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# The effects of financial globalization on global imbalances, employment and inequality

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# Preface

This paper has been prepared as background to the new Institute's publication entitled *World of Work Report*, which this year focuses on the issue of income inequality. The Report shows that, in the majority of countries, the incomes of richer households have increased relative to those of their middle- and low-income counterparts.

This can be good for the economy. Indeed, it is crucial to reward work effort, talent and innovation – key engines of economic growth and wealth creation.

However, there are instances where income inequality reaches excessive levels, in that it erodes social stability. Growing perceptions that income inequalities are too high may weaken political support for pro-growth policies. Too much income inequality can also be conducive to unstable economic growth.

The Report examines a number of factors which may be conducive to excessive income inequality, such as financial globalization and steep increases in executive pay, disconnected from firm performance. The role of domestic factors is also analysed, including i) emerging patterns of employer-employee bargaining; ii) the trend increase in non-standard forms of employment; and iii) the ability of the tax and transfer systems to redistribute the gains from economic growth.

This paper examines the specific role of financial globalization. It presents an innovative analysis of the links between freer capital flows on the one hand, and a range of imbalances, notably income inequality, on the other. Importantly, the paper considers whether financial globalization may pose a tradeoff between growth and equity objectives.

In short, the paper sheds analytical light on how policy makers could reform financial systems in manner which takes into account economic and social goals. It is therefore an extremely timely piece, in the context of the ongoing financial and economic crisis.

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# Introduction

Trade liberalization, and its impact on economic growth, employment and inequality, has come in for considerable scrutiny in recent years, but much less attention has been paid to the effect of financial market liberalization.[1] Now that the recent financial market turmoil in the United States has turned into the "first global financial crisis of the twenty-first century" (Felton and Reinhart, 2008), however, the labour market fall-out from such crises deserves renewed interest. The spillover of US financial market stress to other developed and emerging markets, in the form of interest rate hikes and the loss of liquidity, has demonstrated yet again that developments in international financial markets can have a substantial impact on domestic economic and social development, with adverse consequences for employment growth and income opportunities. This paper presents a review of the existing debate and adds new empirical evidence on the impact of financial liberalization and global financial flows on growth, employment creation and income inequality.

In theory, financial liberalization and the free allocation of global capital flows should generate substantial macroeconomic benefits for both capital exporters and recipient countries. Global trend productivity and employment are believed to grow faster, thereby lifting less developed countries out of poverty and helping to maintain (or further improve) living standards in the developed world. Low-income households are expected to benefit in particular, with the result that both global and within-country inequality are decreased. It has been suggested that financial globalization can both boost average per capita income and – potentially – lower income and wealth inequality in the following three ways:

- It can provide low-income countries with access to capital and help to improve the allocation of funds. It should also make it easier for low-income households – typically the most credit-constraint ones – to access the capital market and thereby lower income inequality within countries.
- By imposing discipline on governments, it can improve macroeconomic policy-making and encourage the implementation of pro-growth reforms. This would improve income prospects across the board but would be particularly beneficial for low-income households ("pro-poor growth").
- By strengthening corporate governance (for instance, through a more competitive market for corporate control) and stiffening product market competition (through the inflow of new, internationally operating enterprises), the argument goes, financial globalization helps to put capital flows to the most efficient and productive use and ensure that executives are performing at their best. This improves the business environment in both emerging and developed countries.

The experience of the past two decades has, however, shed significant doubt on whether these benefits have materialized and to what extent further financial globalization will help improve employment and living conditions in low-income and emerging economies. Trend productivity growth rates have accelerated – but not necessarily in the countries that opened their capital accounts the widest. Regular boom-bust cycles have wiped out earlier income gains to a large extent – mainly in middle-income countries – despite a global trend towards less volatility

[1] For the purpose of this paper, financial liberalization refers to *de jure* measures aimed at both international financial markets (the removal of restrictions on capital import and export– "capital account opening" and exchange restrictions) and domestic capital markets (the removal of interest rate freezes or credit controls, as opposed to financial globalization, which refers to the de facto development of international capital flows. Financial openness refers to the de facto openness of the capital account (free entry and exit of capital flows to and from abroad).

in economic activity. Low-income households do not seem to have benefited from improved access to financial markets to insure themselves against shocks. As a consequence, global inequality has, at best, remained constant, while inequality within countries seems to be rising, regardless of their level of economic development.

This paper reviews the empirical evidence for the macroeconomic effects of financial globalization and discusses why several of the expected benefits have failed to materialize, in terms of both long-term economic growth and the vulnerability of low-income households. The indirect effects that financial liberalization may have on inequality are discussed in the light of its impact on domestic policy-making. The paper also demonstrates the existence of a trade-off between higher trend growth and more inequality when countries open their capital accounts, due to the tendency of excess financial liquidity to generate lending booms. The main findings of the paper can be summarized as follows:

- Financial globalization has accelerated since the early 1990s, with advanced countries investing financial assets in international markets amounting to several times their GDP. However, despite these substantial capital flows around the globe, financial globalization has failed to improve global productivity or employment growth significantly. In comparison to trade liberalization, opening the capital account has been producing only few benefits to job creation. In addition, domestic financial liberalization can be shown to lift turbulence on the labour market, thereby increasing unemployment despite raising number of jobs.
- Moreover, despite accelerating financial globalization, less developed economies are not receiving their share of global savings. On the contrary, savings continue to flow from less to more developed economies, in contrast with theoretical predictions (the "Lucas paradox"). The presumption is that this may have to do with a lack of domestic financial market development, with adverse effects on the rates of return necessary to attract international investors and to prevent capital outflows of excess savings.
- Partly through the lack of proper regulation or an adequate supervisory framework, the frequency of financial crises has increased in both developed and emerging economies as a consequence of financial globalization. Worldwide, systematic banking crises have been 10 times more likely throughout the 1990s than during the late 1970s, hardly a period of calm economic activity. Such increased instability has come at a cost in form of increasing inequality, as low-income households have been particularly affected by repeated boom-bust cycles. There is also evidence offered in this paper that financial globalization is associated with higher unemployment. From a longer-term perspective, however and at least as regards economic growth, the benefits of financial globalization outweigh the costs of crises.

The paper is structured as follows: The next section provides an overview of the main transmission channels for financial development on employment and output growth. It distinguishes particularly between the work that has concentrated on domestic financial development and the literature on the impact of international financial integration. Thereafter, some preliminary evidence is presented on the uneven progress with international financial integration and financial development and the link between underdeveloped domestic financial markets and current account surpluses that are at the heart of today's global current account imbalances. The paper then turns to the first part of the empirical analysis, analyzing in more detail the link between financial development (both domestic and international) and employment and unemployment in a panel of ILO countries. The second part of the empirical analysis turns to the question to what extent financial crises have been the result of increasing capital account opening and what their effects have been on income inequality and GDP growth. Finally, the paper concludes with some policy options that arise out of the analysis of the empirical material.

# The impact of financial liberalization and financial development on the macro-economy: A literature review

Financial market development and financial liberalization is believed to affect the real economy through at least two broad channels: First, the size of the financial sector and the volume of available credit are seen as a proxy measure for how effectively the banking sector manages to collect savings and allocate them to productive investments. This transformation process not only raises productive capacity but should also enhance the efficiency of the economy by reallocating funds from least to most productive investments. A second broad channel involves the capacity of the financial sector to absorb shocks and provide insurance. A growing financial sector will raise the possibilities for households and enterprises to hedge against idiosyncratic and – in certain cases even – systemic shocks. This second channel, however, is heavily dependent on the types of available financial products and the quality of regulation. In practice, financial development has often shown mixed results as regards the stability of the real economy. Both channels have been subject to a large and growing literature, sometimes producing controversial results. In particular the question whether financial development has led to more or less volatility and the consequences for the real economy has been intensively debated. This section retraces the current state of the literature and points to unsettled questions, in order to prepare the ground for our own empirical analysis, which will be developed in the remaining parts of this discussion paper.

## *Domestic financial development has been shown to be beneficial to growth….*

Standard growth theory predicts that financial liberalization helps to accelerate growth in low-income countries through four basic channels: First, by expanding access to liquidity it allows the domestic financial sector to develop and brings down the cost of capital, allowing more firms to make use of external funds (Fisher, 2003; Obstfeld, 1998; Summers, 2000). In addition, the fall in interest rates in emerging economies helps to alleviate poverty and reduce between-country income inequality by lowering the borrowing constraints of the households with the least access to finance. At the same time, a deeper domestic financial market steepens up competition among banks, which is conducive to a more efficient allocation of funds, thereby improving long-term productivity growth (King and Levine, 1993). Moreover, with improved opportunities for international risk-sharing, countries may be better able to exploit gains from specialization in international trade (Acemoglu and Zilibotti, 1997; Kalemi-Özcan, Sørensen and Yosha, 2001). Lastly, additional, indirect benefits may be expected from the transfer of technology and knowledge that comes with foreign direct investment, which improves total factor productivity (Bonfiglioli, 2007; Kose, Prasad and Terrones, 2008).

The least controversial of these claims relates to a basic aspect of financial liberalization, that is, the liberalization of the domestic financial system. This typically involves dismantling systems of credit rationing and interest rates controls. The case for such liberalization was made in the early 1970s in the literature on development economics (McKinnon, 1973; Shaw, 1973). It was argued, that in the context of the import substitution strategies that were then prevalent in most developing countries, controls that repressed the growth of the financial system lowered growth and exacerbated general inefficiency in the allocation of resources. They also increased inequality in the distribution of income by supporting increased industrial concentration and limiting access to credit for enterprises that were not favoured by the economic planners. Removing these distortions, the argument went, would both increase economic growth and reduce income inequality.

A basic way in which this could be done is to lift ceilings on interest rates. A rise in interest rates should increase the supply of domestic savings and screen out inefficient investments that had previously been artificially promoted. Although there were some concerns

that a rise in interest rates might not lead to the expected increase in growth rates (because of its negative effect on the cost of capital and on the level of effective demand), the macroeconomic case for domestic financial liberalization was, and still is, generally accepted. Even critics of external financial liberalization such as Rodrik and Subramanian (2008) see special benefits in domestic financial liberalization that avoid the costs of external liberalization. For example, domestic financial liberalization, unlike external liberalization, tends to lower the exchange rate, because the increase in domestic saving reduces the need to rely on foreign borrowing. Such an exchange rate outcome is favourable to the growth of the exposed sector, the main potential engine of growth.

Out of general considerations of the impact of finance on growth (see discussion above), a large literature has developed over the past twenty years which studies the importance of financial development for economic growth. Led by contributions from Ross Levine and co-authors, such as King and Levine (1993), Levine and Zervos (1998), and Beck, Levine, and Loayza (2000), as well as work such as Rousseau and Wachtel (2000), and Arestis, Demetriades, and Luintel (2001) the evidence points to a well functioning financial system as a key ingredient in improving a country's fortunes. Recently, researchers have started to move beyond the basic finance-growth question to ask more detailed questions of this relationship. For example, Rousseau and Wachtel (2002) consider how the effect of finance on growth may differ with different inflationary environments, demonstrating that there is an inflation threshold for the finance–growth relationship that lies between 13 and 25 per cent: When inflation exceeds the threshold, finance ceases to increase economic growth.

Deepening of financial markets may also have different effects on the economy depending on its level of economic development as demonstrated by research conducted by Deidda and Fattouh (2002), and Rioja and Valev (2004a, 2004b). Finally, work by Demetriades and Law (2006) and Ahlin and Pang (2008) consider how institutions and governance structures may affect the extent to which finance affects growth. Overall, however, the common thrust to these studies is a positive link between finance and growth and hence a positive contribution of financial development on employment.

### *…but financial globalization is believed to be detrimental by some analysts*

Despite these theoretical benefits of financial globalization for trend growth and inequality, empirical studies have so far produced mixed evidence, particularly regarding the impact of financial globalization on productivity and employment growth. A recent review of the literature by the IMF concluded that "[o]ur reading of this large literature based on aggregate data is that it remains difficult to find robust evidence that financial integration systematically increases growth, once other determinants are controlled for" (Kose et. al, 2006). In particular, the level of financial market openness does not seem to play any particular role, whereas there is some indication that the change in financial integration could be a driver of productivity acceleration and employment growth. This debate is by no means over (see Henry, 2007; Rodrik and Subramanian, 2008), but it is sufficient to note for the purposes of this paper that it is far from an accepted fact that financial openness increases growth. Instead, there is intriguing counter-evidence from a number of studies that the countries that have grown fastest have relied least on foreign capital (Gourinchas and Jeanne, 2007; Prasad, Rajan and Subramanian, 2007).

Part of the difficulty in finding a definite relationship between financial globalization and growth may lie in the fact that financial market openness interacts with the overall regulatory environment in any particular country. A supporting business environment with efficient governance, productive industrial relations and predictable labour regulation helps foreign investors to identify business opportunities quickly and channel funds towards their most productive use (Mishkin, 2006). On the other hand, the recapitalization of firms through portfolio flows on equity and corporate bond markets may suffer from inadequate corporate governance institutions, badly designed product market regulations or anti-competitive

behaviour by executive directors and special interest groups. In such situations, the over-hasty opening of the capital account, accompanied by loose prudential regulation and distortions in the domestic financial system, has been held responsible for many of the recent difficulties faced by emerging economies in benefiting from financial globalization (Obstfeld, 2007).

Summing up the debate it is fair to say that despite its striking impact on global financial and economic developments, the effect of capital account opening and domestic financial liberalization have not yet allowed to reach a consensus as to their macroeconomic effects. Views have converged only regarding a general positive view of domestic financial development for economic growth. Liberalization of international capital flows, on the other hand, continues to be regarded with strong suspicion, not least due to recurrent banking and currency crises in low- and middle-income countries (see below) but also because researchers had considerable difficulties in detecting the presumed benefits in the data. Neither of the two aspects of financial liberalization, however, has so far led to strong policy conclusions and little guidance exists regarding how to develop financial markets and which aspects of financial market functions to support as the economy is developing (Wachtel, 2003).

## Volatility and its consequences for growth and income inequality

The second broad channel through which financial liberalization is expected to affect the real economy regards its impact on economic volatility and the resilience to shocks (van der Hoeven and Lübker, 2006). Recent capital market developments and the long-run tendency of the frequency of banking crises to rise as documented by Honohan and Laeven (2005) have led researchers to question these potential benefits. Even though in most cases it is institutional weaknesses in the financial system or the prudential regulation and supervision regime that can be held accountable for the emergence of such crises, the sophisticated level that financial markets have reached tend to magnify the (adverse) impact on the real economy when the crisis arrives. This has led some researchers to seek whether even such crises may have (long-run) benefits for the economy, mainly by removing inefficient production units and reallocating resources to more efficient ones. The following summarizes this debate and extends it to include questions regarding the impact of volatility on income inequality.

### *Theoretically, the link between volatility and growth is ambiguous…*

Traditionally, growth and cyclical activity had been analyzed as separate issues. Most business cycle analysis in the tradition of the Real Business Cycle model (first developed by Kydland and Prescott in 1982) has taken out the non-stationary part of the time series to be analyzed. This was largely due to the fact that long-run growth trends were considered to be solely affected by (exogenous) technology developments. It is only recently with the advent of endogenous growth models that the issue of a possible interaction between volatility and growth has raised renewed interest.[2]

When growth is endogenous, factors impacting on the savings and investment rate will affect the equilibrium growth rate and not only the convergence to the steady state as in the original Solow model (where the savings rate affected only the level but not the growth rate at the long-run equilibrium). The first-generation AK endogenous growth models[3], therefore, allowed to identify two counter-acting forces regarding the impact of volatility on growth: On the one hand risk-averse investors or irreversibilities in the investment process may depress the investment rate when volatility increases, hence lowering average growth. On the other hand, an increase in volatility would lead to a rise in households' savings rates for precautionary reasons which should contribute to a higher trend growth rate. Further developments of the endogenous growth hypothesis – taking Schumpeter's original insights about firm dynamics into account –

[2] A small Post-Keynesian literature around Kaldor (1966; 1970) and Thirlwall (1979) discussed some of these issues already before the rise of dynamic general equilibrium models.

[3] Such as Romer (1986; 1990) and Lucas (1988).

have led researchers to investigate an additional transmission channel (Aghion and Howitt, 1992; Aghion and Banerjee, 2005): Recessions will have a cleansing effect on an economy's productive capacity by pushing low-productivity firms to exit the market and reallocate funds to more productive units. To what extent this last effect is benefiting the trend productivity growth rate of an economy, however, does depend on certain institutional and financial characteristics of the economy, mitigating the (theoretical) positive effect of volatility on growth: When policies and institutions prevent low-productivity firms from exiting the market (Caballero and Hammour, 1998) or when financial markets are not sufficiently well developed to reallocate funds quickly to more profitable sectors (Aghion et al., 2005), rising volatility will increase the economic costs of shocks without lifting long-term trend growth.

### *…and empirical evidence has not helped to settle the issue*

Empirical analysis of the link between productivity growth and the business cycle has produced mixed results, both regarding the sign and the size of the relationship. Using cross-sectional data from 92 countries, Ramey and Ramey (1994) find a negative correlation between volatility and growth. Bruno's work (1993) on inflation and growth and Gavin and Hausmann (1996) who studied volatility in Latin America in the mid-1990s also provide strong cross-country support for this negative effect. More subtly, Jones, Manuelli and Stacchetti (2000) demonstrate a negative overall effect of volatility on investment and growth only when the elasticity of intertemporal substitution is higher than one. In a follow-up to theirs, Angeletos (2003) suggests that this negative relation holds true even with elasticities substantially below one, in economies in which capital does not exhaust all income.

Studies in the Schumpeterian tradition have led to more nuanced results. The first-order direct effect of volatility on growth persists in papers by Aghion et al. (2005) and others. In addition, however, a positive, second-order effect arises with the level of financial development (measured by the ratio of private credit to GDP), which can be taken as an indication that less credit-constraint firms are better able to cope with volatility. More recently, Rancière, Tornell and Westermann (2007) have analyzed the relationship between volatility and growth, considering that systemic risks also change with financial development. Relating both borrowing constraints and systemic shocks to financial liberalization, the authors demonstrate that over the last four decades, countries that have experienced financial crises have grown faster than countries with stable financial conditions. According to their analysis, financial liberalization mitigates credit bottlenecks and increases growth in countries with weak institutions; this does come, however, at the cost of an increase in systemic risk, leading to occasional crises.

### *Finding a causal link between financial crisis and inequalities has proven even more challenging*

In comparison, the literature on the relationship between the distribution of income and financial crises is much less researched and results have so far been inconclusive. To start, most research in this area has focused more broadly on macroeconomic volatility and less on the impact of financial crises on inequality (Rodrik, 1999; García-Peñalosa and Turnovsky, 2005). Those studies that looked explicitly at financial crises have done so mainly on the basis of individual country experiences and have so far not allowed to draw strong conclusions regarding the link between crises and inequality. In the Indonesian case, for example, it is found that during the Asian crisis absolute poverty rates soared but the distribution of income became less unequal (Frankenberg, Thomas and Beegle, 1999; Strauss et al., 2004). Lokshin and Ravallion (2000) find also a slight decrease in inequality in Russia during the 1998 crisis. For Mexico, however, several results exist, which find different results regarding the impact of crises on income distribution. Among the few cross-country studies, Lopez (2004) provides an analysis of movements in poverty and inequality around the time of financial crises. Broadly consistent with the evidence for Indonesia, he finds that the length of the crisis reduces inequality. A major drawback of his analysis is that no determinants of the link between the length of the crisis and inequality are studied. Rather, the evidence relied on a pre- and post-crisis comparison of Gini

coefficients, which may yield misleading results when no clear methodology is used to determine the end point of the crisis, an issue notoriously difficult to settle (Honohan, 2005).

## What do we know about financial globalization?

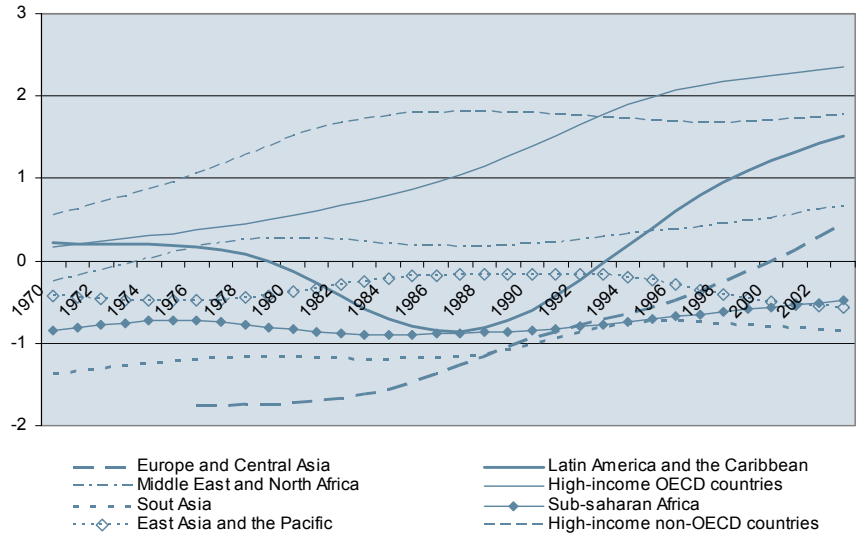
The intense debate about the costs and benefits of financial market liberalization stands in stark contrast to the actual efforts that many countries have undertaken to open their capital account. As the following section documents, most countries have at least started to make some headway towards integrating world financial markets. As a consequence, they have seen their share of global portfolio and foreign direct investment flows increase. Most importantly, however, substantial cross-country disparities both in *de jure* and *de facto* financial liberalization persists, partly related to the fact that countries have started at different points in time to open their financial markets. This has started to cause serious global imbalances in capital flows and led to substantial savings-investment disequilibria across countries and regions, which are lying behind the recent global financial turmoil. This section documents these trends and offers some explanations of how trends in the real economy have magnified imbalances arising out of geographical differences in financial liberalization.

### Capital account opening and financial flows

The opening of capital accounts has progressed unevenly across the globe (see chart 1). High-income non-OECD countries were among the first to embark on financial liberalization and have remained some of the most open regions since the early 1980s (although some restrictions were introduced during the Asian financial crisis, which have been removed since). High-income OECD countries have opened their capital accounts more gradually but eventually surpassed those of the first-movers. Most other regions have shown only very limited efforts to follow suit, although, among these, Latin American countries have progressed the most. Finally, Eastern European and Central Asian countries have seen a gradual and partial opening of their capital account, mainly in order to let international financial flows in during the privatization process in the transition period.

Similarly to *de jure* financial liberalization, effective financial globalization has progressed unevenly across the world over the past two decades (see chart 3). The sum of gross financial assets and liabilities exceeded the (nominal) GDP of European economies by 400 per cent at the end of the 1990s, whereas it had been at par with GDP at the beginning of the 1980s. An acceleration of financial market development has also been observed in North America and in East Asia and the Pacific. There has been no such acceleration in other regions; in particular in the emerging markets of South Asia and Latin America and the Caribbean, where financial market openness has barely changed over the past decade.

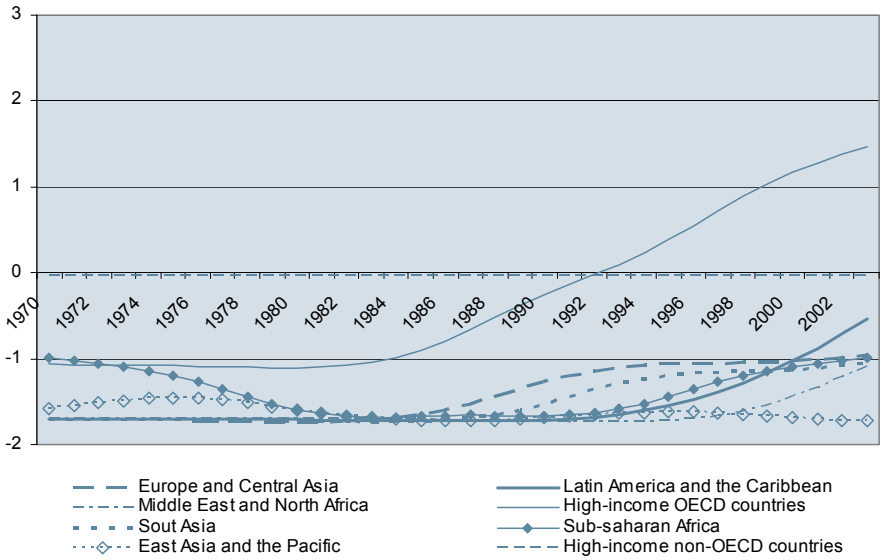
## Chart 1: De jure measures of capital account opening




Note: The chart displays the country median of a *de jure* measure of capital account openness for eight world regions (based on the geographical definition used by the World Bank, see http://go.worldbank.org/D7SN0B8YU0). The measure is based on the first principal component of (i) a variable indicating the presence of multiple exchange rates, (ii) a variable indicating restrictions on current account transactions, (iii) a variable indicating restrictions on capital account transactions and (iv) a variable indicating the requirement of the surrender of export proceeds. All variables are based on information contained in the IMF Annual Report on Exchange Arrangements and Exchange Restrictions.

Source: IILS estimates based on Chinn and Ito (2007).

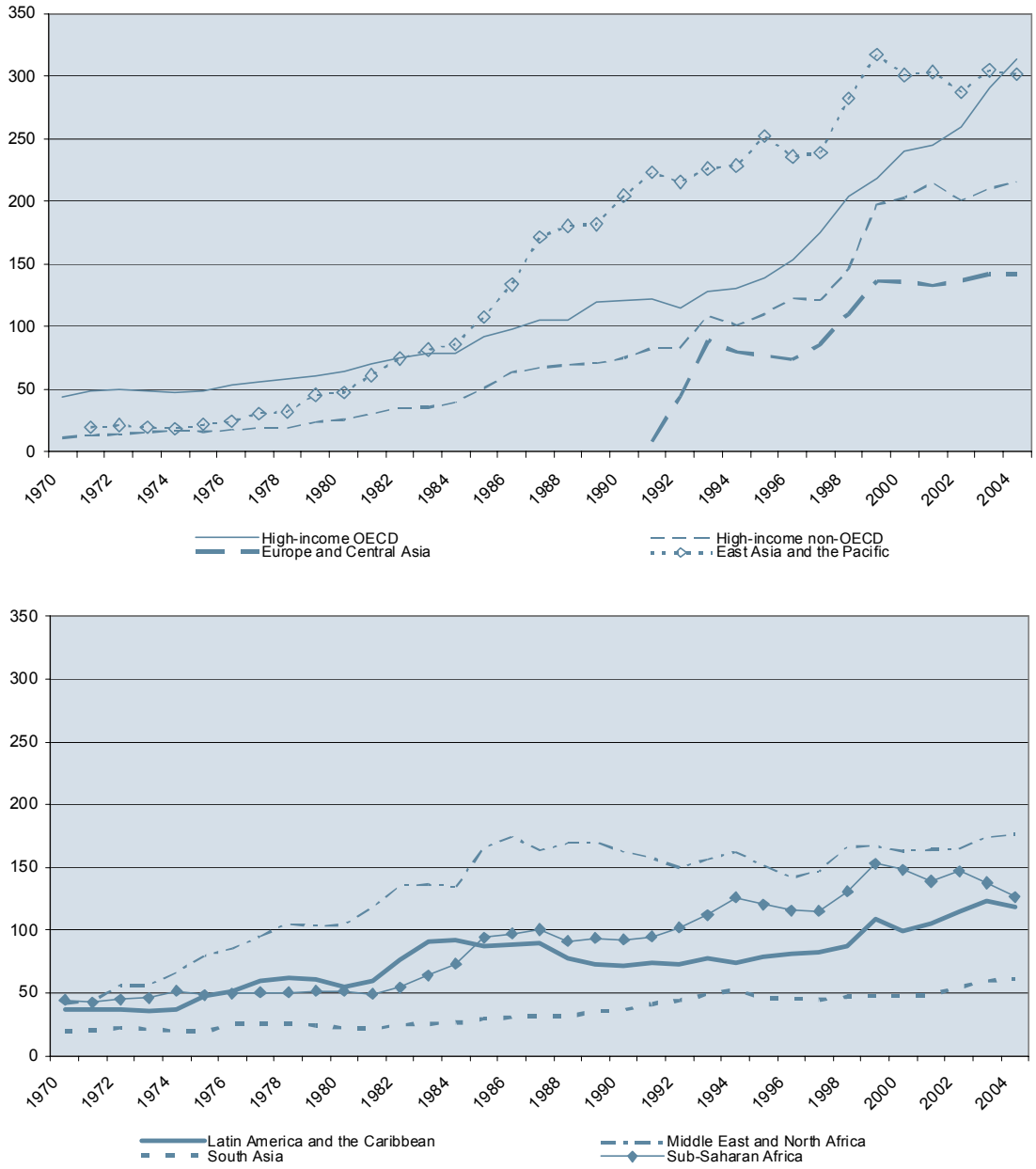
## Chart 2: *De jure* measures of capital account opening (least open countries)




Note: The chart displays a *de jure* measure of capital account openness for the lowest decile of countries in eight world regions (based on the geographical definition used by the World Bank, see http://go.worldbank.org/D7SN0B8YU0). The measure is based on the first principal component of (i) a variable indicating the presence of multiple exchange rates, (ii) a variable indicating restrictions on current account transactions, (iii) a variable indicating restrictions on capital account transactions and (iv) a variable indicating the requirement of the surrender of export proceeds. All variables are based on information contained in the IMF Annual Report on Exchange Arrangements and Exchange Restrictions.

Source: IILS estimates based on Chinn and Ito (2007).

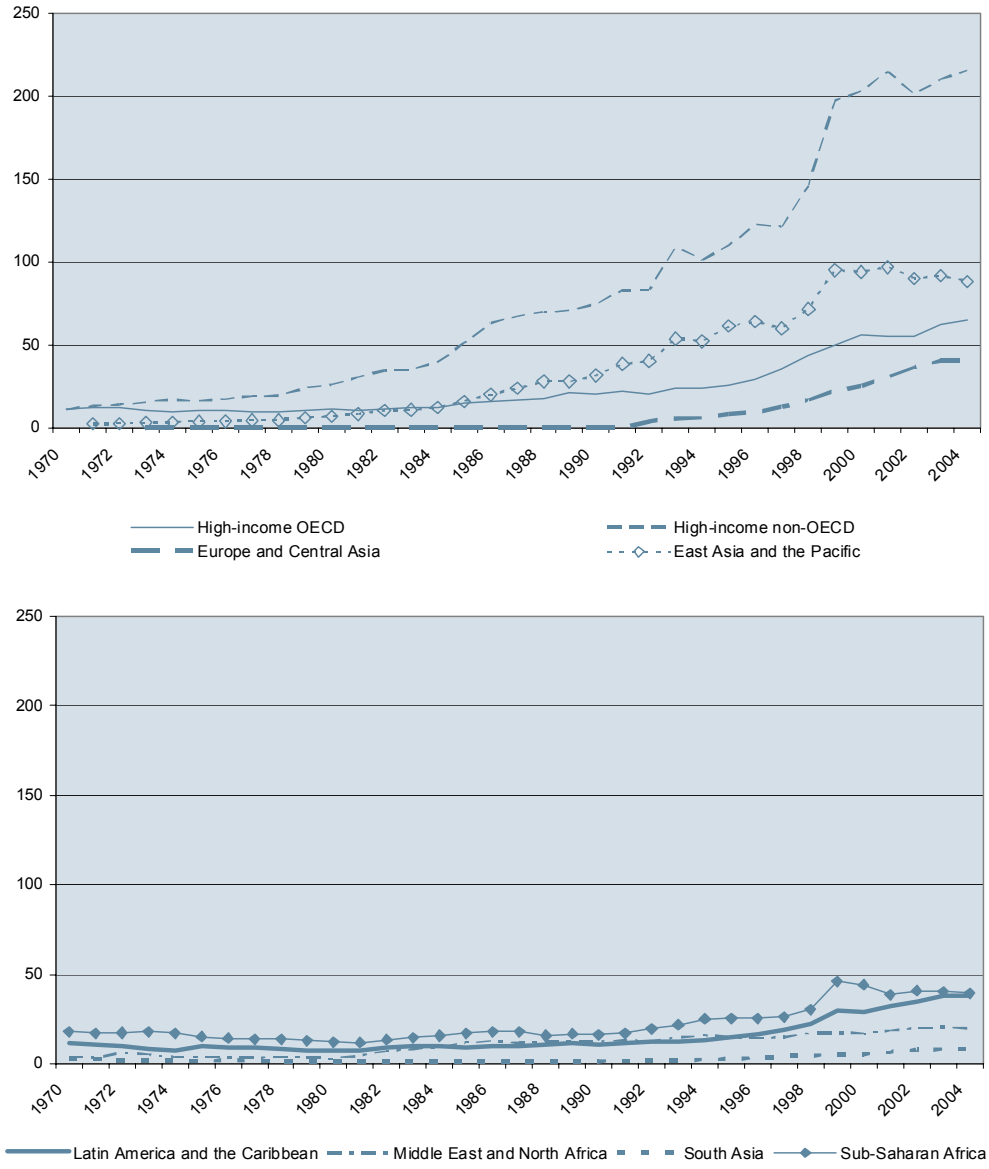
## Chart 3: Financial globalization in seven world regions (% of GDP)




Note: Financial globalization is measured as the sum of foreign assets and liabilities as a share of GDP. Foreign assets include portfolio debt and equity assets, foreign direct investment assets and reserves excluding gold stocks. Foreign liabilities include portfolio debt and equity liabilities and foreign direct investment liabilities. Regional averages have been constructed on the basis of GDP-weighted country averages. Geographical regions are based on the geographical definition used by the World Bank, see http://go.worldbank.org/D7SN0B8YU0.

Source: IILS estimates based on Lane and Milesi-Feretti, 2006.

**Chart 4: Foreign direct investment links in seven world regions (% of GDP)**




Note: Foreign direct investment includes only assets. Regional averages have been constructed on the basis of GDP-weighted country averages. Geographical regions are based on the geographical definition used by the World Bank, see http://go.worldbank.org/D7SN0B8YU0.

Source: IILS estimates based on Lane and Milesi-Feretti, 2006

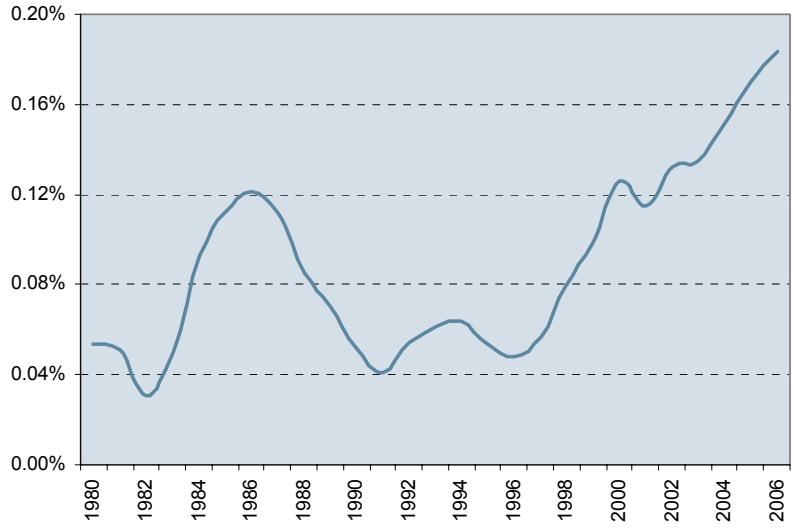
The picture changes slightly when only foreign direct investment (FDI) is considered (see chart 4). Europe and Central Asia again stand out as the main force behind financial globalization, followed by North America and South Asia. In the former regions, the widespread privatization following the fall of the communist regimes can be held largely accountable for a dramatic increase in FDI. Sub-Saharan Africa and Latin America and the Caribbean also seem to have steadily integrated with global financial markets, while African countries in general have experienced a rapid inflow of foreign capital that is expected to accelerate over the coming years, partly as a result of large investments in the mining and extracting industries (Nellor, 2008). There was no such increase in FDI in Middle Eastern and North African countries or – notably – in South Asian economies.

## Global current account imbalances and uneven financial globalization

The uneven geographical development of financial liberalization of domestic financial markets and the capital account has contributed to building up global current account imbalances, with destabilizing effects for the global economy (see chart 5). Weak financial development and distorted savings incentives combined with substantial gains in international export market shares, have led to increasing current account surpluses over the past two decades in many emerging economies. By consequence, low- and middle-income countries have become exporters of capital to high-income countries, i.e. capital flows from capital-poor to capital-rich countries – the Lucas paradox – in contrast to theoretical predictions. These developments can be partly held responsible for the difficulties of the empirical literature to find a positive relationship between international financial liberalization and economic performance. In addition, these developments have substantially increased the risk of financial crises and turbulence in contrast to theoretical predictions about the benefits of international financial integration. In the following we document the recent consequences of uneven financial globalization and discuss various underlying factors as well as some policy recommendations.

The diverging dynamics of current account balances across the world can partly be held responsible for the rise in global excess liquidity (the global "savings glut") that has contributed to cheap financial conditions and historically low real long-term interest rates (Guichard and Turner, 2008), a simultaneous boom of asset and commodity prices and the 2007-2008 financial turmoil. More importantly, these current account imbalances reflect the fact that typical mechanisms to equilibrate international financial markets have not been working properly: Exchange rates have not been adjusting, domestic demand has not been increasing in surplus countries and international interest rates have not been rising in deficit countries or decreasing in surplus countries. And it is in particular the latter two that point to domestic sources to explain these global imbalances.

**Chart 5: Global savings-investment imbalances have been increasing since the mid-1990s**




Note: The chart displays the standard deviation of the current account balance of 130 countries as a percentage of World GDP.
Source: IILS estimates.

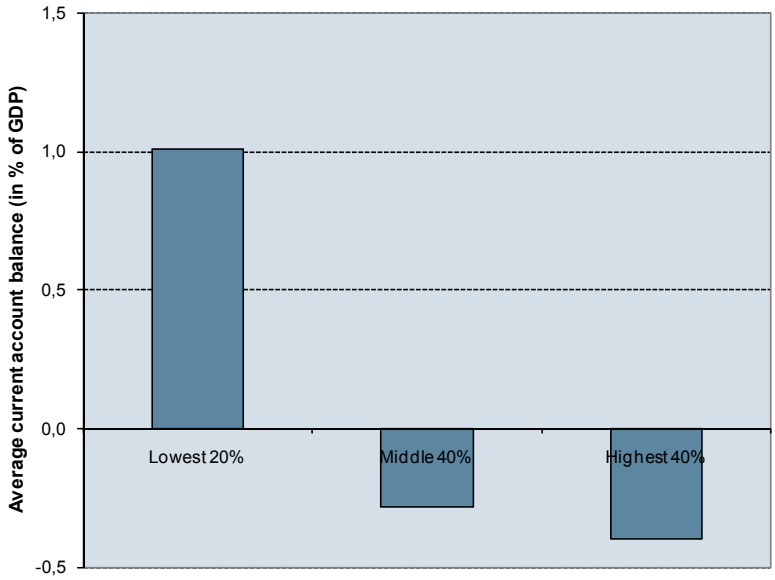
Among those domestic sources, it is in particular an underdeveloped banking sector and lack of domestic financial sophistication that seem to have contributed to the global imbalances. Recently, the relationship between domestic and international financial liberalization has been documented in more detail (see chart 6). For instance, Mendoza, Quadrini and Rios-Rull (2003) and Forbes (2008) have established a link between uneven financial liberalization and capital account surpluses that would help understanding how the current global imbalances have been emerging (see chart 6). The results of their research strongly suggests that financial globalization without proper development of domestic financial markets is likely to increase both global wealth and income inequality and within-country inequality: When domestic financial markets are underdeveloped those with the least access to credit markets are likely to be even more credit-constrained when capital accounts are being opened as capital will flow out massively. On the other hand, those with access to international financial markets – in most cases high-income individuals and international corporations – benefit fully from investment opportunities outside their home country.

Some authors have suggested that – even in the absence of further domestic financial liberalization in developing economies – the emergence of large sovereign wealth funds may contribute to resolve these global current account imbalances (Beck and Fidora, 2008). Fuelled by the recent surge in the price of oil and other commodities, a group of resource-rich emerging market economies has managed to build up substantial financial funds, often managed by sovereign wealth funds (SWFs).[4] The optimistic view has it that, given the size of SWFs and their behavior as passive investors, they need to make diversified investments on global capital markets, which might correct some of the current account imbalances that have built up over the past decade (Beck and Fidora, 2008). A more pessimistic outlook on SWFs relates to their financial importance and the potential for political interference in their investment strategies. This is particularly likely in resource-rich countries that suffer from weak governance and might be tempted to use the wealth of the funds to promote their own international political agenda. More importantly, the sheer size of SWFs – often representing several hundred per cent of the GDP of their countries of origin (Mitchell, Piggott and Kumru, 2008) – runs the risk of influencing the market. In particular, in more volatile times, there is a danger that the investment behaviour of such powerful actors will be used as a public signal for other investors, with the potential to lead to sudden stops and capital flow reversals.

Other approaches to deal with current account imbalances include the need of raising potential growth in capital account surplus countries (Kennedy and Sløk, 2005). Indeed, especially slow-growing high-income countries in the OECD have been main current-account surplus countries in the past. In high-growth emerging economies, however, the constraining factor is not so much potential growth but rather low domestic demand growth that keeps net exports at a particularly high level. In these countries, domestic financial development may be more appropriate to improve consumers' access to more sophisticated savings products, allowing them to reduce their high savings rates. In addition, deficit-financed public investment in infrastructure would contribute both to a further increase in a country's rate of potential growth, to improve employment and to bring down excessive domestic savings. Finally, especially emerging economies with under-developed welfare state systems may consider introducing at least a basic form of publicly financed income support. This could also contribute to reduce high precautionary private savings and enhance a more smoothly functioning of their economies (Feltenstein, Rochon and Shamloo, 2007).

[4] SWFs are set up primarily to prevent that temporary surges in world market prices for a country's main export commodities lead to overheating, exchange rate appreciation or rapid, unsustainable increases in government expenditure. Although SWFs have been around for several decades, the earliest example being the Kuwait Investment Board set up in 1953; it is only recently that they have attracted more widespread interest, in view of both their impact on capital market developments in individual countries and their effect on global capital flows. In particular, their (presumed) lack of transparency over their investment strategies and the potential consequences of such financial power for global stability have raised concern and caused policy-makers to consider the possibility of intervention.

**Chart 6: Financial globalization and domestic financial development**




Source: Own estimates.

A final driver of global current account imbalances has been rising inequality. Indeed, income disparities have been on the rise in most countries. The wage share – the part of gross domestic income that goes to employees – has been declining since the early 1980s and increasingly so with more integrated financial markets (see *World of Work Report*, 2008). On the other hand, the revenue share that goes to the top 10% of the income distribution has been on the rise, suggesting that the moderation in wage growth of low- and middle-income households is even more pronounced than indicated by the fall in the wage share. This general trend in rising inequalities has had two effects on household savings, depending on the characteristics of the welfare state and the banking sector: In countries with weakly-developed social security systems and unsophisticated financial markets, households had increasingly recourse to precautionary savings and lacked the capacity to absorb domestic production. In contrast, in countries with well developed financial markets and some (basic) social security provisions, households started accumulating debt in order to make up for the short-fall in disposable income resulting from low wage growth. In sum, global imbalances have been further deepened and global income disparities must be seen as a final source for the financial market bubble that burst in 2007-08.

## Labour market effects of financial globalization

Financial globalization has been shaping growth possibilities of countries that decided to open up to international capital flows. As discussed above, the empirical evaluation of this impact of financial liberalization on economic growth has so far been highly controversial and only limited evidence on the benefits of domestic financial development has been provided so far. In the following, we want to make use of a new database, combining information on both capital and current account liberalization together with data describing the evolution of domestic capital market development to understand the evolution of employment growth and unemployment rates among a large panel of countries over the last 20 years. The analysis focuses in particular on the question of whether financial globalization has both been beneficial

for employment and detrimental for (structural) unemployment, in other words whether financial globalization has led to higher turbulence on labour markets. The latter may explain at least partly why powerful interest groups have pushed policy makers to resist further capital account opening.

## Job creation and labour market turbulence

Following the existing literature discussed above, the empirical analysis of this paper considers two main channels through which financial development and capital account opening may affect labour markets. On the one hand, the availability of funds should allow firms to raise funds for investment more easily and at lower costs, thereby contributing to accelerate job creation. On the other hand, to the extent that greater financial openness and integration leads to improved (and potentially more rapid) (re-)allocation of financial flows to the most efficient use, turbulence on labour markets may increase as well (the Schumpeterian view). The latter should, however, only have an impact on the level of (equilibrium) unemployment and less so on employment creation to the extent that increased allocative efficiency of invested funds should lead to a higher trend growth rate. In the following, we therefore test for two main hypotheses:

1. Financial development and international financial integration has led to increases in employment growth;
2. Labour market turbulence resulting from financial liberalization may have increased the (equilibrium) unemployment rate without negatively affecting employment growth.

In order to test these two hypotheses, the paper makes use of a recent IMF dataset on financial globalization complemented by information on employment and unemployment developments. Financial globalization (*FinGlob*) is measured as the sum of foreign assets and liabilities relative to GDP based on Lane and Milesi-Feretti (2006). National accounts data are taken from the International Financial Statistics to derive the output gap, filtering GDP growth using a standard Hodrick-Prescott filter. Trade openness is measured by the sum of exports and imports relative to GDP as presented in the World Economic Outlook (IMF). Finally, domestic financial development is measured by deposit bank assets relative to GDP. A full overview of the variables used here can be found in the appendix.

The contributions of financial globalization on employment growth and unemployment variations as presented in chart 7 are based on reduced form equations of employment and unemployment rates. Estimations are carried out on a panel of a maximum of 59 countries (country coverage varies depending on the LHS- and control variables used) between 1981 and 2004. The baseline equations are:

$$\Delta Unr_{it} = \alpha_i + \beta X_{it} + \gamma FinGlob_{it} + \varepsilon_{it}$$

$$\Delta \ln(Emp_{it}) = \alpha_i + \beta X_{it} + \gamma FinGlob_{it} + \varepsilon_{it}$$

In both equations, additional control variables besides financial globalization include the output gap, trade openness, the employment share in manufacturing as well as a measure for domestic financial development. Other controls such as the evolution of tariff rates or school attainment have also been used without altering the results substantially. Both equations have been estimated using feasible generalized least squares (FGLS) in order to account for contemporaneous correlations between countries. Moreover, the error term is corrected for heteroscedasticity and panel-specific auto-correlation. Finally, for both equations, country-fixed effects are introduced.

On the basis of this methodology, the following table indicates a persistent and significant positive effect of financial globalization on employment growth in our country panel, independent of the specification and control variables used (see Annex 1). Differentiating

between advanced and emerging economies (based on the World Bank definition) when evaluating the impact of financial globalization – specifications (2), (4), (6) and (8) – weakens the significance level for advanced economies but not for emerging ones; a result that stands somewhat in contrast with the literature reviewed above. Domestic financial liberalization and its effect on the size of the (deposit) banking sector appears to be less strongly related to employment growth, at least when considered individually. This may indicate that the variable on financial globalization is already soaking up a fair amount of the variance related to financial development. Our preferred specifications (7) and (8) nevertheless indicate that once controls for employment in manufacturing are taken into account, both domestic and international financial liberalization improve employment growth significantly and independently from each other.

Turning to the impact financial globalization may have on variations in unemployment (see table 2), the positive effects of international financial integration on the labour market are confirmed: Unemployment decreases when countries become more financially globalized. As before, the effect does not disappear when distinguishing between emerging and advanced countries, but for the former the effect is somewhat more pronounced. In line with the discussion in the literature, trade openness also enhances labour market performance and reduces unemployment rates. Finally, the estimated impact of domestic financial development on unemployment lends support to our second hypothesis: Unemployment effectively increases with the size of the domestic banking sector, which might be a likely outcome of an increased turbulence and a more active reallocation of resources across sectors and firms.

Besides from being statistically significant, are these effects also economically relevant? The following chart 7 gives an overview of the impact of an increase of financial globalization, domestic financial development and trade openness by one standard deviation of their variation in the sample. Their contribution of these variables is compared with those of other factors (such as those controlled for in our preferred specifications). As shown in the chart, the implication of financial liberalization for employment growth is substantial, exceeding 75% of the total variation of employment growth in emerging economies and more than 40% for advanced economies. In comparison, trade openness contributes substantially less. As regards the implication of financial openness for labour market turbulence and the variation in unemployment, all three variables contribute significantly less to the overall variation in unemployment. This suggests that other (institutional?) factors are likely to be more important than resource reallocation across sectors and firms to explain the rise and fall in unemployment rates in our country panel.

## Robustness analysis

To see whether our empirical analysis is not influenced by the particularities of our dataset, we have carried out various robustness tests. These tests include the restriction of the country sample by excluding emerging Europe and Central Asian countries due to their more limited coverage over time. Moreover, the estimates have also been run by weighting observations with GDP per capita levels and by excluding outliers to ensure that no particular data point is driving the regression. Outlier detection has been based on the Welsh statistics. The following tables 3 and 4 (see next page) summarize the different equations and robustness checks for the two equations using our preferred specification (7). The results of the robustness checks confirm our initial assessment. In particular the variables related to financial globalization remain significant across different specifications. The significance of domestic financial liberalization seems to suffer somewhat when the sample size is reduced or when observations are weighted by their relative GDP per capita weights. Finally, trade openness remains a significant driver of both employment growth and variations in unemployment, even though the size of the coefficient somehow varies across different specifications.

**Table 1: Financial liberalization and employment growth**

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| Output gap | 0.002 | 0.002 | 0.003 | 0.003 | 0.002 | 0.002 | 0.003 | 0.003 |
| | (11.88)*** | (12.46)*** | (13.19)*** | (13.90)** | (11.90)*** | (12.18)*** | (14.57)*** | (14.85)*** |
| Financial globalization | 0.004 | | 0.003 | | 0.003 | | 0.005 | |
| | (2.94)*** | | (2.36)** | | (1.79)* | | (2.14)** | |
| ...in advanced countries | | 0.003 | | 0.002 | | 0.002 | | 0.004 |
| | | (2.45)** | | (1.43) | | (1.56) | | (1.98)** |
| …in emerging economies | | 0.006 | | 0.012 | | 0.004 | | 0.012 |
| | | (2.08)** | | (2.76)*** | | (1.08) | | (2.36)** |
| Deposit bank assets | | | 0.004 | 0.005 | | | 0.008 | 0.008 |
| | | | (1.12) | (1.57) | | | (2.54)** | (2.69)*** |
| Trade openness | | | | | 0.005 | 0.006 | 0.010 | 0.009 |
| | | | | | (1.39) | (1.53) | (2.54)** | (2.06)** |
| Manufacturing employment | | | | | | | 0.001 | 0.001 |
| | | | | | | | (2.60)*** | (2.34)** |
| Constant | -0.006 | -0.006 | 0.004 | -0.006 | 0.043 | 0.049 | -0.057 | -0.053 |
| | (-0.70) | (-0.77) | (0.64) | (0.85) | (1.02) | (1.77) | (3.27)*** | (2.83)*** |
| Fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 1133 | 1133 | 1050 | 1050 | 1133 | 1133 | 873 | 874 |
| Number of countries | 62 | 62 | 59 | 59 | 62 | 62 | 56 | 56 |

Note: Dependent variable: Annual growth of total employment, between 1981 and 2004. Estimates are based on feasible generalized least squares. All regressions are controlled for regional-fixed effects. Absolute value of z statistics in parentheses. The error terms are corrected for heteroskedasticity and autocorrelation. Significance levels: * significant at 5%; ** significant at 1%.

Source: Own estimates.

**Table 2: Unemployment and financial market openness**

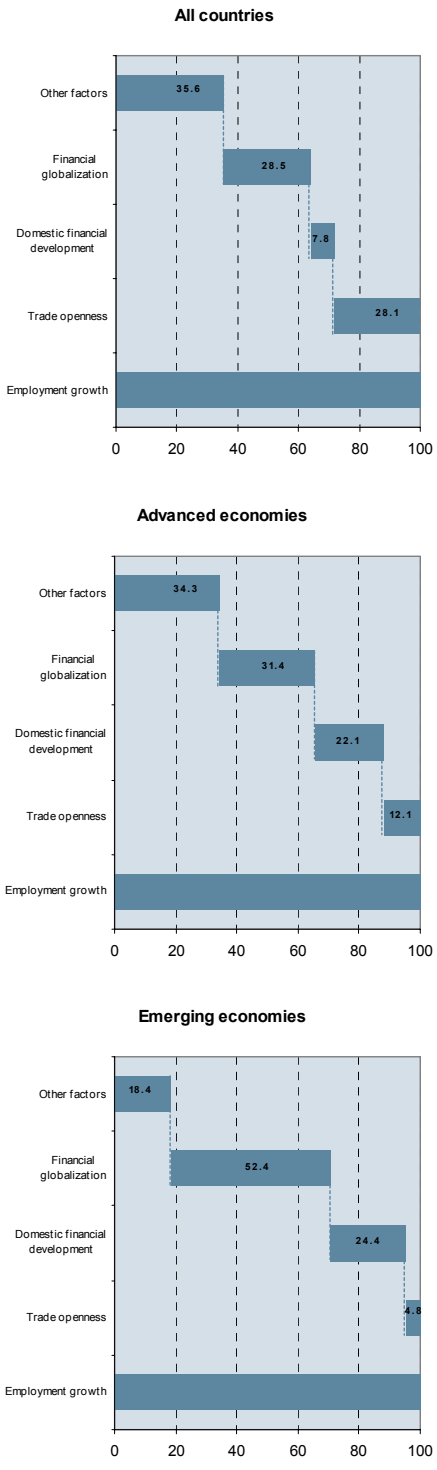
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| Output gap | -0.174 | -0.182 | -0.208 | -0.217 | -0.174 | -0.179 | -0.205 | -0.214 |
| | (17.61)*** | (18.09)*** | (18.87)*** | (19.46)*** | (17.85)*** | (17.96)** | (19.04)*** | (19.33)*** |
| Financial globalization | -0.298 | | -0.378 | | -0.226 | | -0.311 | |
| | (4.79)*** | | (5.12)*** | | (3.49)*** | | (4.02)*** | |
| ...in advanced countries | | -0.254 | | -0.314 | | -0.208 | | -0.280 |
| | | (3.83)*** | | (4.17)*** | | (3.16)** | | (3.63)*** |
| …in emerging economies | | -0.546 | | -0.950 | | -0.395 | | -0.785 |
| | | (3.41)*** | | (4.51)*** | | (2.17)* | | (3.35)*** |
| Deposit bank assets | | | 0.337 | 0.332 | | | 0.369 | 0.348 |
| | | | (1.79)* | (1.85)* | | | (2.15)** | (2.06)** |
| Trade openness | | | | | -0.362 | -0.342 | -0.413 | -0.311 |
| | | | | | (2.59)*** | (2.30)* | (2.77)*** | (1.99)** |
| Constant | 0.068 | 0.080 | 0.779 | 0.048 | 2.367 | 1.750 | 0.565 | 0.308 |
| | (0.13) | (0.16) | (1.81)* | (0.10) | (1.22) | (1.23) | (0.94) | (0.51) |
| Fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 1120 | 1120 | 1036 | 1036 | 1120 | 1120 | 1036 | 1036 |
| Number of countries | 62 | 62 | 59 | 59 | 62 | 62 | 59 | 59 |

Note: Dependent variable: Annual variation in unemployment rates, between 1981 and 2004. Estimates are based on feasible generalized least squares. All regressions are controlled for regional-fixed effects. Absolute value of z statistics in parentheses. The error terms are corrected for heteroskedasticity and autocorrelation. Significance levels: * significant at 5%; ** significant at 1%.

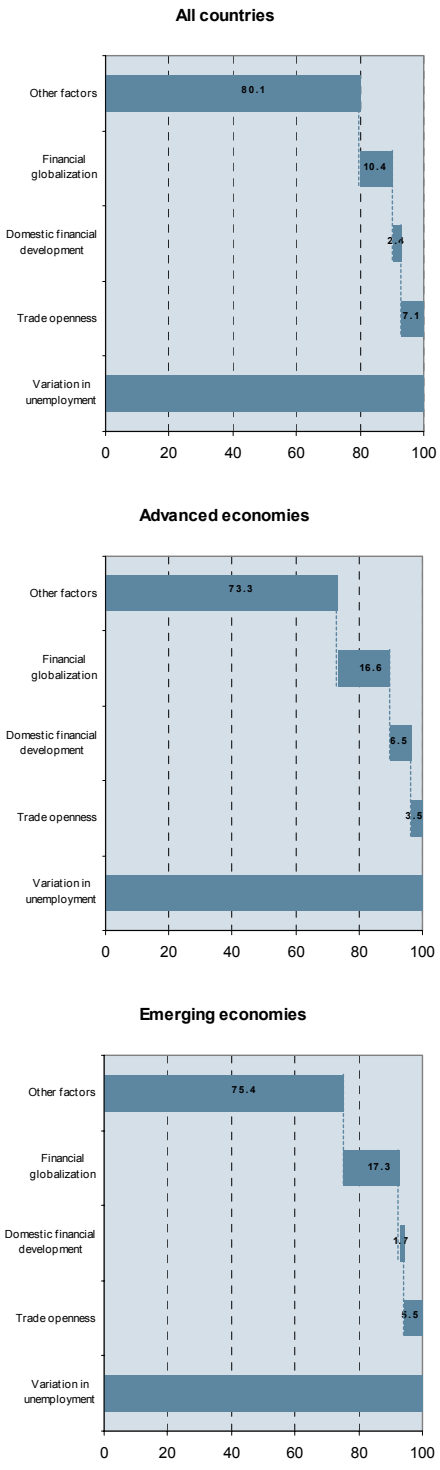
Source: Own estimates.

## Chart 7: The impact of financial globalization on employment growth and variations in unemployment

### Estimated impact on employment growth




### Estimated impact on unemployment variation




Note: The contributions are based on FGLS estimates, including country dummies.

Source: Own estimates.

**Table 3: Financial liberalization and employment growth – Robustness check**

| | Baseline equation | | Reduced sample | | Weighted regression | | Outlier control | |
|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Output gap | 0.003 | 0.003 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 |
| | (14.57)*** | (14.85)*** | (14.38)** | (14.32)** | (15.09)** | (14.82)** | (14.57)** | (14.85)** |
| Financial globalization | 0.005 | | 0.005 | | 0.006 | | 0.005 | |
| | (2.14)** | | (2.01)* | | (2.54)* | | (2.14)* | |
| ...in advanced countries | | 0.004 | | 0.005 | | 0.006 | | 0.004 |
| | | (1.98)** | | (1.99)* | | (2.55)* | | (1.98)* |
| …in emerging economies | | 0.012 | | 0.009 | | 0.026 | | 0.012 |
| | | (2.36)** | | -1.24 | | (4.46)** | | (2.36)* |
| Deposit bank assets | 0.008 | 0.008 | 0.007 | 0.008 | 0.007 | 0.008 | 0.008 | 0.008 |
| | (2.54)** | (2.69)*** | (2.31)* | (2.55)* | (2.77)** | (3.04)** | (2.54)* | (2.69)** |
| Trade openness | 0.010 | 0.009 | 0.012 | 0.013 | 0.012 | 0.012 | 0.010 | 0.009 |
| | (2.54)** | (2.06)** | (2.41)* | (2.60)** | (2.77)** | (2.68)** | (2.54)* | (2.06)* |
| Manufacturing employment | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| | (2.60)*** | (2.34)** | (2.71)** | (2.83)** | (3.85)** | (4.03)** | (2.60)** | (2.34)* |
| Constant | -0.057 | -0.053 | -0.035 | -0.045 | -0.047 | -0.042 | -0.057 | -0.053 |
| | (3.27)*** | (2.83)*** | (0.70) | (0.90) | (0.96) | (0.88) | (3.27)** | (2.83)** |
| Fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 873 | 874 | 761 | 761 | 890 | 890 | 873 | 874 |
| Number of countries | 56 | 56 | 44 | 44 | 56 | 56 | 56 | 56 |

Note: Dependent variable: Annual growth of total employment, between 1981 and 2004. Estimates are based on feasible generalized least squares. All regressions are controlled for regional-fixed effects. Absolute value of z statistics in parentheses. The error terms are corrected for heteroskedasticity and autocorrelation. Significance levels: * significant at 5%; ** significant at 1%.

Source: Own estimates.

**Table 4: Unemployment and financial market openness – Robustness checks**

| | Baseline equation | | Reduced sample | | Weighted regression | | Outlier control | |
|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Output gap | -0.205 | -0.214 | -0.225 | -0.230 | -0.245 | -0.253 | -0.211 | -0.215 |
| | (19.04)*** | (19.33)*** | (19.55)** | (19.54)** | (21.54)** | (21.80)** | (20.53)** | (20.21)** |
| Financial globalization | -0.311 | | -0.277 | | -0.230 | | -0.299 | |
| | (4.02)*** | | (3.56)** | | (3.10)** | | (3.92)** | |
| ...in advanced countries | | -0.280 | | -0.258 | | -0.206 | | -0.281 |
| | | (3.63)*** | | (3.32)** | | (2.76)** | | (3.63)** |
| …in emerging economies | | -0.785 | | -0.679 | | -0.910 | | -0.735 |
| | | (3.35)*** | | (2.43)* | | (3.66)** | | (3.31)** |
| Deposit bank assets | 0.369 | 0.348 | 0.336 | 0.323 | 0.197 | 0.160 | 0.367 | 0.365 |
| | (2.15)** | (2.06)** | (1.97)* | -1.9 | -1.11 | -0.89 | (2.15)* | (2.16)* |
| Trade openness | -0.413 | -0.311 | -0.484 | -0.417 | -0.492 | -0.382 | -0.419 | -0.320 |
| | (2.77)*** | (1.99)** | (3.01)** | (2.50)* | (3.10)** | (2.29)* | (2.85)** | (2.08)* |
| Constant | 0.565 | 0.308 | 1.900 | 2.031 | 3.347 | 3.188 | 2.528 | 0.301 |
| | (0.94) | (0.51) | (1.21) | (1.28) | (3.86)** | (3.79)** | (3.65)** | (0.50) |
| Fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 1036 | 1036 | 898 | 898 | 1033 | 1033 | 1011 | 1012 |
| Number of countries | 59 | 59 | 47 | 47 | 59 | 59 | 59 | 59 |

Note: Dependent variable: Annual variation in unemployment rates, between 1981 and 2004. Estimates are based on feasible generalized least squares. All regressions are controlled for regional-fixed effects. Absolute value of z statistics in parentheses. The error terms are corrected for heteroskedasticity and autocorrelation. Significance levels: * significant at 5%; ** significant at 1%.

Source: Own estimates.

In sum, the robustness checks lend further support to our consideration that financial globalization proves beneficial for employment growth when considering a large panel of countries and over an extended time period. On the other hand, domestic financial liberalization has contributed to a rise in the unemployment rate, partly as a result of increased turbulence on the labour market. In comparison with trade liberalization the average net effect of financial market liberalization (that is, financial globalization and domestic financial liberalization combined) appears to be sizeable, in particular in emerging economies. It should, however, be noted that our evidence reveals only the average impact of financial globalization for large country groups over a comparatively longer time. Individual countries, at specific (short) periods, may not have benefited from financial market liberalization as much as suggested by these estimates. In particular, during times of crises, growth and employment may have been adversely affected, with potentially large costs in terms of income inequality. This is the question we want to turn to in the next section.

# Financial crises, growth and inequality

As indicated in our discussion of the literature, no consensus has been reached so far as regards the impact of financial market development and financial liberalization on economic stability and resilience to shocks. Theoretically deeper financial markets should help stabilize the economy but in reality, countries often experienced the opposite after deciding to open their capital account and liberalize their banking sector. In the following, we, therefore, want to analyze how financial market development and banking crises have affected output growth and inequality *simultaneously*. The intention is to contrast the adverse effects of financial crises with eventual benefits that we have detected in our country panel of the previous section. In the end, this empirical exercise should allow us to establish a trade-off between volatility and growth, supporting the efforts of policy makers of striking the right balance between the two.

## The impact of financial volatility and crises on growth and inequality

An essential element in assessing the impact of financial crises on the real economy starts with identifying financial market crises. Existing studies have often used *ad hoc* assessments of crises and their lengths based on idiosyncratic interpretation of the data. Here, instead, we will follow the methodology first developed by Rancière, Tornell and Westermann (2007) and use the skewness of real credit growth as a *de facto* measure of systemic-risk. However, we will extend their original framework by estimating the effects of financial market liberalization and financial market developments on both long-term trends in GDP and income disparity. Taking these two variables into account will enable us to identify whether a trade-off between economic efficiency and inequality exists related to financial market globalization and if so, how steep this trade-off is.

The use of the skewness of real credit growth is based on the prediction that given a large sample of countries, economies vulnerable to crisis tend to exhibit lower skewness than economies with stable financial conditions.[5] Skewness captures specifically asymmetric and irregular patterns in the distribution of credit growth and can identify therefore the risky paths of unexpected credit busts. Capturing periods of crises with this variable allows us to avoid any assessment of the length of crisis of its occurrence based on idiosyncratic and hence necessarily biased evaluation of banking or other financial crises. Moreover, by using the first three moments of real credit growth, we are also able to disentangle the effect of trend credit growth from volatility and crisis instances.

[5] During systemic crises credit growth falls unexpectedly. But since crises only occur occasionally, the negative outliers created by the downward jump in credit growth tilt the distribution to the left (Rancière, Tornell and Westermann, 2007).

We use a similar set-up for our equations as presented in Rancière, Tornell and Westermann (2007) but add another equation to test for the effect of banking crises on inequality. For the estimation we use a sample of 146 countries in the analysis of economic growth and 102 countries in the case of inequality.[6] Time series information for the different variables is used through five eight-year non-overlapping windows for the period 1960-2006. The equations are estimated using feasible generalized least squares, corrected for regional dummies. The following equations have been estimated:

$$(1)\ \Delta Y_{it} = \gamma X_{it} + \beta_1 \mu_{\Delta B,it} + \beta_2 \sigma_{\Delta B,it} + \beta_3 sk_{\Delta B,it} + \varepsilon_{it}$$

$$(2)\ G_{it} = \gamma X_{it} + \beta_1 \mu_{\Delta B,it} + \beta_2 \sigma_{\Delta B,it} + \beta_3 sk_{\Delta B,it} + \varepsilon_{it}$$

where growth ($\Delta Y_{it}$) is measured by the average growth rate of per-capita GDP and inequality ($G_{it}$) by the Gini coefficient (expressed in logs). Three moments of credit growth have been taken into consideration in order to measure the impact of financial crises on growth and inequality: the mean ($\mu_{\Delta B,it}$), the standard deviation ($\sigma_{\Delta B,it}$), and the skewness ($sk_{\Delta B,it}$). The variable used for this purpose is the growth rate of real bank credit to the private sector. Finally, $X_{it}$ is a vector of control variables and $\varepsilon_{it}$ is the error term. In this analysis, the control set used includes initial per-capita GDP (in logs), the initial ratio of secondary schooling, the inflation rate, the ratio of government consumption as a percentage of GDP (in logs) and a measure of trade openness (X+M / GDP). The moments of credit growth and the variables measured in averages are computed over each of the five different periods considered (1960-1969, 1970-1978, 1979-1987, 1988-1996 and 1997-2006) and the initial variables are measured in the first year of each period. A full overview of the variables used here can be found in Annex 1.

We start the empirical investigation by reporting results where control variables are added one by one before turning to our preferred specification. Table 5 and 6 summarize the estimates using average annual GDP growth and income inequality as dependent variables. All panel regressions are estimated with fixed-effects to control for differences across countries and across regions. The model is also controlled for heteroskedasticity. The results indicate a negative relation between the skewness of real credit growth and real GDP per capita growth, implying that faster economic growth is related with more frequent financial crises. These estimates are statistically highly significant (at the 1 per cent level) in all equations analyzed. This is consistent with the findings of Rancière, Tornell and Westermann (2007), who predict that there is a positive link between negative skewness and mean growth. The rational behind this is that in a risky equilibrium, firms face endogenous borrowing constraints since credit is limited by internal funds. This credit grows fast but gradually as long as crisis does not arise, because internal funds accumulate also gradually. Yet, in the occurrence of a crisis, widespread bankruptcies lead internal funds to crunch and credit to fall abruptly. These sudden declines in credit are captured by the skewness of credit growth, which means that in moments of stability there is no skewness since the growth process is smooth. The successive acceleration of the economy is thought to take place by means of an increase rate of savings as explained by the AK model. Additionally, the positive partial correlation between the mean of real credit growth and GDP growth is also consistent with the literature (Levine and Renelt, 1992), as the negative partial correlation between the standard deviation and the GDP growth is consistent with the findings of Ramey and Ramey (1994), explained in the previous section.

[6] The difference in the number of countries between the two equations relates to the different origin of Gini coefficients and GDP growth data.

**Table 5: Financial crises and economic growth**

| | Dependent variable: Annual real GDP growth | | | | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Bank credit growth | 0.093 | 0.084 | 0.092 | 0.097 | 0.095 | 0.079 |
| | (42.35)** | (52.64)** | (24.89)** | (31.58)** | (29.63)** | (26.40)** |
| Bank credit variance | -0.037 | -0.027 | -0.033 | -0.034 | -0.034 | -0.021 |
| | (-24.21)** | (-60.36)** | (-22.20)** | (-28.19)** | (-18.34)** | (-20.74)** |
| Bank credit skewness | -0.133 | -0.135 | -0.118 | -0.200 | -0.202 | -0.183 |
| | (-3.82)** | (-13.46)** | (-3.76)** | (-4.79)** | (-6.57)** | (-5.35)** |
| Initial GDP per capita | -0,297 | | | | | -0.662 |
| | (-6.01)** | | | | | (-10.94)** |
| Inflation rate | | -0.003 | | | | 0.032 |
| | | (-48.15)** | | | | (13.27)** |
| Government consumption | | | -0.602 | | | -0.003 |
| | | | (-5.20)** | | | (-32.98)** |
| Trade openness | | | | 0.014 | | -1.390 |
| | | | | (11.97)** | | (-13.63)** |
| Initial secondary schooling | | | | | 0.018 | 0.018 |
| | | | | | (10.79)** | (14.30)** |
| Constant | 5.100 | 1.200 | 2.320 | 1.720 | 1.130 | 6.330 |
| | (10.48)** | (10.84)** | (8.71)** | (8.53)** | (8.38)** | (13.72)** |
| Fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Number of observations | 582 | 592 | 572 | 580 | 589 | 559 |
| Number of countries | 150 | 152 | 149 | 151 | 151 | 146 |

Note: Estimated based on feasible generalized least squares. All regressions are controlled for regional-fixed effects. Absolute value of z statistics in parentheses. The error terms are corrected for heteroskedasticity and autocorrelation. Significance levels: *significant at 5%; **significant at 1%.

Source: Own estimates.

The novel finding of our model is the negative partial correlation between the skewness of real credit growth and the Gini coefficient. Following the same rational explained for the relation between skewness and real GDP growth, the finding of negative point estimates in the Gini equations means that an increase in the amount of financial crises increases the level of income inequalities in the countries analyzed. These estimates are significant at 5 per cent level in the case of developing countries alone, and at 1 per cent level in all the other equations analyzed, which means that at the two levels of development analyzed, the results hold true.

In terms of the control variables, our analysis finds the standard results in terms of the link between the variables and growth and inequality. The exception is the effect of inflation on the Gini coefficients of high income countries (OECD and non-OECD); it seems that for higher development levels, inflation is less harmful for inequality than for developing countries. The analysis using more disaggregated data and estimating the regression coefficients for advanced and developing economies separately suggests, however, that the intensity of the impact of financial crisis on growth and inequality varies depending on the level of development of the countries analyzed.

Similar to the analysis in the previous section, we need to turn to the question of whether our statistically significant results are also economically meaningful. In particular, we would like to assess the steepness of the trade-off involved between higher GDP growth resulting from Schumpeterian-type cleansing crises and their adverse impact on income disparities. Chart 8 (p. 23) summarizes the contribution of the different financial market variables on both average GDP growth and income inequality.

**Table 6: Volatility, crises and income inequality**

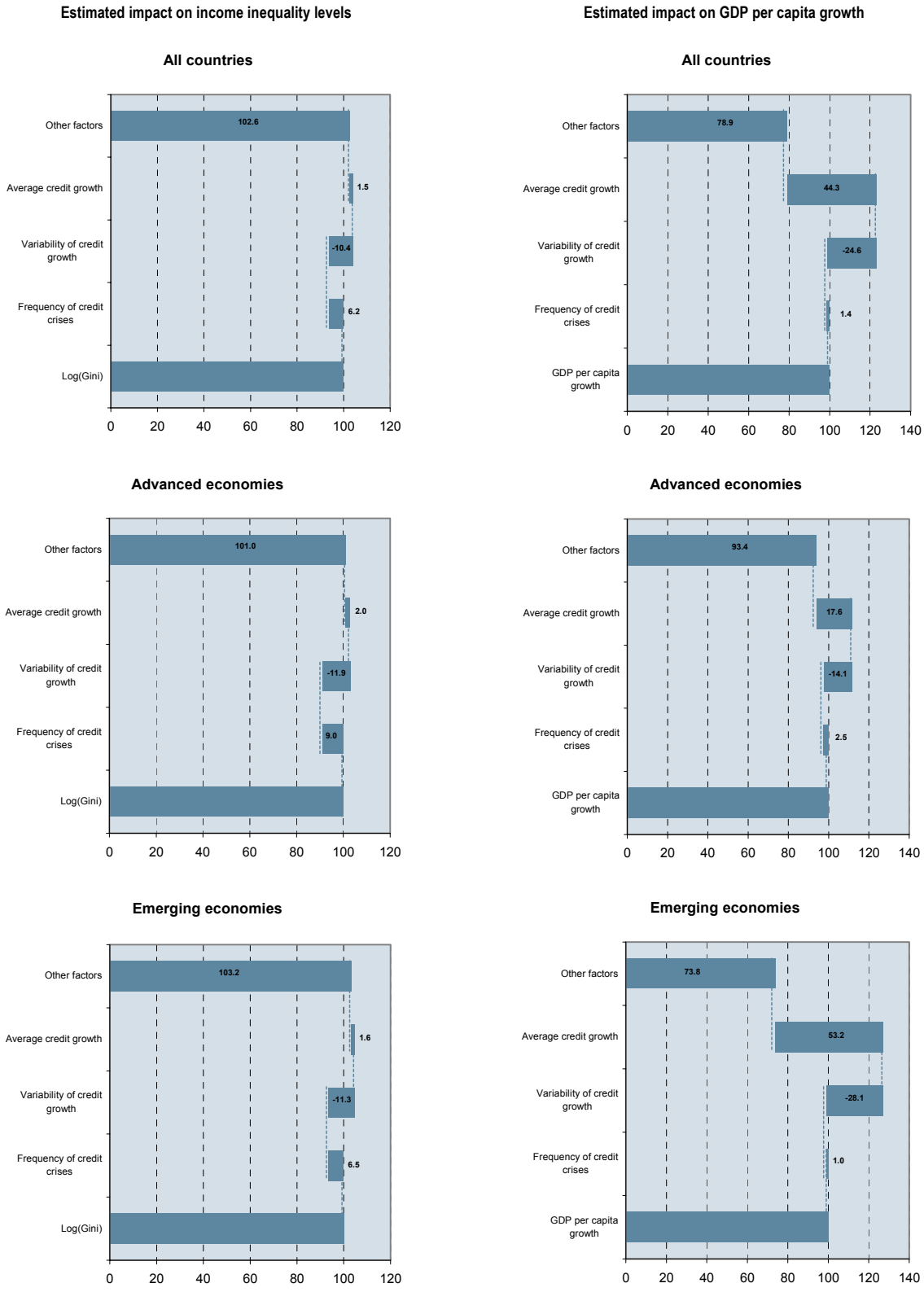
| | Dependent variable: Gini coefficient (in logs) | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Bank credit growth | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| | (10.77)** | (19.53)** | (17.13)** | (21.10)** | (27.55)** |
| Bank credit variance | -0.001 | -0.001 | -0.001 | -0.001 | -0.001 |
| | (-35.11)** | (-16.57)** | (-43.20)** | (-55.34)** | (-41.00)** |
| Bank credit skewness | -0.004 | -0.010 | -0.007 | -0.006 | -0.004 |
| | (-2.22)* | (-5.88)** | (-4.25)** | (-3.24)** | (-2.64)** |
| Initial GDP per capita | 0.033 | | | | 0.033 |
| | (17.02)** | | | | (14.70)** |
| Inflation rate | | 0.000 | | | 0.000 |
| | | (0.46) | | | (3.79)** |
| Government consumption | | | -0.037 | | -0.032 |
| | | | (-47.34)** | | (-8.09)** |
| Trade openness | | | | 0.000 | 0.000 |
| | | | | (-2.64)** | (-3.70)** |
| Constant | 3.260 | 3.530 | 3.650 | 3.590 | 3.460 |
| | (192.22)** | (350.76)** | (446.14)** | (1,122.59)** | (408.28)** |
| Fixed effects | Yes | Yes | Yes | Yes | Yes |
| Number of observations | 242 | 243 | 238 | 238 | 236 |
| Number of countries | 105 | 105 | 103 | 103 | 102 |

Note: Estimated based on feasible generalized least squares. All regressions are controlled for regional-fixed effects. Absolute value of z statistics in parentheses. The error terms are corrected for heteroskedasticity and autocorrelation. Significance levels: *significant at 5%; **significant at 1%.

Source: Own estimates.

The different graphs allow for a slightly more balanced view on the costs and benefits of financial development than the underlying econometric results discussed above. In particular, financial market variables explain on average very little of the rise and fall in inequality levels. Not surprisingly, our crisis indicator is positively related to inequality but on average it only explains 6.2 per cent of the total variance of Gini coefficients. Financial volatility as such – i.e. without considering a major crisis – even reduces inequality by a larger amount, possibly because such volatility tends to affect particularly well-to-do households. Turning to the impact of financial market dynamics on GDP per capita growth, the Schumpeterian hypothesis seems to be largely overdone: Financial market crises – even though they have a positive impact – contribute at most 2.5 per cent (in the case of advanced economies) to the overall variation in economic growth. The effect is largely dominated by financial market volatility that depresses growth by up to 28 per cent in emerging economies. Our results also confirm an earlier insight into the benefits of financial market development: real credit growth raises economic GDP per capita growth by more than 50 per cent in emerging economies and still close to 18 per cent in advanced economies. The bottom line that emerges from these graphs is that financial development clearly benefits trend growth but comes at – modest – costs for inequality. These costs tend to be particularly high when crises are more frequent, but are not limited to emerging economies.

## Chart 8: The impact of financial development and crises on inequality and growth




Note: The contributions are based on FGLS estimates, including regional dummies.

Source: Own estimates.

## Robustness analysis

Similar to the previous section, we have again carried out various robustness tests in order to see whether our empirical analysis is not influenced by the particularities of our dataset. These tests include the restriction of the country sample by considering only high-income economies in a first moment, and only developing countries in a second one. In a third effort, the sample was also split by excluding emerging Europe and Central Asian countries due to their more limited coverage over time. Moreover, the estimates have also been run by weighting observations with GDP per capita levels and by excluding outliers to ensure that no particular data point is driving the regression. Outlier detection has been based on the Cook statistics. Tables 7 and 8 (see next page) summarize the different equations and robustness checks.

Summing up this section on the socio-economic impact of financial crises, we find that the first-order effect from financial development largely dominates long-term trends, confirming the estimated benefits for employment growth of the previous section. Even though financial crises adversely affect income disparities, the impact typically tends to be small. This result carries through even when various robustness tests are applied, controlling for particular country groups or leaving out influential observations. In particular, it seems that other factors besides financial market dynamics seem to have had a much stronger influence on the evolution of inequality levels across the world, a confirmation of the findings in the recent *World of Work Report 2008*.

**Table 7: Financial crises and economic growth – Robustness check**

| | Dependent variable: Annual real GDP growth | | | | | |
|---|---|---|---|---|---|---|
| | Baseline regression | Only high-income countries | Only emerging economies | No Eastern Europe and Central Asia | Weighted regression | Outlier control |
| Bank credit growth | 0.079 | 0.084 | 0.079 | 0.079 | 0.026 | 0.123 |
| | (26.40)** | (32.40)** | (27.09)** | (26.40)** | (9.25)** | (50.80)** |
| Bank credit variance | -0.021 | -0.026 | -0.021 | -0.021 | 0.005 | -0.035 |
| | (-20.74)** | (-37.54)** | (-22.06)** | (-20.74)** | (2.13)* | (-36.95)** |
| Bank credit skewness | -0.183 | -0.134 | -0.169 | -0.183 | -0.134 | -0.244 |
| | (-5.35)** | (-4.31)** | (-4.47)** | (-5.35)** | (-3.28)** | (-7.90)** |
| Initial GDP per capita | -0.662 | -0.477 | -0.703 | -0.662 | -1.528 | -0.447 |
| | (-10.94)** | (-12.14)** | (-11.43)** | (-10.94)** | (-16.83)** | (-8.59)** |
| Inflation rate | -0.003 | -0.003 | -0.003 | -0.003 | -0.004 | -0.002 |
| | (-32.98)** | (-40.96)** | (-37.38)** | (-32.98)** | (-10.46)** | (-13.85)** |
| Government consumption | -1.390 | -1.180 | -1.280 | -1.390 | -1.100 | -0.799 |
| | (-13.63)** | (-13.63)** | (-14.90)** | (-13.63)** | (-7.34)** | (-11.18)** |
| Trade openness | 0.018 | 0.015 | 0.015 | 0.018 | 0.013 | 0.011 |
| | (14.30)** | (17.21)** | (18.18)** | (14.30)** | (10.64)** | (12.75)** |
| Initial secondary schooling | 0.032 | 0.030 | 0.038 | 0.032 | 0.029 | 0.027 |
| | (13.27)** | (26.23)** | (16.42)** | (13.27)** | (8.85)** | (18.15)** |
| Constant | 6.330 | 5.530 | 8.160 | 5.880 | 13.420 | 4.810 |
| | (13.72)** | (24.59)** | (16.05)** | (13.10)** | (19.92)** | (13.16)** |
| Fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Number of observations | 559 | 559 | 559 | 559 | 559 | 509 |
| Number of countries | 146 | 146 | 146 | 146 | 146 | 135 |

Note: Estimated based on feasible generalized least squares. All regressions are controlled for regional-fixed effects. Absolute value of z statistics in parentheses. The error terms are corrected for heteroskedasticity and autocorrelation. Significance levels: *significant at 5%; **significant at 1%.

Source: Own estimates.

**Table 8: Volatility, crises and income inequality – Robustness check**

| | Dependent variable: Gini coefficient (in logs) | | | | | |
|---|---|---|---|---|---|---|
| | Baseline regression | Only high-income countries | Only emerging economies | No Eastern Europe and Central Asia | Weighted regression | Outlier control |
| Bank credit growth | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| | (27.55)** | (6.77)** | (28.04)** | (27.55)** | (12.37)** | (7.33)** |
| Bank credit variance | -0.001 | -0.001 | -0.001 | -0.001 | 0.000 | -0.002 |
| | (-41.00)** | (-14.38)** | (-48.15)** | (-41.00)** | (-4.24)** | (-20.16)** |
| Bank credit skewness | -0.004 | -0.014 | -0.004 | -0.004 | -0.022 | -0.005 |
| | (-2.64)** | (-3.62)** | (-2.28)* | (-2.64)** | (-10.41)** | (-2.63)** |
| Initial GDP per capita | 0.033 | 0.034 | 0.027 | 0.033 | -0.005 | 0.029 |
| | (14.70)** | (12.06)** | (9.50)** | (14.70)** | (-2.18)* | (9.22)** |
| Inflation rate | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | (3.79)** | (-5.75)** | (5.15)** | (3.79)** | (-11.06)** | -1.12 |
| Government consumption | -0.032 | -0.095 | -0.035 | -0.032 | -0.190 | -0.021 |
| | (-8.09)** | (-16.18)** | (-9.33)** | (-8.09)** | (-32.46)** | (-3.02)** |
| Trade openness | 0.000 | 0.000 | 0.000 | 0.000 | -0.001 | 0.000 |
| | (-3.70)** | (-5.48)** | (-2.88)** | (-3.70)** | (-32.94)** | (2.24)* |
| Constant | 3.460 | 3.810 | 3.230 | 3.390 | 4.080 | 3.330 |
| | (408.28)** | (124.56)** | (109.62)** | (212.42)** | (209.57)** | (92.33)** |
| Fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Number of observations | 236 | 236 | 236 | 236 | 236 | 223 |
| Number of countries | 102 | 102 | 102 | 102 | 102 | 96 |

Note: Estimated based on feasible generalized least squares. All regressions are controlled for regional-fixed effects. Absolute value of z statistics in parentheses. The error terms are corrected for heteroskedasticity and autocorrelation. Significance levels: *significant at 5%; **significant at 1%.

Source: Own estimates.

## Policy conclusions and final remarks

Financial globalization is a double-edged sword. It has the potential to promote employment creation and to increase GDP growth, thereby lifting disposable incomes and consumption possibilities. At the same time, it has fuelled global savings imbalances in the past and proves to be disruptive to the labour market, rising unemployment rates and adversely affecting inequality. In the long-run, however, the implied trade-off seems to be largely dominated by the positive growth effects, provided that domestic financial markets are well developed. Only policy makers that are strongly influenced by questions regarding inequality and volatility will want to impose strict limits on international financial flows and domestic financial development.

Alternatively policy areas have been discussed in this regard and measures have been analysed that would help to mitigate the adverse effects of financial liberalization. In particular, part of the literature reviewed in this paper has argued for a better development of welfare state and social security systems, in particular in emerging economies. Not only will this help these countries to mitigate the consequences of the crisis, it will also allow them to return more quickly back on track and improve their economic resilience to shocks. Such policy reforms would include a mixture of the following:

- The first element of these mitigation policies concern measures that guarantee that those being laid off in the course of a restructuring or even a crisis are properly protected against substantial losses of disposable income. Currently, over two thirds of the unemployed worldwide do not have access to any sort of unemployment insurance. Even if they do, benefit replacement rates are often very low, barely providing replacement income to

cover the most basic consumption needs. Moreover, in order to prevent a further increase in poverty and income inequality and to maintain a decent living standard for all, governments should make sure that those who loose their jobs are protected through the use of unemployment benefits, disregarding their former link to the labour market (e.g. formal vs. informal job).

- A second area concerns lay-off procedures. The absence of proper unemployment insurance pushes many of those loosing their jobs into informal employment, leaving them without proper protection and making their future re-integration into the formal labour market more difficult. During this crisis, government should therefore make sure that workers are not summarily laid off. This could be achieved through encouraging social dialogue and ensuring that labour rules are respected and that the crisis does not become an excuse for firms to fire people.
- Unemployment benefits, social protection and employment protection are part of the core ILO labour conventions that member states have ratified. It is important that these conventions are being upheld, despite the adverse economic developments that countries are going through as a result of the crisis. And the crisis can provide a unique opportunity for those countries that are still lacking proper social insurance systems to enact innovative policies and strengthen labour legislation.

Second, an overhaul of the global monetary system could help addressing structural factors that influence the trade-off between costs and benefits of international financial integration. For instance, global current account imbalances – currently the large deficit in the US and the corresponding surpluses in China and other emerging economies, but others may emerge in the future – need to be reduced in order to lower the risk of global financial crises. Such a rebalancing includes removing impediments to adjustments in foreign exchange markets. Many emerging markets have used undervalued exchange rates to foster perspectives for their exposed sector. Some of the emerging economies benefiting from strong export growth have experienced real exchange rate depreciations, further opening up their current account surpluses. Appropriate exchange rate adjustments are needed, however, to allow economies to rebalance their internal and external demand components accordingly. Ideally, such adjustment should be achieved within an international framework of managed floats to avoid disorderly exchange rate movements. Available evidence suggests that rebalancing growth between emerging and developed economies or even within developed economies would only partly resolve the problem of global current account imbalances. Relying solely on adjustments in the real exchange rate, however, are likely to take a long time to restore equilibrium and are typically very painful. International fora and organizations therefore need to be put more at the fore to help countries adjust their nominal exchange rates in an attempt to stabilize global imbalances. Such coordinated approaches to managing exchange rates would also improve the stability of the international financial system better protecting countries against uncoordinated unravelling of the exchange rate and currency crises.

Finally, the role of social partners needs to be strengthened in order to spread the benefits more equally across society. Financial globalization has been associated with the fall in labour shares across the world (*World of Work Report 2008*), leaving many doubtful about the benefits of capital account openness. Partly, this is related to the higher frequency of banking crises that seems to be an inevitable characteristic of any transition from financial autarky to full global integration in capital markets. Strong labour market institutions in addition to well-developed welfare state systems need to ensure that these transition dynamics are happening smoothly and help getting an adequate share for the employed working population. This could not only improve the benefits arising from financial globalization, it would also reduce the incidence of crises, thereby bringing down the social costs that may result from international capital movements.

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# Annex 1 – Variable definitions

The following table summaries the variables, their definitions and their source as used in the two empirical parts of this paper.

| Variable | Definition | Source |
|---|---|---|
| CPI Consumer price index | Consumer price index (2000 = 100) at the end of the year. | IFS data – line 64 ZF and 64 XZF. |
| Deposit bank assets | Ratio of deposit bank assets as a per cent of GDP. | IFS data – line 22D..ZF. |
| Employment growth | Annual growth rate of total employment. | IMF World Economic Outlook Database (2006). |
| Financial globalization | Sum of foreign assets and liabilities as a share of GDP. Foreign assets include portfolio debt and equity assets, foreign direct investment assets and reserves excluding gold stocks. Foreign liabilities include portfolio debt and equity liabilities and foreign direct investment liabilities. | Lane and Milesi-Feretti (2006). |
| GDP per capita growth | Annual growth rate. | World Development Indicators (2007). |
| Gini coefficients | | World Development Indicators (2007); International Institute for Labour Studies estimates. |
| Government consumption | General government final consumption expenditure as a per cent of GDP. | World Development Indicators (2007). |
| Inflation rate | Annual percentage change in CPI. | World Development Indicators (2007). |
| Initial GDP per capita | Initial value of ratio of total GDP to total population (in logs). GDP is in 2000 constant US$. | World Development Indicators (2007). |
| Initial Secondary schooling | Ratio of total secondary enrolment, regardless of age, to the population of the age group that officially corresponds to that level of education. Expressed in logs. | World Development Indicators (2007). |
| Manufacturing employment | Share of manufacturing employment in total employment. | IMF World Economic Outlook Database (2006) |
| Output gap | Based on HP-detrended GDP growth. HP-filter used with λ=40 for annual data. | Own estimates based on IMF World Economic Outlook Database (2006) |
| Real credit growth | Annual growth rate of real domestic bank credit claims on the private sector. | Institute calculations based on data from IFS – line 22: Claims on Private Sector. Domestic bank credit claims are deflated with end of the year CPI index. |
| Region | World Bank regional definition | World Bank. |
| Trade openness | Trade (Exports + Imports) as a per cent of GDP. | World Development Indicators (2007). |
| Unemployment | | IMF World Economic Outlook Database (2006). |