by affecting components that respond to changes in wages and profit shares. Wage and price setting mechanisms affect both external competitiveness and income distribution and these can have contrasting effects on different components of demand. Whether a single

economy is profit- or wage-led is an empirical question. Trade openness makes the output–distribution relation more complicated as output levels and distribution become globally determined through demand linkages and policy actions.

This chapter explores an aspect of this economic interaction. Namely, the interdependence of policy actions and institutional change aimed at promoting growth by favouring a distribution towards or against wages. A wide-ranging taxonomy of scenarios emerges. Raising wage shares could simply undermine growth and there would not be any incentive in doing so in a ‘profit-led paradise’. It could be just the opposite in a ‘wage-led paradise’. Luckily, in both cases individual countries’ incentives are aligned with socially desirable outcomes through the ‘invisible hand’. Economies can pursue their own interests and uncoordinated outcomes happen to be the best possible ones. If likely outcomes of the interactions happen to be inferior to others, then there is a discrepancy between what countries can do individually and what they can achieve through a coordinated action.

In the latter case an incentive has to be created to move the global economy towards a more mutually beneficial interaction. What this implies in the real world is not only an empirical but also political question.

If the real world were in a situation in which high wages can generate more demand than low wages (even if the economies are profit-led for middle range wage levels), then a low wage policy target can be a self-defeating strategy. This is because aggregate demand behaves as an undersupplied global public good and competitiveness by reducing wages has both a demand switching effect and (globally) a demand reducing effect. The ‘Tragedy of the Commons’ may be reenacted, with countries competing through wage reduction and overgrazing the global pasture.

## Appendix: distribution, the real exchange rate and the full system

Output in any single country depends on the distribution of both countries and the real exchange rate.

Distribution and the real exchange rate can be endogenous to the system. We denote with a hat ( $\hat{\cdot}$ ), the growth rate of the corresponding variable and with  $f_j[x]$  the functional form of  $\hat{y}$  with its arguments  $x$ .

$$\hat{\psi}_A = w_A - \hat{p}_A - \hat{\xi}_A \quad (\text{Eq. 7.12})$$

$$\hat{w}_A = f_{wA} [u_A, \psi_A, \rho] \quad (\text{Eq. 7.13})$$

$$\hat{p}_A = f_{pA} [u_A, \psi_A, \rho] \quad (\text{Eq. 7.14})$$

$$\hat{\xi}_A = f_{\xi A} [u_A, \psi_A] \quad (\text{Eq. 7.15})$$

Similarly for country B.

$$\hat{\psi}_B = \hat{W}_B - \hat{P}_B - \hat{\xi}_B \quad (\text{Eq. 7.16})$$

$$\hat{W}_B = f_{wB} [u_B, \psi_B, \rho] \quad (\text{Eq. 7.17})$$

$$\hat{P}_B = f_{pB} [u_B, \psi_B, \rho] \quad (\text{Eq. 7.18})$$

$$\hat{\xi}_B = f_{\xi B} [u_B, \psi_B] \quad (\text{Eq. 7.19})$$

From equations (7.12) to (7.15) and (7.16) to (7.19) it is possible to define:

$$\hat{\psi}_A = f_{\psi A} [u_A, \psi_A, \rho] \quad (\text{Eq. 7.20})$$

$$\hat{\psi}_B = f_{\psi B} [u_B, \psi_B, \rho] \quad (\text{Eq. 7.21})$$

Equilibrium requires that  $\hat{\psi}_A = \hat{\psi}_B = 0$  and, therefore,

$$f_{\psi A} [u_A, \psi_A, \rho] = 0 \quad (\text{Eq. 7.22})$$

$$f_{\psi B} [u_B, \psi_B, \rho] = 0 \quad (\text{Eq. 7.23})$$

which implies that nominal wages growth just offsets the sum of inflation and productivity growth.

The real exchange rate will not be consistent with the equilibrium unless  $\hat{P}_A = \hat{P}_B$  and, therefore,

$$f_{pA} [u_A, \psi_A, \rho] = f_{pB} [u_B, \psi_B, \rho] \quad (\text{Eq. 7.24})$$

Conditions in equations 7.22, 7.23 and 7.24 together with equations 7.1 and 7.2 define a system of five equations and five variables,  $u_A, \psi_A, u_B, \psi_B$  and  $\rho$ , that can yield one or more solutions.

Equation 7.24 implicitly defines the equilibrium real exchange rate as a function of  $u_A, \psi_A, u_B$  and  $\psi_B$ . An interesting special case is when

$$f_{pA} [\psi_A, \rho] = p_{\psi A} \psi_A \rho \quad (\text{Eq. 7.25})$$

$$f_{pB} [\psi_B, \rho] = p_{\psi B} \psi_B \frac{1}{\rho} \quad (\text{Eq. 7.26})$$

where  $p_{\psi A}$  and  $p_{\psi B}$  are coefficients. The combination of the latter equations gives

$$\rho = \sqrt{\frac{p_{\psi B}}{p_{\psi A}}} \sqrt{\frac{\psi_B}{\psi_A}} \quad (\text{Eq. 7.27})$$



which shows an increasing relation between the real exchange rate depreciation and the ratio of country B and A wage shares.

The solutions to the system defined by equations 7.22, 7.23 and 7.27 together with equations 7.1 and 7.2 relates the equilibrium values of  $u_A$ ,  $\psi_A$ ,  $u_B$ ,  $\psi_B$  and  $\rho$  to the parameters of aggregate demand.

## Notes

1. The authors would like to thank the participants of the 'Workshop on Employment, Development and Macroeconomic Policies' (ILO, Geneva, 6–7 October 2011), Rudi von Arnim, Xiao Jiang and three anonymous referees for useful comments on earlier drafts of the original paper. The usual caveat applies.
2. This is a form of 'classical constitutional conundrum' as Bowles (2004) defines it. 'Can social interaction be structured so that people are free to choose their own actions while avoiding outcomes that none would have chosen?' Philosophers and classical economists such as Thomas Hobbes, Adam Smith and John Stuart Mill considered this as an overarching question (Bowles 2004: 24; Hardin 1968).
3. See the 'Invisible hand or coordination problem?' and the 'Prisoner's dilemma or pure coordination problems' sections for a discussion on wage- and profit-led regimes and their implications on global outcomes.
4. It is assumed that there will be strategic behaviour between economies in maximizing their output by targeting their wage share taking into account the possible action of the other economy (country A takes into consideration country B possible distribution in targeting its wage share). This strategic interaction will not be extended to the choice of policy instruments to achieve the desired distribution (country A takes into consideration country B instrument changes to set its own policy package to maximize its output via the joint determination of distribution in the two countries): a form of limited rationality!
5. The government has an objective to maximize output by steering the wage share with the instruments available such as collective bargaining system, minimum wage, tax policies and other labour market institutions. This is an oversimplified setting as social partners' actions have a role in the determination of the average wage share for any given institutional setting. Social partners, on the other hand, may consider output as a determining factor for achieving their objectives but not their exclusive target. In fact, the objective functions of social partners may differ and the target of maximizing output may not be the factor that maximizes social partners' objectives. As the modelling of the interactions between three groups with diverging objectives complicates significantly the analysis in a two- or n-country setting, it is assumed that output maximization represents the agreed target of social partners within each economy.
6. Key in such setting is the fact that each country acknowledges such interdependence and is aware of the strategic aspect of it, so that predictions can be made on the action of both economies. To keep the analysis as realistic as possible, it is simply assumed that countries are able to know their best

- response, but do not know and need to know the other economy's best response function.
7. Local output maxima depend on the choice of the demand coefficients and the boundaries, which are largely in line with the historical levels of wage share across economies. The qualitative features of the following scenarios can be replicated by changing both boundaries and demand coefficients. The calibration of the model to any real economy would, therefore, involve all these parameters and yield the configuration of local maxima.
  8. See Bowles (2004).

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# 8

## Keeping up with the Joneses or Keeping One's Head above Water? Inequality and the Post-2007 Crisis

*David Kucera, Rossana Galli and Fares Al-Hussami*

### Introduction

'Burgeoning' is a word that comes to mind to describe the recent literature addressing whether inequality is an important cause of financial crises. Among the strands of this literature are papers developing formal theoretical models (e.g. Al-Hussami and Remesal 2012; Charpe and Kühn 2012; Kumhof and Ranciere 2010) and those looking at historical data for a number of countries and assessing the extent to which financial crises have been preceded by high or growing income inequality (e.g. Atkinson and Morelli 2010; Bordo and Meissner 2012). These latter papers find no general relationship between income inequality and financial crises. In an assessment of how inequality changed prior to 25 systemic banking crises stretching over 100 years, Atkinson and Morelli find that inequality increased in ten cases, was more or less the same in eight cases and decreased in seven cases. Inequality is also found to be at high historical levels prior to systemic banking crises in only seven of 21 cases when inequality is measured by Gini coefficients and in only nine of 16 cases when measured by the share of income going to 1 per cent or fewer of households, that is, by 'top income' shares. In a similar vein but using econometric modelling, Bordo and Meissner find no statistically significant evidence that changes in top income shares were followed by credit booms.

This evidence is undoubtedly useful in making clear that there is no necessary relationship between inequality and financial crises or credit booms, but it does not mean that inequality was not an important cause of the post-2007 global economic crisis. Rather, it means that if inequality was indeed a cause of this crisis, it was in concert with other particular factors. Among the factors widely noted in the literature are changes

in mortgage lending practices and financial market deregulation more generally, particularly regarding the subprime mortgage crisis in the United States from which the global economic crisis followed. But also potentially important are developments in *real* incomes, which are too often conflated in the literature with relative incomes. For example, Atkinson and Morelli's analysis is motivated in good measure by what they call the 'Stiglitz hypothesis', which they describe as follows:

The Stiglitz (2009) hypothesis is that, in the face of stagnating *real incomes*, households in the lower part of the distribution borrowed to maintain a rising standard of living. This borrowing later proved unsustainable, leading to default and pressure on over-extended financial institutions.

(Atkinson and Morelli 2010: 3, emphasis added)

In spite of defining the Stiglitz hypothesis in terms of 'real incomes' for lower income earners, Atkinson and Morelli use only measures of relative incomes in their analysis, and so do not directly test the Stiglitz hypothesis as they themselves have defined it. This leads to a key objective as well as a key conclusion of this chapter. The objective is to address how developments in both real and relative incomes matter for the various accounts put forth to explain the crisis. The conclusion is that developments in real incomes are of fundamental importance in understanding the subprime mortgage crisis and rising household debt in the United States and so the crisis more generally. Households endeavouring to 'keep up with the Joneses' no doubt have their part to play in this story. Less appreciated but perhaps more important was that a great many households in the United States were indeed just trying to keep their heads above water.

This chapter provides a critical overview of the literature arguing for and against the view that inequality was an important cause of the post-2007 global economic crisis, focusing on studies addressing the US subprime mortgage crisis and its aftermath. We leave aside the theoretical literature noted already as well as the intriguing literature arguing that growing inequality within the EU was an important cause of the Euro crisis (e.g. Hein and Truger 2010; Onaran 2010) and that lower inequality results in longer periods of sustained growth (e.g. Berg, Ostry and Zettelmeyer 2008; Berg and Ostry 2011). Rather than defining from the outset the many measures of inequality relevant to this debate, they are addressed as they arise en route, but it is worth anticipating that they include income inequality as measured by top income shares, Gini

coefficients, real incomes for households at different income levels, pre-tax and after-tax incomes, real hourly earnings by wage percentiles and labour's share of income (i.e. functional income distribution). Consumption inequality also comes into play, insofar as the chapter addresses differences in patterns of consumption expenditure and debt for US households at different income levels.

Shown in Figure 8.1 is a flowchart intended to provide a clearer sense of the causal linkages proposed by various authors. Reading from left to right, boxes A through E represent causal factors culminating in F, the crisis, with arrows between the boxes indicating directions of causality addressed in the literature. Box A groups together political dynamics and neoliberalism; Box B, easy credit, monetary policy and financial deregulation; Box C, inequality and stagnant or declining real incomes; Box D, domestic imbalances, particularly unsustainable household debt; and Box E, regional and global imbalances, particularly current account imbalances. Though not central to the chapter, note the outer arrows going directly from boxes B and C to the crisis. The upper arrow represents the view that, for example, financial deregulation was a direct cause of the crisis, even though it may have also acted through domestic imbalances; similarly, the lower arrow represents the view that inequality was a direct cause, if not of the crisis, of unstable growth, for reasons discussed by Berg and Ostry (2011) regarding credit market imperfections, the political economy of redistribution and political instability. Figure 8.1 is returned to throughout the chapter when recapitulating

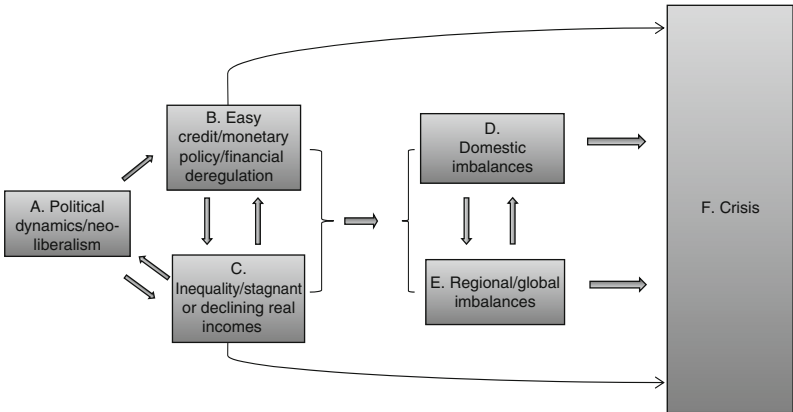


Figure 8.1 Causal channels of the crisis

and comparing different accounts of whether inequality was an important cause of the post-2007 crisis.

## **Inequality in the United States as a cause of the crisis**

### **'Fault lines' and the AEA debate**

Raghuram Rajan is one of the more prominent authors arguing that inequality in the United States was an important cause of the crisis. In his 2010 book, *Fault Lines*, he argues that there are three sets of 'fault lines' in the global economy. These result from domestic political dynamics, trade imbalances between countries and the interaction of these trade imbalances with different types of financial systems. The first of these is most directly linked to the inequality hypothesis, with Rajan writing that 'The most important example of the first kind of fault line ... is rising income inequality in the United States and the political pressure it has created for easy credit' (2010: 8). Rather than more rapid skills-biased technical change, Rajan argues that the most important cause of growing inequality in the United States was the slower increase since 1980 in the supply of skilled labour, particularly of college graduates.

In this line of argument, addressing inequality at its roots requires a long-term commitment to educational reform. Instead, US politicians responded to the political pressures arising from growing inequality by taking the more expedient route of easy credit. This took the form of the extension of mortgage credit to lower-income households, resulting in unsustainable household debt and the housing bubble. Rajan emphasizes the roles played by Fannie Mae (the Federal National Mortgage Association) and Freddie Mac (the Federal Home Loan Mortgage Corporation) – both government-sponsored enterprises – in extending mortgage credit. Rajan also argues that the US Federal Reserve Bank's policy of low interest rates played a complementary role in creating the housing bubble.

The second and third 'fault lines' complemented the first, in that the export successes of countries like Germany, Japan and more recently China created large global current account imbalances, most notably with respect to the US. This led to the massive accumulation of foreign-exchange reserves in these countries, some of which found their way back to the US as investments that contributed to the rise in stock market equity and housing prices.

Regarding the link between inequality and the crisis, Rajan's line of argument can be illustrated by Figure 8.1 as the movement from boxes C to A to B to D to E, that is, from inequality to political dynamics to easy credit and loose monetary policy to domestic imbalances (in the

form of unsustainable household debt) to the crisis itself. This was exacerbated by global imbalances, box E, the second of Rajan's 'fault lines'.

At the American Economic Association (AEA) annual meeting in 2011, there was a panel discussion titled 'Income Inequality and the Financial Crisis?' featuring Rajan, Daron Acemoglu and Edward Glaeser. Rajan led by presenting key arguments from *Fault Lines*. Glaeser attempted to pre-empt the connection between inequality and the crisis by arguing that neither easy credit nor low interest rates contributed greatly to the housing bubble. Glaeser's view is backed up by research done with co-authors Joshua Gottlieb and Joseph Gyourko. Summarizing their work, the authors write:

Theoretical and empirical analyses suggest that neither interest rates, nor [mortgage] downpayment requirements, nor approval rates moved enough over the past decade to generate the magnitude of [housing] price changes that parts of the United States experienced.

(Glaeser et al. 2010: 9)

In an editorial in the *New York Times* on the inequality hypothesis, Glaeser summoned this and other evidence and concluded that 'Inequality seems as if it was only a small part of the story' (2010).<sup>1</sup>

In the panel discussion, Acemoglu picked up on several ambiguities in *Fault Lines* (Acemoglu 2011a). In particular he questioned which kind of inequality was more central to the story in the US and whether it was pressure from low-, middle- or high-income households that US politicians were responding to. Acemoglu presented an alternative hypothesis to Rajan's, emphasizing the influence of high-income households and 'top inequality', such as measured by the relative incomes of the top 1 per cent of households. In an interview held one month after the AEA debate, Acemoglu elaborated his alternative hypothesis as follows:

In the Rajan story, the political responses come because politicians are somehow responding to the discontent of the bottom of the distribution. Or, in response to my comments, [Rajan] said it's the middle of the distribution. Whereas in the story that I suggested, politics is playing out by responding to lobbying campaign contributions and otherwise the ability of the already well-off and already well-organized to influence and guide the political process. It's not technological change. It's institutional change. It's the good-old technology that people have known for centuries: money begets you power.

(Acemoglu 2011b)

To support his hypothesis, Acemoglu presented findings from a study showing that US senators' voting patterns are correlated strongly with views of high-income voters, moderately with views of middle-income voters and not correlated at all with views of low-income voters (Bartels 2008). Acemoglu's story can be illustrated by Figure 8.1 in which the line of causality runs from boxes A to B and then from B to both C and directly to F, that is, from political dynamics to financial deregulation, the latter the cause of both inequality and the crisis. (Perhaps an additional line of causality runs from B to F through D, as Acemoglu argues that while financial deregulation was a cause of the crisis in its own right, 'Housing certainly wasn't a sideshow' in the run-up to the crisis.) In Acemoglu's story, in short, inequality was not a cause of the crisis but rather both inequality and the crisis were jointly caused by financial deregulation 'won by the financial industry by lobbying and cultivating close political contacts' (Acemoglu 2011a: 17).<sup>2</sup>

Acemoglu also pointed out an ambiguity in the timing of Rajan's storyline. He presented data showing that *real* earnings for US workers at the fiftieth and tenth wage percentiles – that is, middle- and low-income earners – were 'stagnant or declining' from the late 1970s to the mid-1990s, but that they increased substantially from the mid-1990s until about 2003 and held steady up to the crisis (Acemoglu and Autor 2010). This observation leads Acemoglu to conclude that 'If there was a time for appeasing the bottom of the distributions that was falling behind it was the 1980s, not the 2000s' (Acemoglu 2011a: 16). Acemoglu also argued, as have others, that Fannie Mae and Freddie Mac's involvement in subprime mortgage lending was too little and too late to have played a significant role in the housing boom and bust and the wider crisis (see Krugman and Wells 2010).

In responding to Acemoglu's comments, Rajan countered that while earnings inequality – that is *relative* earnings – between workers at the fiftieth and tenth wage percentiles had indeed fallen after the late 1980s, earnings inequality between those at the nintieth and fiftieth wage percentiles – that is, high- and middle-income earners – continued to widen up to at least 2005, so that the timing of his argument remains valid for middle-income households at least (see Autor et al. 2008: 312).

The debate between Rajan and Acemoglu involves two further ambiguities. The first is whether it was low-income or middle-income households that took on more unmanageable mortgage debt. Here Rajan argues that it is middle-income earners who matter more to his argument, since it is they and not low-income earners who were more likely to buy homes. The second – and perhaps more important – ambiguity



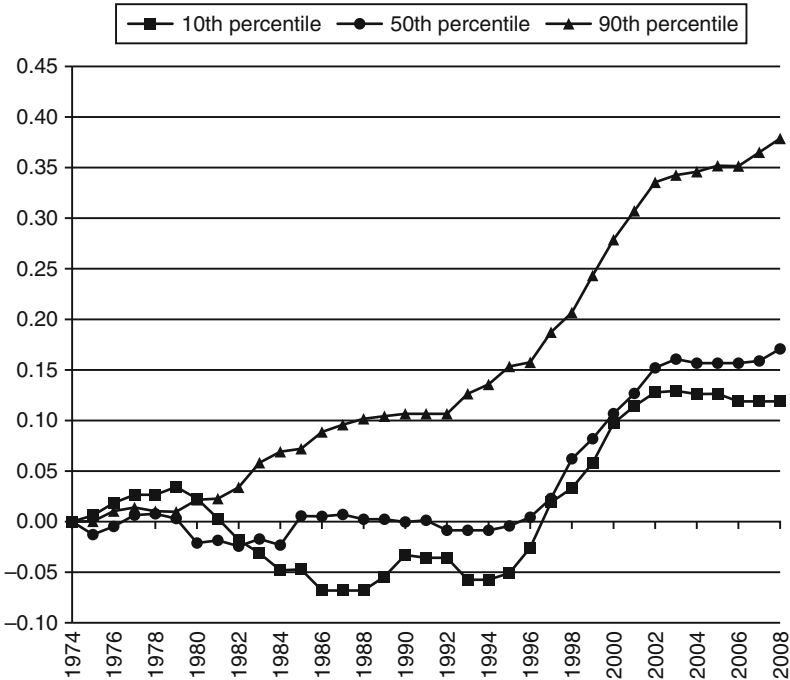


Figure 8.2 Cumulative log change of real hourly earnings in the United States by wage percentiles, 1974–2008

Source: Acemoglu and Autor (2010), data downloaded by authors from <http://economics.mit.edu/faculty/acemoglu/data/handchapter>

implicit in this debate is whether it is *relative* or *real* incomes that mattered more. In other words was it rising inequality per se or, to quote Rajan, ‘stagnating or declining incomes’ that drove the process leading up to the crisis (Rajan 2010: 34)?

Rajan’s argument is centred on rising inequality. Yet, Acemoglu’s focus on real earnings of low-income earners is unsurprising, given Rajan’s repeated reference in *Fault Lines* to ‘stagnant’ earnings and ‘low-income’ earners, the latter particularly in his indictment of Fannie Mae and Freddie Mac (e.g. Rajan uses the expression ‘low-income’ six times in a two-page section titled ‘The Affordable Housing Mandate’, 2010: 34–36).

These are more than quibbles, for a deeper understanding of these issues requires clarity on these matters. Is it changes in real or relative earnings we should be looking at, or some combination of the two? For example, if inequality ratios changed in the same manner as observed,

but real earnings at each wage percentile increased 25 per cent faster than observed, how much pressure would the US politicians have felt to expand housing credit? Similarly, to what extent was the increase in household debt discretionary, that is, a question of 'keeping up with the Joneses'? Alternatively, to what extent was the increase in household debt a matter of maintaining living standards in the face of stagnant or even declining real earnings, that is, a question of keeping one's head above the water? These are the central questions of this chapter and lead to the contention that the role of real incomes has received far too little attention in these debates and that many households in the United States were indeed just trying to keep their heads above water.

### **A bit of Keynesian perspective**

In Rajan's view, inequality caused the crisis by creating political pressure for easy credit. A different perspective is taken by some Keynesian economists, who emphasize the effect of inequality on aggregate demand. Lance Taylor's book *Maynard's Revenge* (2011) provides an essential contribution to the debate, particularly for its attempt to be precise about linkages between the financial and real sides of the economy and the relative importance of the factors that caused the crisis.<sup>3</sup> In Taylor's view, the crisis was caused by the interaction of several factors, summarized here, one of which was rising inequality. For most of these factors, the post-1980 years represented a turning point in the post-Second World War era.

- The ascendance of neoliberalism and academic finance theory, associated with the belief in the efficiency of fully deregulated financial markets.
- Financial deregulation and the growth of the financial sector relative to the rest of the economy.
- The weakening of labour's bargaining power.
- After about 1980, household borrowing and profit shares trending upwards and wage shares and real interest rates trending downwards.
- Equity and housing price booms.
- Household borrowing collateralized to a significant extent by rising equity and housing prices.
- Increasing household debt in the United States mirrored by decreasing net lending from the United States to the rest of the world alongside a trend increase in the the country's current account deficit.

In his analysis of these factors, Lance Taylor writes that '[r]edistribution of income and wealth among socioeconomic groups was especially

important' (2011: 337). Like Rajan, Taylor invokes both growing inequality (in terms of personal and functional income distribution) and stagnating or declining real incomes for low- and middle-income households in the United States as causes of the crisis, but he more consistently argues that it is the combination of the two that mattered. Moreover, while Rajan argues that growing inequality in the United States was caused by the gap between the demand and supply of highly-educated workers, Taylor emphasizes the 'systematic repression of labor's bargaining power beginning with the Reagan administration' (2011: 355).

Making the connection not just with inequality but with real incomes, Taylor writes that 'the obvious interpretation of all these trends is that households with incomes below the top percentiles of the size distribution took advantage of the opportunity that capital gains on equity and housing provided to run up debt to maintain their living standards in the face of stagnating or falling real incomes' (2011: 351). Along these lines, Taylor argues that 'much of the consumption increase was due to rising spending on health care' and in this sense was non-discretionary (2011: 345). Taylor continues that 'Households were pushed in the direction of running up debt to maintain living standards in the face of their deteriorating earned income position' (2011: 352).

In weighing the contributions of the above factors, Taylor states that 'the key question' is how what originated as a financial crisis became a crisis of the real economy (2011: 352). He argues that the combination of the ascendance of neoliberalism and academic finance theory, the growth of the financial sector and low real interest rates would by themselves probably have caused a financial crisis. The 'crucial link' to the real economy, Taylor argues, was the increase in household borrowing, itself caused by rising inequality and stagnant or declining real incomes (2011: 352). Summing up, Taylor writes that 'In global macroeconomic terms, all these factors acted together, as of course they had to. The shift in political economy ... made the whole process possible' (2011: 353).

Taylor's line of argument can be illustrated by Figure 8.1 as the movement from boxes A to both B and C to D to F, that is, from political dynamics and neoliberalism in particular to financial deregulation, low real interest rates and easy credit as well as inequality and stagnant or declining real incomes. This led in turn to increasing household debt, which provided the transmission channel from the financial crisis to the crisis of the real economy. As with Rajan, global imbalances, box E in Figure 8.1, was an exacerbating factor. Like Acemoglu, then, Taylor's account begins with political dynamics, but differs in giving rising inequality and stagnant or declining real incomes an important causal

role in that they resulted in the 'crucial link' of increasing household debt between the financial and real sides of the economy.

Robert Reich provides an account broadly consistent with Taylor's in his book *Aftershock*, writing that 'the Great Recession was but the latest and largest outgrowth of an increasingly distorted distribution of income' (Reich 2010: 5). Reich invokes the central role of Keynesian policies as part of the 'basic bargain' that enabled the post-World War Two period of economic prosperity (2010: 28–31). This bargain was characterized by the government maintaining effective demand – and, therefore, employers' incentive to invest – and by workers' sharing equitably in productivity gains. But the period beginning around 1980 saw a shift in the United States, which was characterized, Reich writes, by 'deregulation and privatization, attacked and diminished labor unions, cut taxes on the wealthy, and shredded social safety nets. The manifest result was stagnant wages for most Americans, increasing job insecurity, and steadily widening inequality' (2010: 6).<sup>4</sup> Greater wealth for higher-income earners was in turn channelled to middle-income earners through the deregulation of credit markets. Reich's argument can be illustrated by Figure 8.1 following the same route as Taylor's. Reich describes the chain of causality from inequality and stagnating earnings to household debt to the crisis as follows:

As the economy grows, the vast majority in the middle naturally want to live better. They know it's possible because they see people at or near the top enjoying the benefits of that growth in the form of larger homes, newer cars, more modern appliances, and all the other things money can buy. Yet if most people's wages barely rise, their aspirations to live better can be fulfilled only by borrowing, and going ever more deeply into debt. Their consequent spending fuels the economy and creates enough jobs for almost everyone, for a time. But it cannot last. Lacking enough purchasing power, the middle class cannot keep the economy going. Borrowing has its limits. At some point – 1929 and 2008 offer ready examples – the bill comes due.

(Reich 2010: 7)

Reich emphasizes the role of the 'middle class', which he defines very broadly, excluding only the poorest 10 per cent and richest 10 per cent of households (2010: 19). Yet there is the possibility of substantial differences in patterns of inequality, real earnings and household consumption and debt among the 80 per cent in the middle, and similar dynamics could apply to households at the lowest income levels.

Indeed, one of the points of contention in this debate is whether the housing bubble and increasing household debt were driven more by low- or middle-income households.

Note that in both Taylor's and Reich's interpretations of the crisis the role of inequality is related to weakening purchasing power, inducing many households below the top income percentiles to take on more debt to maintain consumption. Only in Reich's view, however, it is suggested that growing inequality – in the strict sense of *relative* incomes – has an influence on consumption levels, in the sense of keeping up with the Joneses. This leads to another point of contention in the debate, the extent to which the increase in debt was discretionary – as suggested by the discussion of inequality per se – or a matter of necessity – as suggested by the discussion of real incomes. The following section considers some theory and empirical evidence on these points.

### **Real and relative incomes as drivers of US household debt**

Following Taylor, the 'crucial link' between the financial crisis and the crisis of the real economy was the increase in household debt in the United States, itself caused by rising inequality and stagnant or declining real incomes for low- and middle-income households. In the debate on inequality and the post-2007 crisis it is, therefore, of crucial importance to analyse how and to what extent rising inequality and stagnant or declining real incomes resulted in rising household debt.

An initial consideration is that the sustainability of debt-to-income ratios in general depends on the relationship between the interest rate on debt and the growth rate of income. If the former is greater than the latter, debt ratios will tend to increase because of the accumulation of interest on past debt. In the 1980s, many US households were confronted with a combination of high interest rates and low income growth and thus the prospect of rising household debt ratios even in the absence of new discretionary expenditures.<sup>5</sup> Yet other factors would seem to come into play in the period of lower interest rates leading up to the crisis. Among the explanations of the relationship between inequality and stagnant or declining real incomes and patterns of household savings and consumption are the relative income hypothesis, wealth effects and weakened social safety nets and labour market institutions, which will be considered in turn.

#### *The relative income hypothesis*

Standard post-Keynesian theory posits that the higher marginal propensities to consume of lower income earners combined with a shift

in income towards higher income earners should generally result in a higher average household savings rate. In the United States, however, the opposite occurred. A potentially useful insight into the declining household saving rate is the relative income hypothesis, developed by James Duesenberry in 1949. According to this hypothesis, a household's consumption depends not only on its real earnings, but also on the observed consumption of other households: keeping up with the Joneses, in other words. Insofar as a given household emulates the consumption of higher income households, the relative income hypothesis suggests that inequality affects consumption and savings patterns not only in a static, compositional sense but also dynamically in that the marginal propensities to consume and save of different income groups are affected by changes in income distribution. These dynamics are referred to by Frank, Levine and Dijk (2010) as 'expenditure cascades'. As regards inequality as a cause of the crisis, the relative income hypothesis can be illustrated by Figure 8.1 as the movement from box C directly to D, that is, from inequality to lower average household savings rates and to domestic imbalances in the form of unsustainable household debt.

There are few papers that empirically test the relative income hypothesis, but a notable one that indirectly tests it is by Frank et al. (2010). The authors construct income inequality measures (Gini coefficients) for the 50 states and 100 most populous counties of the United States to address the question, 'do people who live in high-inequality jurisdictions in fact save at lower rates than those who live in low-inequality jurisdictions?' (2010: 16). Since saving rates are not available by state or county, the authors use three proxies for saving rates representing the ways households respond to financial distress: bankruptcy, divorce and commuting time (on the assumption that households in financial distress move to cheaper, more remote neighbourhoods). Frank et al. estimate the relationship between changes in income inequality and the three savings rates proxies, controlling for economic and socio-demographic factors, and find a strong positive relationship between income inequality and these proxies, particularly on the number of non-business bankruptcies. Based on these findings, they conclude that 'Mr. Duesenberry's relative income hypothesis clearly merits a closer look' (2010: 27).

It may be the case, though, that these findings are driven not by inequality as such but rather by the financial distress of households *within* counties having stagnating or declining earnings. In this case, the relationship with inequality is largely incidental and what matters is real rather than relative incomes. This interpretation is suggested by the work of Mian and Sufi (2009) on subprime lending, discussed further, in

which findings at the county level are at odds with those at finer levels of disaggregation.

A study by Bertrand and Morse provides a more direct test of the relative income hypothesis, or what these particular authors call ‘trickle-down consumption’ (2013). Using household-level consumption data broken down by the 50 states of the United States from 1980 to 2008, Bertrand and Morse estimate the sensitivity of middle-income households’ consumption shares to top-income levels for 29 categories of goods and services classified by measures of income elasticity and visibility. They find that middle-income households increase their consumption shares more for income elastic (i.e. ‘rich’ consumption) and visible (i.e. ‘conspicuous’ consumption) goods and services in response to higher top income levels. In addition to estimating effects on the composition of middle-income households’ consumption, Bertrand and Morse also estimate the effects on middle-income households’ overall consumption expenditures, which they summarize as follows:

We estimate that, by 2005, middle income household[s] would have consumed between 2.6 and 3.2 percent less had income levels at the top grown at the same rate as income levels at the median since the beginning of the sample period; this corresponds to between \$1271 and \$1571 less in consumption in 2005 for middle-income households. We argue that this might explain a *small, but non-trivial* part of the decline in the aggregate personal savings rate.

(2010: 3–4, emphasis added)

Yet taking these numbers at face value suggests that while the relative income hypothesis may have some merit in its own right, it cannot go far in explaining the crisis. For as will be seen, debt-to-income ratios for middle-income households (using the authors’ definition of the middle 60 per cent) roughly doubled from the late-1980s up to the crisis. It is also worth noting that the authors’ estimates imply that the effect of the top 10–20 per cent of households on middle-income households is much stronger than the effect of the top 1–10 per cent of households. While this seems plausible, it will be shown here that the growth in inequality in the United States between the early 1980s and 2007 was overwhelmingly driven by the top 1 per cent of households (Atkinson, Piketty and Saez 2011). In this sense, Bertrand and Morse’s stronger results based on the top 10–20 per cent of households – while instructive – are not primarily driven by the main current of growing inequality in the United States.

A useful overview of the inequality and the crisis debate is provided by van Treeck, who assesses both relevant theory and evidence, and who argues that the core of Rajan's *Fault Lines* is based on the relative income hypothesis (2012). In his summary, van Treeck writes that 'There is substantial evidence that the rising inter-household inequality in the United States has importantly contributed to the fall in the personal saving rate and the rise in personal debt ... [T]he Rajan hypothesis, while inconsistent with the permanent income hypothesis, calls for a renaissance of the relative income hypothesis' (2012: 24). Yet van Treeck's representation of Rajan's main line of argument and the relative income hypothesis is ambiguous. He writes, for example, that the 'main point of the Rajan hypothesis is that consumers have used credit to compensate for the *lack of income growth*' (2012: 20, emphasis added). In our view, much of the evidence marshalled by van Treeck (with Frank et al. (2010) featuring centrally) is best interpreted in light of changes in both real and relative incomes.

The importance of the relative income hypothesis for the post-2007 crisis is further challenged by evidence on the composition of growing inequality in the United States. In their seminal paper, Atkinson, Piketty and Saez show that income shares going to the top decile of US households increased dramatically between the early-1980s and 2007, reaching a peak last seen just before the Great Crash of 1929 (2011). Decomposing this decile into the top 1, 1–5 and 5–10 per cent of households, Atkinson et al. find that this increase was almost entirely driven by the top 1 per cent. In a similar vein, Galbraith evaluates income inequality among the roughly 3000 counties of the United States, and shows that the sharp increase in such inequality between 1994 and 2000 largely flattens out if one omits data for the 15 counties with the highest average incomes (2012). That is, growing inequality in the United States was driven in large measure by the rapid income increases of the uppermost few. In our view, lower- and middle-income households are more likely to compare their consumption patterns with the Joneses than the Rockefellers. As such, the findings of these two studies would seem to argue against the relative income hypothesis, at least as a leading explanation of rising household debt in the United States.

### *Wealth effects*

While the relative income hypothesis is relevant to below-the-top income groups, wealth effects are more relevant to high-income groups. So-called wealth effects feature in theoretical Keynesian growth models



developed by Zezza (2008) and Bhaduri (2011). In Zezza's account, capital gains linked to the equity market boom in the second half of the 1990s and the housing market thereafter led to the expectation of higher income and an increase in current consumption alongside declining savings rates. This held particularly for the richest households with large holdings of financial and real assets, and so provides a possible explanation of the declining household savings rate in the United States given the shift in income towards these households.

In a similar vein, Bhaduri captures the gist of his views as follows:

[R]ecent policies relied on indirect stimulation of consumption demand through a boom in the stock and real estate market supplemented by discretionary tax cuts in favour of the richer sections of the population. Since more is saved out of profit, especially as retained corporate profit, the overall saving propensity increases due to such income redistribution in favour of profits. Other things held equal, this would have weakened the multiplier mechanism to depress aggregate demand, but this depressive effect was countered through increased consumption *by the rich* due to the wealth effect they enjoyed from rising asset prices.

(2011: 8, emphasis added)

In our view, increased inequality mattered for the crisis not so much because of the weakened purchasing power of low- or middle-income earners, but because of the greater purchasing power (realized or expected) of high-income earners. Wealth effects can be illustrated by Figure 8.1 as the movement from box C directly to D, that is, from inequality to lower average household savings rates and ultimately to domestic imbalances in the form of unsustainable household debt. Box B may come into play as well, insofar as easy credit, monetary policy and financial deregulation stimulated the booms in stock and real estate markets and the associated wealth that was created.

The importance of wealth effects is empirically tested for the United States by Onaran, Stockhammer and Grafl (2011) by estimating the effects on consumption of changes in housing wealth and financial wealth. Onaran et al. estimate that changes in housing wealth and financial wealth can account for about 12 per cent and 6 per cent, respectively, of the increase in the consumption share of GDP from 1980 to 2007. That leaves the vast bulk of the increase in the consumption share unaccounted for. The authors also estimate the overall effect

of the changes in income distribution and wealth on aggregate demand and find that in the absence of wealth effects, aggregate demand in the United States would have fallen.

Further evidence on wealth effects in the United States are provided by Maki and Palumbo (2001). The rapid decrease in the US household savings rate began in the early 1990s, and Maki and Palumbo assess which income groups drove this change. Evaluating household and aggregate data, they estimate net worth and savings rates for households by income quintiles during the 1990s stock market boom. They find that saving rates for households at the highest income quintile – those who gained the most from the stock market boom – fell much more rapidly compared to saving rates for the other 80 per cent of households. Indeed, by 2000 it was only households at the highest income quintile whose spending exceeded disposable income. Savings rates for middle-income households (at the third and fourth quintiles) decreased only slightly if at all, as they benefited from moderate increases in their net worth relative to income. Maki and Palumbo also find that saving rates for the 40 per cent of households with the lowest income were actually increasing between 1992 and 2000. Taken together, they argue that their results document ‘a dramatic behavioral response of wealthy Americans to the stock-market boom that prevailed from 1994 through 1999, and demonstrate that the magnitude of this response is capable of accounting for virtually all of the decline in the aggregate personal saving rate last decade’ (2001: 22).

As described by Hein and Truger, though, while high income households may have led the way in this regard, lower-income households were soon to follow along this path of ‘property-based and credit-financed consumption’ (2011: 7). Particularly relevant regarding the wealth effect is data on household debt relative to income in the United States from 1989 to 2010 from the US Federal Reserve System’s Survey of Consumer Finances, broken down by income quintiles for the bottom 80 per cent of households and by income deciles for top 20 per cent of households (US Federal Reserve System 2013).

Over this 20-year period, debt-to-income ratios increased far more for households at the lowest income quintile than for other households, with the increase particularly rapid after 2000. That is, for the poorest households the ratio increased from 0.9 in 1989 to 2.6 in 2007 and then spiked up to 3.9 in 2010 in the wake of the crisis. For the remaining four income groups aside from the top decile, patterns of household debt ratios were similar, increasing from about 0.9 to between 1.7 and

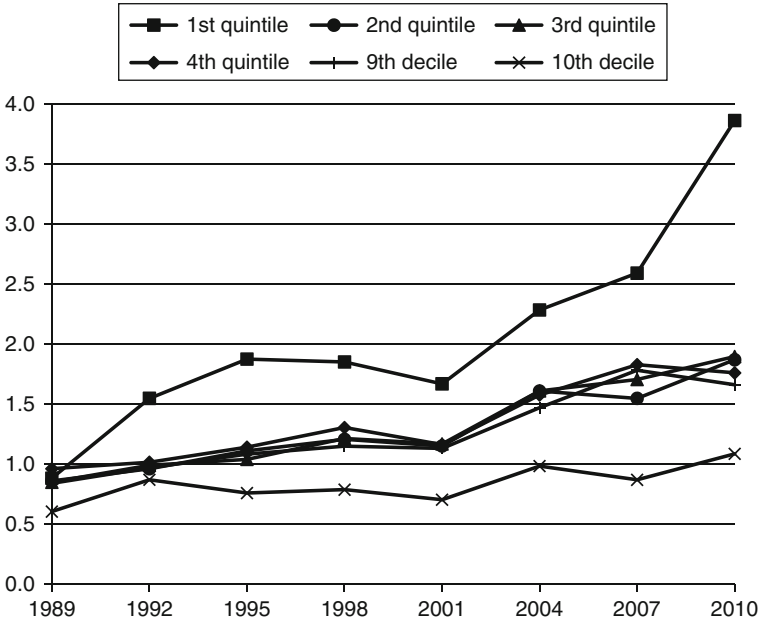


Figure 8.3 Household debt relative to pre-tax income in the United States by household income group, 1989–2010  
 Source: US Federal Reserve System, Survey of Consumer Finances; authors' calculations.

1.9 per cent over the period, with a more rapid increase after 2000. Notably, for households in the second and third highest income groups (fourth quintile and ninth decile), debt ratios were lower in 2010 than 2007. For the top 10 per cent of households the debt ratio was consistently lowest and increased less than all other income groups, with an increase from about 0.6 to 1.1 over the period. Put differently, the gap in debt ratios between the richest and poorest households was narrowest at the beginning of the period and widest at the end. These data are at odds with Maki and Palumbo and the notion of wealth effects more generally.

*Weakened social safety nets and labour market institutions*

A study by Montgomerie (2011) looks at rising household debt in the United States in the context of both weakened social safety nets and labour market institutions. The former is associated with households increasingly managing their pensions through investments in asset markets and leveraging homeownership to finance consumption; the

latter is associated, Montgomerie writes, with 'slow income growth, employment insecurity and declining non-wage benefits' (2011: 3). Though less wide-ranging than Taylor's or Reich's accounts, the character of Montgomerie's argument can be similarly illustrated by Figure 8.1.

The author evaluates patterns of income and mortgage and consumer debt from the early 1990s up to the crisis for households having younger and older heads of households (that is, under 35 and over 65 years of age) in an effort to evaluate income and debt in the context of life-cycles. Montgomerie finds that mortgage and consumer debt rapidly outpaced income growth after 2000, for both types of households, and writes that: 'the sheer level of indebtedness incurred by these two groups since 2001 undermines the prevailing "life-cycle" assumptions that dismissed the negative consequences of extensive borrowing in a credit/asset bubble as merely a rational response to market conditions' (2011: 5).

Regarding households with older heads of households, Montgomerie notes that the largest share of their expenditures are on health care, housing, food and fuel, for which prices increased more rapidly than the Consumer Price Index (CPI) used to adjust social security payments. As noted, the CPI is also used to convert average nominal into average real wages, and so is relevant more broadly to understanding the constraints of households at different income levels, depending on their patterns of consumption.

Montgomerie also cites several studies showing that a growing number of households in the United States used credit cards to cover expenses related to weakened social safety nets. A 'National Survey on Credit Card Debt of Low- and Middle-Income Households' undertaken by the non-governmental organization Demos found that in 2005, 29 per cent of households surveyed used credit cards to pay for illness or necessary medical treatment, 25 per cent to cover expenses related to layoff or job loss and 21 per cent to pay for college tuition, examples of what are referred to as 'the plastic safety net' (Demos 2005). Based on a survey undertaken in 2003, another study estimated that 37 per cent of American adults went into debt as a result of medical expenses (Doty et al. 2005). Yet another study finds that low-asset households in the United States took on increasing amounts of unsecured debt as a result of becoming unemployed (Sullivan 2008).

Taken together, this evidence suggests that much of the increase in debt in the United States resulted from households struggling to keep their heads above water.

### Subprime mortgage lending patterns and inequality

Whatever reasons different US households had for taking on more debt, one thing is certain: they were offered markedly more possibilities for doing so. Another way of looking at the causes of rising household debt is to look at lending patterns to households at different income levels. Regarding the housing market and subprime mortgage lending in particular, it is useful to consider studies by the *Wall Street Journal* (Brooks and Mitchell Ford 2007) and Mian and Sufi (2009). The *Wall Street Journal* undertook an analysis of over 250 million mortgage applications and originations over a span of ten years and found that although subprime mortgage loans were disproportionately made to households in low-income communities, subprime lending also expanded rapidly to households in middle- and high-income communities in the United States. These findings were summarized as follows:

Subprime mortgages were initially aimed at lower-income consumers with spotty credit. But the data contradict the conventional wisdom that subprime borrowers are overwhelmingly low-income residents of inner cities. Although the concentration of high-rate loans is higher in poorer communities, the numbers show that high-rate lending also rose sharply in middle-class and wealthier communities. ... As home prices accelerated across the country over the past decade, more affluent families turned to high-rate loans to buy expensive homes they could not have qualified for under conventional lending standards.

(Brooks and Mitchell Ford 2007)

According to the *Wall Street Journal* study, in other words, subprime mortgage lending in the United States was widespread across income levels and regions.

Perhaps the most definitive study of this question to date is by Mian and Sufi (2009), in which they assess income growth and mortgage credit growth in both counties and – at a much finer level of aggregation – ZIP code areas within counties, with counties and ZIP code areas classified by the fraction of the population having low credit rating scores (under 660, a conventional threshold for subprime borrowers).<sup>6</sup> The one-fourth of ZIP code areas with the greatest fraction of the population with low credit rating scores are classified by the authors as subprime ZIP codes.

For the 2002–2005 period representing the peak of the housing boom, Mian and Sufi observe at the county level a positive relationship between income growth and mortgage credit growth. This might seem to suggest that people are financing the purchase of homes through

their higher incomes, which Mian and Sufi refer to as the ‘income-based’ hypothesis. At the ZIP code level within counties, however, the pattern is just the opposite: there is a statistically-significant negative relationship between income growth and mortgage credit growth. Of the 18-year period studied by the authors, this negative relationship held only for the 2002–2005 period.

The contrast between these relationships implies that mortgage credit growth was more rapid within counties where income inequality (at the ZIP code level) was increasing more rapidly, that is, where ‘income growth is concentrated among prime segments of the population that did not experience disproportionately high credit growth’ (Mian and Sufi 2009: 1451). In their summarizing of these findings, Mian and Sufi make explicit the link between mortgage credit growth and both real and relative incomes:

Prior to the default crisis, these subprime ZIP codes experience an unprecedented relative growth in mortgage credit. The expansion in mortgage credit from 2002 to 2005 to subprime ZIP codes occurs despite sharply declining relative (and in some cases absolute) income growth in these neighbourhoods.

(2009: 1449)

The authors also address the notion that mortgage credit growth was based on the expectation of housing prices increases, which they call the ‘expectations-based’ hypothesis. The authors found similar patterns between the full sample of ZIP codes and the sample within counties where the housing supply was highly elastic and housing prices were relatively flat. More generally, the authors find that the mortgage credit growth and defaults occurred in subprime ZIP codes across the country. Based on these and other findings, the authors conclude that the most plausible explanation for the expansion of subprime mortgage lending was not growing incomes or the expectation of housing price increases – that is, the ‘income-based’ and ‘expectations-based’ hypotheses – but rather changes in lending practices, which the authors refer to as the ‘supply-based’ hypothesis and which is consistent with this chapter’s discussion of easy credit.

Mian and Sufi list a set of possible reasons for changes in lending practices, some consistent with Rajan’s argument about political dynamics (namely, ‘greater subsidization of risk through government-backed programs’ (2009: 1450–51)), but they do not take a view on their plausibility. Expressing their findings in terms of Figure 8.1, they argue that

the balance of evidence suggests the movement from boxes B to D to F, that is, from easy credit (as suggested by the ‘supply-based’ hypothesis) to domestic imbalances (in the form of unsustainable household debt) to the crisis itself. Mian and Sufi observe a positive relationship between mortgage credit growth and inequality within counties, that is, a positive relationship between boxes B and C, but they do not suggest that one was a cause of the other nor that inequality was otherwise a cause of the crisis. Indeed, their results suggest that the relationship between mortgage credit growth and inequality at the county level was in a sense incidental, a result of more rapid credit expansion to subprime ZIP codes with stagnant or declining real incomes *within* counties.

### **Consumption expenditure patterns in the United States**

A crucial question is for what purposes different US households took on more debt, particularly with regard to discretionary and non-discretionary expenditures. Data are compiled here on consumption expenditure shares from the US Bureau of Labor Statistics’ Consumer Expenditure Survey for the years 1990, 1995, 2000, 2005 and 2009 by household income quintiles, broken down into ten categories: food, rental, other housing, mortgage costs, transport, apparel, health care, education, personal insurance and pensions, and other expenditures (US Bureau of Labor Statistics 2013). Shown in Figure 8.4 are average consumption expenditure shares for these years for the lowest, second, fourth and highest household income quintiles relative to the third (middle) quintile (with consumption shares for the third quintile shown next to expenditure categories labels). This provides a sense of how consumption expenditures vary by income group. Most notably, lower income quintiles spend more on rental and less on mortgage costs, reflecting their lower rates of homeownership; they spend more on food and health care and less on personal insurance and pensions. Regarding education, expenditure shares are highest for households at the lowest and highest income quintiles. The considerable variation in consumption expenditure patterns suggests that applying the CPI to the nominal earnings of households at different income levels provides an imprecise estimate of real earnings and thus an imprecise sense of the real constraints faced by households at different income levels.

The US Consumer Expenditure Surveys provide data on income as well as on consumption expenditure by household income quintiles, enabling comparisons between the two. These are shown in Figure 8.5 as the average annual ratios of household expenditure to pre-tax and after-tax income by income quintiles for the 2004–2007 period leading up to the crisis.<sup>7</sup> A clear pattern emerges: the lower the household

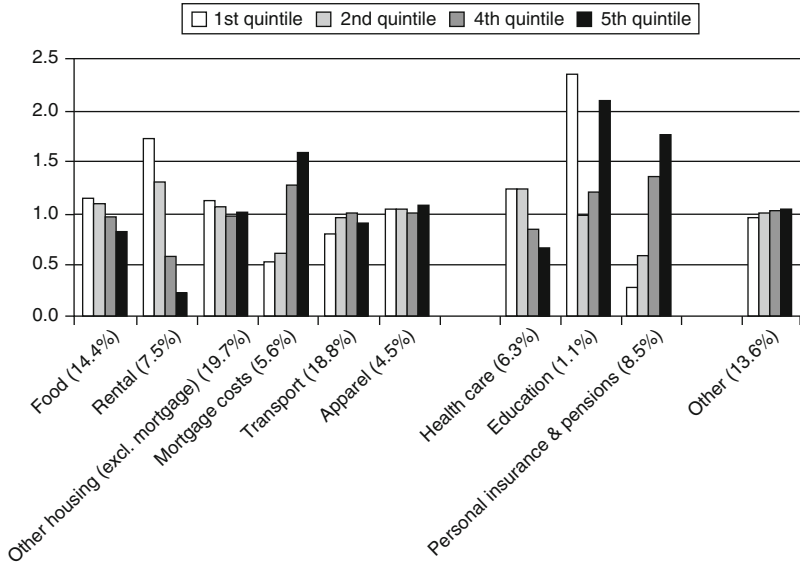


Figure 8.4 Consumption expenditure shares in the United States relative to third income quintile, 1990–2009 average

Note: Figures in parentheses refer to consumption shares for the third household income quintile.

Source: US Bureau of Labor Statistics, Consumer Expenditure Surveys; authors' calculations.

income, the higher the ratio of expenditures to income. Indeed, for households in the lowest income quintile, expenditures were nearly twice as high as both pre-tax and after-tax income. For households in the next lowest income quintile, expenditures exceeded income by 13 per cent before taxes and 15 per cent after taxes. In general, there were only small differences in pre-tax and after-tax ratios of expenditure to income for the different income quintiles, illustrating the limited distributional effect of taxation. For the households in the three higher income quintiles, in contrast, expenditures were lower than income. For this key pre-crisis period, in other words, the poorest 40 per cent of households in the United States paid for consumption expenditures through borrowing and drawing down their savings.

Complementing these results are the findings of a Demos report based on their survey of low- and middle-income households referred to already. Regarding the 2012 survey, the report finds that:

40 percent of households used credit cards to pay for basic living expenses such as rent or mortgage bills, groceries, utilities, or



insurance, in the past year because they did not have enough money in their checking or savings accounts, a rate comparable to 2008.

(Demos 2012: 1)

This share is up from about 33 per cent in the 2005 survey undertaken just before the housing bust, and does not include expenditures on car or home repairs, or expenses related to layoffs, job loss, illness or necessary medical treatment. The survey finds that average credit card debt of low- and middle-income indebted households in the United States increased from US\$8650 in 2005 to US\$9890 in 2008.

This chapter also looks at how consumption shares changed from 1990 to 2009, summarized in Table 8.1, with one plus sign indicating moderate increases, two plus signs indicating substantial increases, and one or two negative signs the opposite (with thresholds of 0.25–0.50 percentage points for moderate change and 0.50 percentage points or greater for substantial change, based on averages for 1990, 1995, 2000, 2005 and 2009). Some clear patterns emerge. For households in all income quintiles, consumption expenditure shares fell for food,

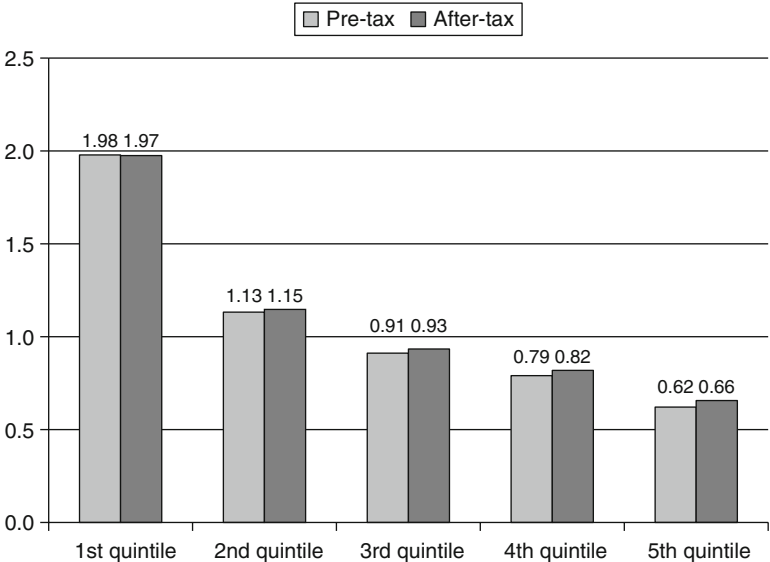


Figure 8.5 Ratios of consumption expenditures to pre-tax and after-tax income in the United States by household income quintiles, 2004–2007 average

Source: US Bureau of Labor Statistics, Consumer Expenditure Surveys; authors' calculations.

Table 8.1 Changes in consumption shares in the United States by household income quintiles from 1990–2009

	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
Food	—	—	—	—	—
Rental	++				
Other housing (excl. mortgage)		++	++	++	+
Mortgage costs	+	+	++	+	
Transport	—	—	—	—	—
Apparel	—	—	—	—	—
Health care			+	++	+
Education					+
Personal insurance and pensions					++
Other				—	

Based on data for 1990, 1995, 2000, 2005 and 2009.

+ indicates average increase of 0.25 to 0.50 percentage points

++ indicates average increase of 0.50 percentage points or more

– indicates average decrease of 0.25 to 0.50 percentage points

— indicates average decrease of 0.50 percentage points or more

Source: US Bureau of Labor Statistics, Consumer Expenditure Survey; authors' calculations.

transport and apparel. The big increases, on the other hand, were related to housing. Rental expenditures increased dramatically for the households in the lowest quintile, indeed, more than any other consumption category for any income quintile; mortgage costs increased for all but the highest income quintile and most for the middle quintile; and other housing (of which the largest component was utilities, fuels and public services) increased for all but the lowest income quintile. Related to social safety nets, expenditure shares on health care increased for the three highest income quintiles and on education and personal insurance and pensions only for the highest quintile. At the same time, the percentage of those in the United States without health care insurance coverage increased steadily since 2000, equivalent to 46.3 million individuals at the time of a 2009 survey (Cohen et al. 2010), and it has been noted that large numbers of low- and middle-income households in the United States went into debt as a result of medical expenses (Demos 2005; Doty et al. 2005).

The findings on mortgage costs rising most rapidly for the middle-income quintile might seem at odds with the popular notion that

so-called NINJA loans – that is, loans made to those with No Income, No Job and no Assets – were responsible for the subprime mortgage crisis. This returns us to the AEA debate about the extent to which it was low- or middle-income households that drove subprime mortgage lending. Rajan noted in his response that ‘in California the sub-prime population could be upper-middle-class households, who simply could not afford high Californian prices without stretching’ (Rajan 2011). It is important to note, though, that the data in Table 8.1 address *all* mortgages, and only about one-fourth of these were subprime (i.e. high-rate) mortgage loans in the years leading up to the crisis (Brooks and Mitchell Ford 2007). In this sense, the chapter defers to the findings of the *Wall Street Journal* study described already.

Worth noting too is that, in his AEA response, Rajan emphasized the importance for his line of argument of middle-income households, for it is they and not low-income households who buy homes, as is confirmed by Figure 8.4. But the dramatic increase in expenditure shares on rent for the households in the lowest income group after 1990 is also relevant here. While the ratio of housing prices to housing rents increased sharply during the housing boom, it also seems likely that some of the increase in housing rents derived from the increase in housing prices. In this sense, low-income households ought to figure into the housing market story, especially given that they experienced the largest increases in household debt-to-income ratios, as shown in Figure 8.3.

### **‘Two paths’: Inequality in other countries as a cause of the crisis**

Summarizing the discussions of a group self-dubbed the ‘Shadow GN’, co-chairs Jean-Paul Fitoussi and Joseph Stiglitz argue that growing within-country inequality was one of the fundamental causes of the crisis. In their words, ‘The crisis has structural roots. The aggregate demand deficiency preceded the financial crisis and was due to structural changes in income distribution’ (Fitoussi and Stiglitz 2009: 2). The argument is premised on the post-Keynesian notion that lower-income earners have higher marginal propensities to consume, which – combined with a shift in income towards higher income earners – had a negative effect on aggregate consumption and demand. In the United States, however, this effect was offset by lower household savings rates and higher household debt, made possible by financial innovations extending credit to lower income earners in particular. In ‘most

European countries', in contrast, there were no comparable offsetting factors, with the result that growing inequality led to higher household savings rates and slower growth (Fitoussi and Stiglitz 2009: 3).

Fitoussi and Stiglitz write that 'these two paths were mutually reinforcing' – the twinned sides of global imbalances – with savings from Europe (as well as from East Asian and oil exporting countries) contributing to finance US borrowing (2009: 3). Combined with loose monetary policy in the United States, they argue that these concatenations provided a solution to the problem of weak global aggregate demand, but – as manifested in the crisis – only a fragile and temporary solution. As for how to address growing inequality, Fitoussi and Stiglitz recommend more progressive taxation and 'a general redesign of the welfare system, aimed at redistribution and human capital formation' (2009: 4).

The short summary provided by Fitoussi and Stiglitz is fleshed out at greater length in Fitoussi and Saraceno (2010). Consistent with the 'Shadow GN' recommendations, Fitoussi and Saraceno argue that less progressive tax systems and declining taxes paid by businesses have been important causes of growing inequality. They make explicit the link between growing inequality and speculative bubbles, argued to result from higher-income earners seeking high-yield investments for their additional savings. Fitoussi and Saraceno elaborate on the 'two paths' notion, arguing that the path taken by a country depended on the 'interaction' of the general pattern of growing inequality with country-specific factors. They write:

[T]he answer to the apparent contradiction between a common trend of increasing inequality and differing macroeconomic performances can be found in the *interaction* of the chronic aggregate demand deficiency, common to all countries, with the institutional differences, and the policy responses, that were instead extremely different.

(2010: 10, emphasis added)

The main differences were with respect to financial market deregulation and responsiveness of fiscal and monetary policy, with the United States and the United Kingdom in particular having more of both in comparison to continental Europe.

To illustrate the characteristics of these 'two paths', Fitoussi and Saraceno present data (for 1995–2007) on GDP growth, aggregate consumption shares, changes in household short-term loans and (for 2007) ratios of short-term and long-term household loans to GDP. For the six countries considered, all measures were considerably greater in the United States and the United Kingdom than in France, Italy

and Germany, with Spain being what Fitoussi and Saraceno refer to as an 'intermediate case' (2010: 10). Though Spain was subject to the restrictions of the Eurozone Growth and Stability Pact, it resembled the United States and the United Kingdom in important ways, having relatively high GDP growth and ratios of long-term household loans to GDP as well as sharp increases in short-term household loans. Post-reunification Germany provided the most striking contrast with the United States and the United Kingdom, with a marked decline in aggregate consumption shares and increase in net exports. Fitoussi and Saraceno describe Germany as pursuing an 'export-led model of growth', yet question its success in light of the country's slow growth (2010: 13).

A similar account is provided by Stockhammer, who writes: '[T]he present crisis should be understood as a crisis of neoliberalism. Financial deregulation is one of the components of neoliberalism, the polarization of income distribution is another one; it is their *interaction* that provided the grounds for the crisis' (2010: 3, emphasis added). Stockhammer also links inequality and financial market deregulation with domestic and global imbalances via this 'interaction', which determined whether a country followed a path of 'credit-driven consumption growth', associated with current account deficits and falling household savings rates, or a path of 'export-driven growth', associated with current account surpluses and rising household savings rates (2010: 4).

Considerations of wage-led versus profit-led growth are relevant in that they provide additional possible causal linkages between inequality and the crisis as well as crisis recovery. Stockhammer and several other authors discussed in this chapter (e.g. Hein, Onoram and Taylor) have worked extensively on how changes in functional income distribution affect economic growth depending on whether countries (or regions) are in scenarios of 'wage-led' or 'profit-led' growth. Countries are said to be 'wage-led' if a shift in income towards wages results in higher growth and 'profit-led' if this results in lower growth. In addition to the post-Keynesian under-consumption considerations noted already, these scenarios depend on exposure to international competition (with more competition making a country more likely to be profit led) and on the investment function. In a survey of empirical studies on the United States, Japan and a number of European countries, Hein (2011) notes that more of these countries are wage led than profit led, though opposite results between studies are found for such key countries as the United States, France and the Netherlands, even though these studies evaluate essentially the same time periods.

Hein (2011) remarks that global current account imbalances widened rapidly after 2000. The United States ran by far the biggest deficits, distantly followed by Spain and the United Kingdom. On the surplus side, China took over from Japan and ran the biggest surpluses after 2005, with Germany and Japan not far behind. Hein classifies the countries contributing most to these global imbalances by 'two models', based largely on trends in current account balances and household debt as well as GDP growth (2011: 43). These are the 'debt-led consumption boom' economies, made up of Greece, Ireland, Spain, the United Kingdom and the United States, and the 'export-led mercantilist' economies, made up of Austria, Belgium, Germany, the Netherlands, Sweden in Europe and China and Japan in Asia.<sup>8</sup> Based on data for the early 2000s to 2008, all countries in the first group ran current account and private household sector deficits and had relatively favourable growth. All countries in the second group ran corresponding surpluses, but Sweden and particularly China among this group also had favourable growth, with average annual growth rates of over 10 per cent for China. Housing prices also increased rapidly in the 'debt-led consumption boom' economies from 2000 up until the crisis. Among the 'export-led mercantilist' economies, Belgium and the Netherlands also experienced rapid increases but housing prices barely increased in China and actually fell in Germany.

Horn et al. extend these arguments, writing that 'A central cause of the crisis ... is the rapid increase in income inequality in many industrialized countries, but also in some emerging economies' (Horn et al. 2009: 2). Similar to other accounts in this section, Horn et al. refer to 'opposite growth models' characterized by 'increased household borrowing' (in the cases of the United States, the United Kingdom and Spain) versus 'export-led growth' (in the cases of China, Germany and Japan) (2009: 2). Regarding the causes of growing inequality and how to overcome it, Horn et al. write as follows:

To a large extent there seems to be a consensus that stronger unions, coordinated wage-bargaining, minimum wages and other institutions, which strengthen the bargaining power of employees, contribute to a more egalitarian distribution of wage and household incomes. In addition the bias in the income distribution can partly be corrected via tax policies and the provision of public goods.

(2009: 7)

Horn et al. go into more detail than the prior accounts in their discussion of developments within Germany, providing insights into the

specifics of the causal linkages between inequality and the crisis. For example, Fitoussi and Saraceno and Stockhammer argue that it was the 'interaction' between the general pattern of growing inequality and financial market deregulation that determined which of two paths a country followed. As Horn et al. describe, however, financial markets were also extensively deregulated in Germany after the mid-1980s, though this affected regulations for mortgage loans only recently and these regulations remained more restrictive than in the United States. Leading up to the crisis, German banks took a two-pronged approach, low risk at home and high risk abroad. They invested heavily in foreign securitized mortgage debt and so contributed to the corresponding speculative bubble and subsequently sustained severe losses when the bubble burst. As to why German banks were more conservative at home, Horn et al. argue that there was more to it than financial market regulation as such, referring to 'the traditionally close relationship between banks and clients as well as fears that the clients would not tolerate the sale of their loans' (2009: 22). Consistent with this and in contrast with the United States, household consumption in Germany was basically financed through current income.

Horn et al. also provide a useful account of why household savings rates increased in Germany, attributing this to two main factors. First, income inequality and poverty in Germany increased more rapidly since 2000 than in any other OECD country (OECD 2008). The conjuncture with the substantially higher savings rates of higher income earners in Germany (19.0 per cent for the richest income quintile compared to -4.6 per cent for the poorest as of 2003) implies higher aggregate household savings rates. Second, pension reforms resulted in less generous benefits, prompting increased savings for retirement.

Horn et al. emphasize that policies of wage restraint, labour market deregulation, social spending cuts and less progressive taxation were advocated by influential policy advisors in Germany, and more generally that rapidly growing inequality was to a significant extent the result of related policy decisions. These policies were advocated on the grounds that they would make Germany more internationally competitive and result in more rapid GDP and employment growth. While wage restraint did improve Germany's international competitiveness, particularly with respect to net exports, the authors argue that this was at the expense of contributing to current account imbalances and the economic crisis. The authors also present evidence based on a macroeconomic simulation model that Germany's wage restraint policies impeded rather than promoted GDP and employment growth.<sup>9</sup> That is,

both GDP and employment growth would have been higher had wage shares held steadily since 1999 rather than declined, even though net exports (and so Germany's contribution to regional and global imbalances) would have been substantially lower.

Hein and Truger write of 'the three main causes of the current malaise, that is, the inefficient regulation of financial markets, the inequalities in income distribution, and the imbalances in the current accounts at the global scale' (2010: 23). With regard to global imbalances, they contrast what they call the 'dynamic consumption-driven model of the US' with the 'stagnating German neo-mercantilist model' (2010: 11). In spite of other differences between these two models, Hein and Truger (like Horn et al.) describe how financial markets were extensively deregulated in both Germany and the United States in recent decades. Hein and Truger note that the fragility of the US model has been widely remarked, depending as it did on increasing household debt and housing prices. Yet they argue that the German model was also fragile, for it depended on expanding export markets and also involved increasing capital outflows to faster-growing economies. Indeed the initial impact of the crisis on Germany was via a combination of the so-called 'Great Trade Collapse' (Baldwin 2009) and financial contagion from the subprime mortgage collapse.

The general line of argument of these papers can be illustrated by Figure 8.1 as the movement from boxes A to both B and C to both D and E and finally to F. That is, neoliberalism is argued to give rise to both financial deregulation and inequality (or, as Stockhammer puts it, financial deregulation and inequality are 'components' of neoliberalism). Growing inequality can give rise, in turn, to either higher or lower household savings rates, depending on the nature of the interaction between inequality and financial deregulation (for example, Germany versus the United States). Related, the nature of the interaction between inequality and financial deregulation is argued to determine which of 'two paths' or 'models' a country follows, including whether it runs persistent current account surpluses or deficits. Put differently, a country's pattern of domestic and current account balances, D and E, is argued to be determined by the interaction between B and C, from which follows the crisis.<sup>10</sup>

## **Where do we stand?**

Historical data show no general relationship between high or increasing inequality and financial crises (Atkinson and Morelli 2010, 2011;



Bordo and Meissner 2012), though there is suggestive evidence that lower inequality is associated with longer growth episodes (Berg, Ostry and Zettelmeyer 2008; Berg and Ostry 2011). This does not mean that inequality was not a cause of the post-2007 or other financial crises. What it does mean is that theoretical and empirical studies of these crises cannot be overly abstract but rather must provide historically-specific accounts of the particular circumstances by which inequality resulted in crisis in these instances. Such accounts must also be causally-specific in the sense that they must address how common causes like growing inequality or weakened social safety nets can result in opposite outcomes regarding household savings rates and trade and current account balances, as exemplified by the contrasting cases of Germany and the United States. Here it is not sufficient to refer to the interaction between inequality and financial market liberalization generically, for such liberalization was widespread. Rather, one must get at the specific institutions of mortgage and credit card lending that resulted in so many households in the United States and other countries (e.g. Greece, Ireland, the United Kingdom and Spain) taking on large debt burdens.

Among some of the contributors to this debate, there has been a lack of clarity whether it is growing inequality per se or stagnant or declining real incomes or some combination of the two that matters, as suggested by the debate between Rajan and Acemoglu. This is not a trivial point, for it determines the sort of evidence worth marshalling and arguing over. It also has policy implications. That is, if stagnant or declining real incomes are the more fundamental (or at least an important) culprit, then policies that reduce inequality (e.g. higher taxes on the wealthy) without boosting real earnings for the many will have limited effect in reducing the risk of future crises, however desirable these policies may be on other grounds.

One of the complicating factors in assessing whether real or relative incomes matter more is that real earnings in the United States are calculated via an average CPI, but, as this chapter has shown, households at different income levels have substantially different consumption expenditure patterns. For example, lower-income households in the United States spend more on rent and less on mortgage payments; more on food and health care and less on personal insurance and pensions. Without constructing income-group-specific CPIs, in other words, there is an imprecise sense of the real incomes of households at different income levels, and so only an imprecise sense of the relative importance of discretionary versus non-discretionary consumption expenditures.

There are several potential linkages between inequality and the post-2007 crisis on which the empirical evidence is far from resolved. For example, Glaeser et al. (2010) and Mian and Sufi (2009) reach opposite findings regarding the extent to which easy credit (and loose monetary policy in the case of the former) resulted in higher housing prices: with Glaeser et al. finding that easy credit was only a small part of the story but Mian and Sufi finding that it was very important.

Three explanations are considered here of declining household savings rates in the United States – the relative income hypothesis, wealth effects, and weakened social safety nets and labour market institutions, recapitulated in turn as follows.

- Regarding the relative income hypothesis, the findings of Frank et al. (2010) that counties in the United States with high inequality experience greater financial distress (proxies for low household savings rates) are inconclusive. It may well be that the more fundamental relationship is between financial distress and households with stagnating or declining real incomes *within* counties, as suggested by the work of Mian and Sufi (2009). More direct evidence for the relative income hypothesis for the US is provided by Bertrand and Morse, who estimate that the increased consumption of high-income households resulted in between 2.6 and 3.2 per cent higher consumption by middle-income households (2013). Yet debt-to-income ratios of middle-income households increased by many-fold more during this period, roughly doubling from 1989 to 2010 (Figure 8.3). Also relevant is evidence showing that the increasing incomes of high-income households were narrowly driven by the top 1 per cent (Atkinson et al. 2011) and that growing inequality among counties of the United States was driven by the handful of counties with the highest average incomes (Galbraith 2012). As lower- and middle-income households are more likely to compare their consumption with the Joneses than the Rockefellers, these findings present a challenge to the relative income hypothesis, at least as a leading explanation of rising household debt in the United States.
- Regarding wealth effects, Maki and Palumbo (2001) argue that in the 1990s the fall in aggregate household savings rates in the United States was driven by the top income quintile, but this is at odds with data from the US Survey of Consumer Finances, which shows the greatest increases in household debt-to-income ratios for lowest income households and the smallest increases for highest income households, for the period 1989–2010 (Figure 8.3). Onaram et al.

(2011) estimate that wealth effects (from housing and financial wealth) account for about one-fifth of the increase in the consumption share in the United States between 1980 and 2007, leaving four-fifths of the increase unaccounted for. Finally, US Consumer Expenditure Surveys show that, in the 2004–2007 period, consumption expenditures exceeded income for households in the two lowest income quintiles while the opposite held for households in the three higher income quintiles. That is, in this key period leading up to the crisis it was the poorest 40 per cent of households in the United States who paid for consumption expenditures by drawing down their savings and borrowing.

- The argument by Montgomerie (2011) that weakened social safety nets and labour market institutions resulted in lower household savings rates in the United States is supported by several studies showing that in recent years a large number of households took on credit card and other unsecured debt as a result of medical expenses, unemployment and other basic living expenses, as well as by the growing percentage of those in the United States without health insurance (Cohen et al. 2010; Demos 2005; Doty et al. 2005; Sullivan 2008). The role of weakened social safety nets and labour market institutions is also emphasized by Horn et al. (2009), Reich (2010) and Taylor (2011) in their accounts of the crisis.

As for subprime mortgage lending in the United States, the findings of Mian and Sufi (2009) merit particular consideration. The detailed level of their analysis reveals that underlying the positive relationship between income growth and mortgage credit growth at the county level is a negative relationship between the two *within* counties, as mortgage credit was disproportionately extended to high-risk borrowers within counties for whom real or relative income was declining. In this sense, the positive relationship between inequality and mortgage credit growth at the county level is incidental. We have noted that Rajan emphasized the role of middle-income households in the housing boom and bust, given their much higher homeownership rates than low-income households. At the same time, the very sharp increase in expenditure shares on rent for low-income households is important in this context, for some of this increase was derived from the increase in housing prices. Low-income households are indeed part of the link between the housing market bubble and household debt, all the more so given that it is they who experienced the largest increases in debt-to-income ratios since the late-1980s (Figure 8.3).

The debate on inequality as a cause of the crisis is both unsettled and rapidly unfolding, with significant new publications coming out monthly. In the face of such incomplete and conflicting evidence, this chapter nonetheless presents the view that developments in real incomes were very important in contributing to the high levels of household debt that Taylor refers to as the 'crucial link' between the financial crisis and the crisis of the real economy (2011: 352). In other words, we feel safe in arguing that non-discretionary consumption expenditures – simply keeping one's head above water – played a key role in contributing to unsustainable household debt in the United States, as evidenced by the particularly rapid increases in household debt ratios and expenditure shares on rent for households at the lowest income quintile as well as studies on credit card and other unsecured debt noted already. More generally, the consideration of both real and relative incomes should be central to this debate and the distinction and relationship between the two more explicit in both analysis and policy recommendations. While we are not ready to argue for the greater importance of real than relative incomes as a cause of the crisis, it is our view that developments in real incomes and non-discretionary consumption expenditures have received less attention in these debates than they merit.

As for policy suggestions, for countries like the United States with high household debt ratios, boosting real incomes for low- and middle-income households can only help in breaking down Taylor's 'crucial link'. Though this would probably not prevent future financial crises, it could limit their impact on the real economy. One desirable policy outcome would be for real wages to grow in line with productivity, and thus for functional income distribution to be stable. The chapter leaves open the question of the policy instruments to achieve this, except to say that strong workers' organizations have historically played an important role in creating a level playing field with employers. Also left open is the question of the wage share ratios at which real wages should begin to grow in line with productivity, except to say that it is highly problematic for workers to be locked into historically-low ratios after decades of wage share declines in the United States and other countries.

Rising real incomes would enable households to avoid taking on debt resulting from non-discretionary, if not discretionary, consumption expenditures. But the logic of financial crises is not alive to such distinctions. Sustainable increases in real incomes are limited by real productivity gains; increases in bad debt, on the other hand, are not similarly bounded by real factors, but largely by regulations and regulators. In this sense, lending practices may trump considerations of real

and relative incomes, discretionary and non-discretionary consumption expenditures. Without sufficiently stringent regulations and vigilant regulators, perhaps the main barriers to unsustainable household debt in the future will be the scars left by this debacle.

## Notes

1. While the effect of easy credit and low interest rates on the housing bubble and the crisis more generally remain unsettled, an alternative perspective to Glaeser et al. is provided by Mian and Sufi (2009). Using highly-disaggregated regional data for the United States, the authors estimate that fully 40 per cent of the within-county increase in housing prices between 2002 and 2005 is attributable to the expansion of mortgage credit.
2. Krugman provides a complementary account in a presentation to a Luxembourg Income Study research conference (Krugman 2010). He argues that there are three possible reasons why the crisis followed growing inequality: '1. Coincidence, 2. Common causation – e.g., neoliberal ideology, 3. Actual causation: inequality somehow creates macroeconomic vulnerability.' Krugman summed up the presentation with a flowchart showing three boxes titled 'politics', 'inequality' and 'financial fragility', in which a two-way arrow between 'inequality' and 'financial fragility' is labelled with a question mark.
3. See also Barba and Pivetti (2009), Palley (2012) and Tridico (2012) for other recent accounts in a similar spirit focusing on inequality in the United States.
4. Reich considers 'trade and technology' as causes of growing inequality, and argues that these factors did not result in fewer net jobs but that the new jobs created paid less than the old jobs lost as a result of trade expansion and labour-displacing technical change. Reich writes that 'Over the longer term, the problem is *pay*, not *jobs*' (pp. 53–54). However, Reich's way of arguing the point supports the idea that skills-biased technical change was a determinant of inequality, which seems at odds with his description of the causes of inequality, quoted already.
5. The authors are grateful to an anonymous reviewer for making this point.
6. In their analysis, the authors address ZIP-code level variation within both counties and 'metropolitan statistical areas', though for the sake of exposition only counties are referred to here.
7. As of 2004, the Consumer Expenditure Survey introduced an imputation method to fill in the blanks resulting from non-responses to income questions. This enables a more accurate comparison of household income and expenditures and accounts for why these expenditure to income ratios are not constructed for earlier years.
8. Hein classifies France, Italy and Portugal as 'neither-nor' economies, as they have mixed characteristics, notably, current account deficits combined with slow growth. And though both the total private sector and private household sector accounts were in surplus in France and Italy, in Portugal the total private sector was in deficit and the private household sector in surplus.
9. Based on the macroeconomic model of the Institute für Makroökonomie und Konjunkturforschung (IMK), with whom the authors are affiliated.

10. Formal theoretical models of and cross-country econometric evidence on the effects of top income shares on current account imbalances are provided by Kumhof et al. (2011) and Al-Hussami and Remesal (2012).

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