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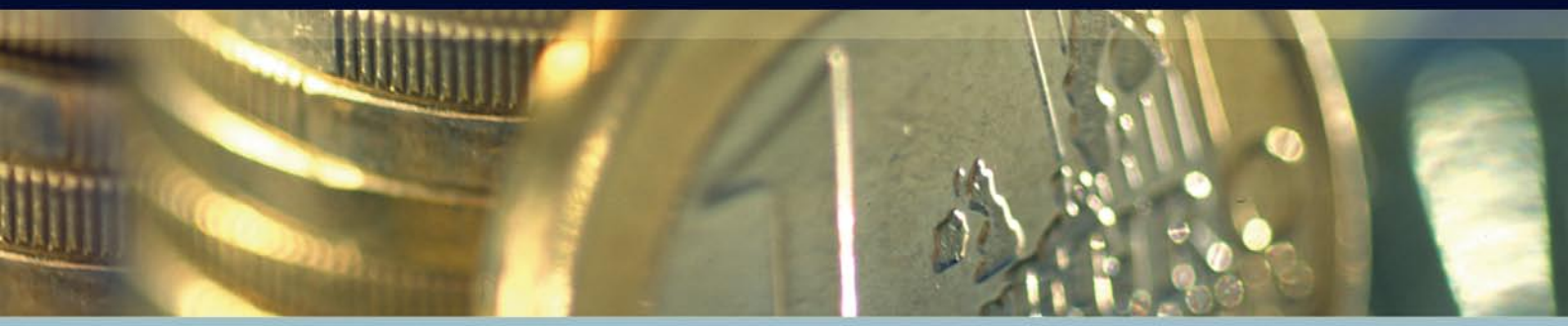

Real convergence, financial markets and the current account
Emerging Europe versus emerging Asia

Sabine Herrmann and Adalbert Winkler

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Real convergence, financial markets, and the current account – Emerging Europe versus emerging Asia

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Abstract

Global financial integration has been associated with divergent patterns of real convergence and the current account in emerging markets. While countries in emerging Asia have been running sizeable current account surpluses, countries in emerging Europe have been facing large current account deficits. In this paper we test for the relevance of financial market characteristics in explaining this divergence in the catching-up process in Europe and Asia. We assume that the two regions constitute distinct convergence clubs, with the euro area and the United States respectively at their core. In line with the theoretical literature, we find that better developed and more integrated financial markets increase emerging markets´ ability to borrow abroad. Moreover, the degree of financial integration within the convergence clubs – as opposed to the state of financial integration in the global economy – and the extent of reserve accumulation are significant factors in explaining the divergent patterns of real convergence and the current account in the regions under review.

JEL classification: F15, F21, O16, O52, O53

Key words: real convergence, economic integration, saving and investment, current account developments, financial markets, emerging market economies

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Executive summary

Over the last ten years, the process of financial globalisation has been associated with strongly divergent current account patterns in emerging market economies engaged in a rapid catching-up process. While most countries in emerging Europe have been reporting substantial current account deficits, in emerging Asia – in line with the so-called Lucas paradox – the convergence process has been associated with substantial net capital outflows. This paper examines whether and to what extent financial markets and financial integration can explain this divergence, inter alia by employing the concept that – as a result of their main financial and trade linkages – countries in emerging Europe and the euro area/EU15 form a separate convergence club distinct from emerging Asia and the United States.

Based on an econometric panel analysis, we find that financial market characteristics are major determinants of current account developments in the European and Asian emerging market economies. In general, catching-up countries with more developed and more integrated financial markets are able to borrow abroad, thus raising domestic investment relative to domestic savings. Moreover, in line with the recent literature, the results confirm that the relationship between financial integration and the current account depends on the level of income.

Financial market characteristics seem to play an even more important role in explaining divergent current account patterns. In particular, we find that the *character* of financial integration matters, as it is not the *overall* state of financial integration but the degree of financial integration *within* the convergence club that significantly helps to explain divergent current account developments in the two regions. In addition, current account deficits in emerging Europe are backed by stronger gross capital inflows and a larger share of FDI, a more pronounced appreciation of the real exchange rate, faster real credit growth and a larger contribution of foreign banks to the domestic financial sector compared with emerging Asia. Moreover, foreign reserve accumulation contributes significantly to the model's prediction of high current account surpluses in emerging Asia.

The divergent patterns of *intra-regional* financial integration are strongly rooted in the different overall approaches to integration between core and periphery taken in the two convergence clubs. Thus, the question arises to what extent the European experience can be generalised to other emerging market economies that aim at engaging in consumption-smoothing activities in a globalised financial system.

1. Introduction

Over the past decade, the process of financial globalisation has been associated with strongly divergent current account patterns in emerging market economies engaged in a rapid catching-up process. While countries in emerging Europe and emerging Asia have been receiving substantial gross financial inflows, the two regions have differed significantly with regard to direction and size of net capital flows. Most countries in emerging Europe, in keeping with standard economic theory[1], have been reporting substantial current account deficits over the past ten years (Bussière/Fratzscher/Müller, 2004; Herrmann/Jochem, 2005). Growth has been driven by domestic demand, in particular by investment, partly financed by foreign savings. By contrast, in emerging Asia – as described by the so-called *Lucas paradox*[2] – the convergence process has been associated with current account surpluses[3], while periods of expansionary domestic demand and deteriorating net exports proved to be indicators of an ensuing crisis (Asian Development Bank, 2005).[4]

There is a large body of literature on the determinants of current account balances, globally, in both advanced and emerging market economies. From this literature, a broad consensus has emerged that the state of financial development and international financial integration plays a key role in explaining why emerging economies' current account patterns contradict standard theory (Prasad/Rajan/Subramanian, 2007) or conform with predictions based on consumption-smoothing behaviour (Blanchard/Giavazzi, 2002 and Abiad/Leigh/Mody, 2007). Against this background, this paper analyses the relationship between real convergence and current account developments in emerging market economies in Europe[5] and Asia[6]. It aims at

[1] Standard economic theory suggests that the process of income convergence will be accompanied by capital flows from rich to emerging economies, reflecting return differentials and economic agents´ preferences for consumption smoothing, see e.g. Obstfeld/Rogoff (1996).

[2] According to Lucas (1990) capital seems to flow *uphill* from poor to rich countries contradicting the prediction of standard neoclassical growth models. Empirically, Lane/Milesi-Ferretti (2001) confirm that low income levels seem to be correlated with low investment inflows. Likewise, Prasad et al. (2007) conclude that emerging markets do not rely on capital inflows from rich countries, as they generate more savings than they invest. Similarly, Schularick (2006) identifies a wealth bias on the part of international investors.

[3] In recent years, other emerging market economies have seen improving current account balances as well, mainly reflecting the rise in oil and other raw material prices, which has supported trade and current account balances in many resource-rich countries. However, the largest contribution to the persistently high current account surpluses of emerging markets has come from resource-poor Asian countries, which accounted for 60% of the developing and emerging market countries' current account surplus in 2004 (Felipe et al., 2006).

[4] For a detailed account of growth processes in both regions, see Schadler et al. (2006), Crafts (1999), Arratibel et al. (2007).

[5] The emerging European countries are the new EU Member States Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia as well as the candidate (Croatia, FYR Macedonia and Turkey) and potential candidate countries (Albania, Bosnia & Herzegovina, Montenegro and Serbia) for EU accession.

shedding light on the extent to which financial market characteristics have been at the heart of the strikingly different current account patterns observed in two emerging market regions experiencing a rapid catching-up process. In doing so, we test for the significance of different types and dimensions of financial integration, namely an overall as well as an intra-regional form of financial integration. To this end, we employ the concept of *convergence clubs*, with two peripheries (the two regions) and two cores. The United States is identified as emerging Asia's core, while the euro area/EU15 is the core of the convergence club in Europe. Finally, we go beyond identifying statistically significant determinants and reveal the extent to which these variables actually contribute to the level of the current account balances.

Our analysis suggests that financial markets and financial integration are important factors in determining current account balances and their dispersion in the two regions. At the same time, the *overall* state of financial development and integration does little to explain the divergent patterns of real convergence and the current account in emerging Europe and emerging Asia. Rather, the differences reflect the different ways financial integration *with the respective core* has been proceeding. Moreover, different financial integration methods may reflect strong differences in the two convergence clubs' overall approaches to integration between core and periphery.

It should be stressed that these results are not to be seen as a contribution to the debate on the causes and roots of global imbalances, i.e. the causes and roots of global configurations of current accounts. The paper does not aim to answer the question of whether and to what extent current account surpluses in emerging Asia have been reflecting conditions outside the region, for example a fall in private and public US savings.[7] Indeed, by focusing on two sub-regions of the emerging market world, our analysis neglects developments in countries not covered by our analysis – including the United States, the euro area or any other third country or region – that may have a bearing on current account developments in emerging Asia and emerging Europe. Given the condition of a zero balance on a global scale, current account developments in any country or region are driven to a certain extent by developments in all other countries. This caveat applies to our results as it does to any study that aims at explaining the current account patterns of a certain country or region. At the same time, current account developments in third countries may be of less relevance in explaining why

[6] The emerging Asia group refers to developing Asian countries such as China, Indonesia, Malaysia, Philippines and Thailand, as well as the newly industrialized Asian economies, i.e. Hong Kong, Korea, Singapore and Taiwan. India and Vietnam are also part of the sample.

[7] Gruber/Kamin (2005) provide an analysis explicitly aimed at explaining current account patterns of emerging Asia and the US. A short overview of the various approaches explaining global imbalances has been provided by Brione (2006) and Aizenman and Sun (2008).

current account balances of countries have been so strikingly different in two regions involved in a rapid catching-up process, for which standard economic theory predicts similar patterns.

The paper is structured as follows: Section 2 introduces the convergence club concept, while Section 3 provides an overview of real convergence and current account developments in emerging Europe and emerging Asia. This provides a context for analysing major breakdowns of the current account positions, their financial account counterparts and saving-investment balances. Sections 4 and 5 discuss the role of the financial markets with respect to the current account by confronting theoretical approaches with the status quo of financial development and integration in the two regions. In Section 6, an econometric analysis identifies the major determinants of the current account positions in the European and Asian emerging market economies. Section 7 includes a summary and conclusion.

2. The convergence club concept

Standard economic theory predicts that, driven by differences in the marginal returns to capital, countries with a relatively low per capita income will catch up with richer ones. Globally, however, empirical evidence suggests increasing divergence of income levels over time.[8] This contradiction between theory and evidence has triggered the convergence club concept (Abramovitz 1986, Baumol 1986), among others[9]. It takes a historical perspective by noting two features of modern growth processes: (a) certain countries have led in terms of growth and development; (b) only a small group of countries have managed to converge with the leader over time.[10] Leaders and followers form specific convergence clubs with a core (leader) and a periphery (converging countries). Convergence is driven by spillovers from the core to the periphery as converging economies engage in similar lines of production and develop extensive trade and financial linkages with the core (Baumol 1986).[11]

[8] For an overview, see Pritchett (1997).

[9] Endogenous growth theory challenged the assumption of a smoothly falling marginal product of capital over time, by making technical progress endogenous (Arrow 1962, Romer 1986, Lucas 1988, Grossman and Helpman 1991). As a result, the level of technical progress is country-specific and the model does not predict convergence across countries. Standard theory responded by introducing the concept of conditional convergence, claiming that the steady state to which countries are converging is country-specific, as it depends on a list of macroeconomic, financial sector and institutional variables (Mankiw 1995, Sala-i-Martin 1997). Thus, the law of marginal returns to capital holds but does not necessarily imply convergence.

[10] As stressed by Quah (1996), this is a main difference with the concept of conditional convergence, which focuses on whether each country converges to its own steady state, different from that of other countries.

[11] By definition, this implies that countries mainly producing and exporting raw materials are not "converging", even though they might experience a rise in per capita income levels (Dowrick and DeLong 2003). The convergence club concept does not provide a coherent answer to why some countries have been able to join a convergence club while others have not (Blomstroem, Lipsey and

We apply the convergence club concept to emerging Europe and emerging Asia, as – following Eichengreen (2004) – the process of globalisation can be very much analysed in a core – periphery framework, with the industrial countries acting as the core and emerging markets acting as the periphery. However, several indicators suggest that the two emerging regions converge to two different cores.

In Europe emerging economies' convergence process has been largely shaped by European integration, i.e. the process of accession to the European Union. This is most obvious with regard to institutional integration,[12] but applies to economic integration as well. Trade and financial integration have mainly taken the form of integration with the euro area/EU15, and euro area/EU15 residents have been the most important foreign investors in the region. Moreover, when taking a monetary perspective, the countries in emerging Europe predominantly use the euro as the main anchor currency (ECB 2007).[13] Against this background we identify a European convergence club with the euro area as the core and emerging Europe as the periphery.

In institutional terms, the convergence process in emerging Asia has been very different, as there is no framework comparable to that of European integration in linking the periphery to the core. However, from an economic perspective, there are several indicators pointing to the United States as the core country to which emerging Asian economies' convergence is aimed. For example, the US dollar serves as the main anchor upon which they base exchange rate policy or to which they keep a fixed or quasi-fixed peg. Furthermore, all Asian countries – except for Indonesia – show strong trade integration with the United States. Exports to the United States in 2006 represented the largest share for any single country, significantly exceeding that of Japan or the euro area.[14] The same applies to the degree of financial integration, as the stock of consolidated foreign bank claims by US banks predominate in most of the Asian countries under review.[15] Thus, we identify a second convergence club with the United States as the core and emerging Asia as the periphery.

Zejan 1992, Galor 2007). According to Abramovitz (1986) "social capability", which depends – among others – on education, the organisation of firms, i.e. governance, openness etc., as well as macroeconomic and monetary conditions, determine whether low-income countries can exploit the potential for rapid growth given by their technological backwardness and join a convergence club. Thus, the variables are similar to the ones used by growth empirics to account for factors determining country-specific steady states.

[12] All countries in emerging Europe reviewed in our sample have either become Member States of the European Union or are candidate or potential candidate countries with the prospect of becoming an integral part of the EU, once they meet the established criteria (Council of the European Union, 2003).

[13] Taking a historical perspective, the role of the exchange rate regime in a process of financial integration between core and periphery is reviewed by Bordo and Flandreau (2003).

[14] See Direction of Trade Statistics, IMF.

[15] In China, Hong Kong, Indonesia and Thailand Japanese banks hold the largest claims on the respective countries. See Consolidated Banking Statistics, BIS.

The convergence club concept and the identification of two different convergence clubs with emerging European and emerging Asian countries constituting the respective peripheries broadens the analysis of financial development and financial integration in both regions by adding an additional, regional dimension. Current account patterns in both peripheries may be influenced not only by progress in domestic financial development and integration in global financial markets, but also by the depth and form of financial integration between core and periphery within the respective convergence club.

3. Real convergence and current account developments in central, eastern and south-eastern Europe and in emerging Asia – an overview

Reviewing the process of real convergence in both peripheries suggests that between 1994 and 2006, emerging Europe and emerging Asia witnessed similar dynamics of catching up *(see Charts 1-2)*[16]. On average, Asian countries experienced a slightly higher growth rate (5.6%) than the emerging European countries (4.1%), with China (9.7%) and Estonia (6.6%) being the fastest growing countries within the respective convergence clubs. In emerging Europe, GDP per capita rose by more than 12 percentage points compared with the euro area average in the period under review *(Charts 3-4)*.[17] By contrast, Asian countries improved their relative per capita income position[18] vis-à-vis the United States by only six percentage points on average, mainly reflecting strong population growth and the fact that Asia's core country grew faster than Europe's.[19] The convergence process was strongly influenced by the 1997-98 financial crisis. Thailand, Indonesia, the Philippines and Malaysia, i.e. four of the five countries that were hit hardest, rank last in terms of catching-up with US per capita income between 1994 and 2006.[20]

[16] For Bosnia and Herzegovina, the average applies to the period 1999-2006 to avoid a bias from the immediate post-war recovery, when annual growth rates were exceptionally strong. Data for Serbia are available only from 1999. Montenegro is not included in the analysis.

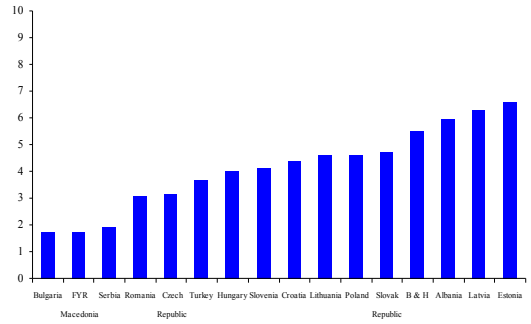
[17] In Europe, the improvement in living standards was strongest in the Baltic countries, whereas progress was slow (with relative GDP per capita increasing by less than 15%) in Bosnia and Herzegovina, Bulgaria, FYR Macedonia, Serbia and Turkey, reflecting political and economic crises, including wars, in particular in the first half of the review period. (The averages for Bosnia and Herzegovina and for Serbia are calculated from respectively 1999 and 2000 to 2006.)

[18] The GDP per capita is reported in purchasing-power-parity (PPP) adjusted terms.

[19] While all Asian countries increased their population between 1994 and 2006, 10 out of 16 CEE/SEE countries report a decline in population. Furthermore, it should be noted that in 1994 euro area GDP per capita was about USD 20,000 compared with around USD 26,000 in the US. Over the review period, euro area GDP per capita rose by 57%, while growth of US GDP per capita reached 65%.

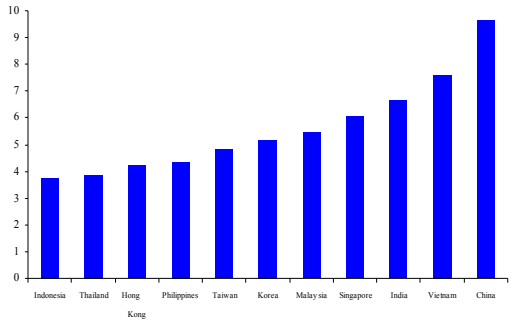
[20] However, the relative income position of Korea, although strongly affected by the crisis, increased by almost 30% in the review period.

Chart 1 Average real GDP growth in Europe, 1994-2006
(in percent)



Sources: IMF, authors' calculations.

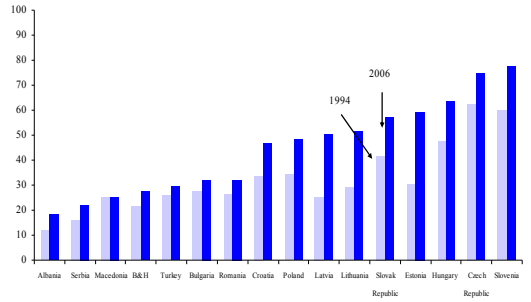
Chart 2 Average real GDP growth in Asia, 1994-2006
(in percent)



Sources: IMF, authors' calculations.

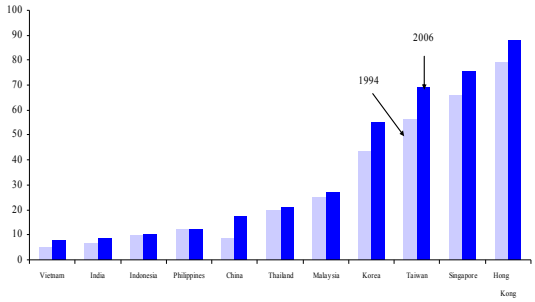
In 2006, the dispersion of per capita incomes varied from approximately 19% (Albania) to almost 77% (Slovenia) of the euro area average in emerging Europe, and from 8% (Vietnam) to about 88% (Hong Kong) of the US average in emerging Asia. Broadly speaking, the newly industrialised Asian countries may be compared to the central and eastern European countries, while the per capita income level in developing Asian countries is somewhat lower than in the poorest south-eastern European countries.

Chart 3 GDP per capita in Emerging Europe (PPP), 1994/2006
(in percent of euro area average)



Sources: IMF, authors' calculations.

Chart 4 GDP per capita in Emerging Asia (PPP), 1994/2006
(in percent of US average)



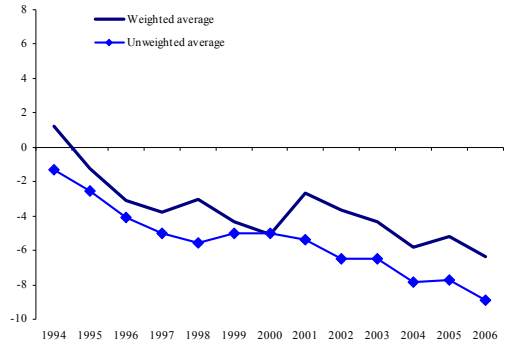
Sources: IMF, authors' calculations.

In Europe the convergence process has been accompanied by substantial current account deficits (*Chart 5*).[21] Between 1994 and 2006, only seven countries recorded one or two years with current account surpluses, either in the mid-1990s or as part of an adjustment process after a period of financial turbulence.[22]

[21] In general, smaller countries recorded higher current account imbalances, explaining the wedge between the weighted and non-weighted average of current account balances in Charts 5 and 6.

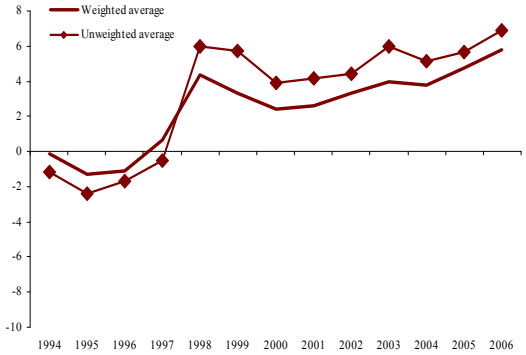
[22] Slovenia is the major exception. The country recorded a total of five years of current account surpluses and – with less than 1% of GDP – it has the lowest average current account deficit in emerging Europe. By contrast, Bosnia and Herzegovina, Serbia and Montenegro, the Baltic countries and Hungary had the highest current account deficits, on average. Turkey has seen three episodes of strong current account reversals linked to post-crisis adjustments over the review period. As a result, Turkey is the country with the second-lowest average deficit over the review period (-2.0% of GDP). However, the ratios of current account balance to GDP would be considerably lower when taking into

Chart 5 Current account balances in Emerging Europe, 1994-2006
(weighted/non-weighted averages, as percent of GDP)



Sources: IMF, authors' calculations.

Chart 6 Current account balances in Emerging Asia, 1994-2006
(weighted/non-weighted averages, as percent of GDP)



Sources: IMF, authors' calculations.

By contrast, Asian countries show, on average, a positive current account position in most of the years under consideration (*Chart 6*). The 1997 financial crisis marks a clear turning point, as five countries, Indonesia, Malaysia, Thailand, Hong Kong and Korea, saw a shift from deficits to sustained surpluses. China, Singapore and Taiwan recorded current account surpluses over the whole review period, while developments in the remaining countries have been more heterogeneous.[23]

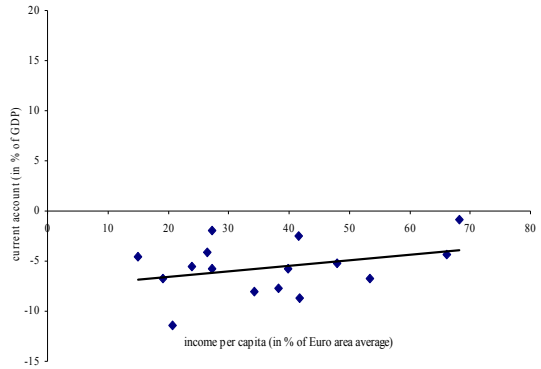
In both samples (*Charts 7 and 8)*, a higher per capita income[24] – relative to the core – has been associated with an improving current account position (correlation coefficient Europe: 0.3, Asia: 0.6), which is in line with the predictions of standard theory. However, there is a strong level effect which distinguishes the European from the Asian sample. In emerging Asia, even countries with a comparatively low per capita income have not borrowed abroad to raise present consumption based on the expectation that income will rise in future.

account the probable underestimation of both workers´ remittances and official GDP. Furthermore, statistical problems in the balance of payments – also mirrored by the large share of errors and omissions – indicate that the data have to be interpreted with caution.

[23] The current account balance of the Philippines switched signs three times, while Vietnam, after showing current account deficits of close to or even higher than 10% in the mid- to late 1990s, has also seen sub-periods of surpluses and smaller deficits. Finally, India's current account has been close to balance over the whole review period, fluctuating in a narrow range between -1.7 and +1.5% of GDP.

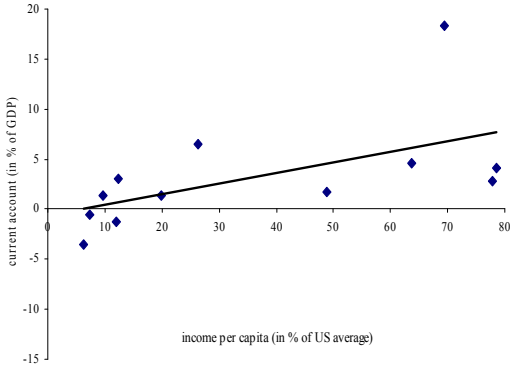
[24] If not explicitly mentioned differently, GDP per capita figures are in PPP terms.

Chart 7 Current account balances and relative income per capita in emerging Europe
(averages 1994-2006)



Sources: IMF, authors' calculations.

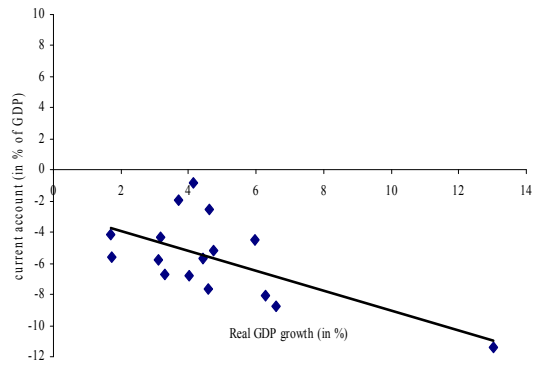
Chart 8 Current account balances and income per capita in emerging Asia
(averages 1994-2006)



Sources: IMF, authors' calculations.

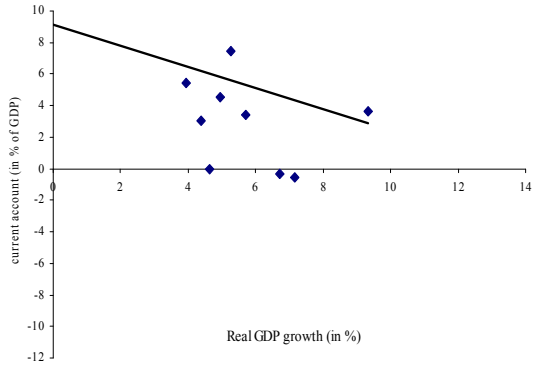
In both samples, a negative correlation (correlation coefficient Europe: -0.6, Asia: -0.2) between growth and the current account balance can be observed (*Charts 9 and 10)*. Thus, within the peripheries patterns are in line with the predictions of standard theory, suggesting a positive correlation between net capital inflows and growth (Prasad/Rajan/Subramanian, 2007). However, there is again a significant level effect between the two regions, as in emerging Asia even the fastest growing countries have not been characterised by significant current account deficits, but mainly by smaller surpluses.[25]

Chart 9 Current account balances and real GDP growth in emerging Europe
(averages values 1994-2006)



Sources: IMF, authors' calculations.

Chart 10 Current account balances and real GDP growth in emerging Asia
(averages 1999-2006)



Sources: IMF, authors' calculations.

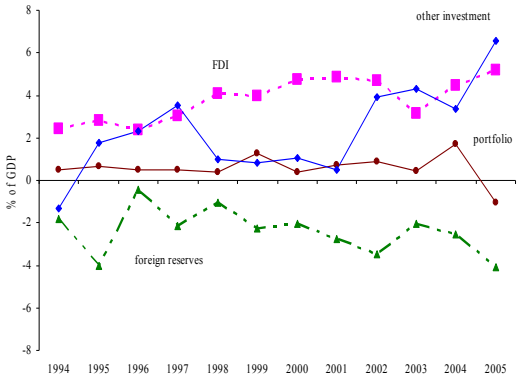
A closer look at the sub-balances of the current account reveals that in emerging Europe trade balances have been negative in all countries under consideration. Moreover, large transfers in

[25] On a global scale, Gourinchas/Jeanne (2007) found that capital flows have been more pronounced to emerging market countries with - on average - lower rates of growth. Like the Lucas paradox, this contradicts the predictions of standard economic theory, which is why they refer to the empirical evidence as the *allocation puzzle*.

the form of remittances (Albania, Bosnia and Herzegovina and FYR Macedonia) or a strong service balance, also reflecting substantial tourism revenues (Croatia, Turkey), reduced current account compared with trade deficits.[26] In emerging Asia, a more heterogeneous picture emerges. While six countries have been recording – on average – trade balance surpluses, trade balances in Hong Kong, India, Philippines and Vietnam have been – on average – negative. In all trade surplus countries except Singapore, pronounced deficits in the service or income balances – mainly due to retained earnings of foreign-owned firms – can be observed. By contrast, in all countries with a trade deficit, the current account deficit was considerably smaller.[27]

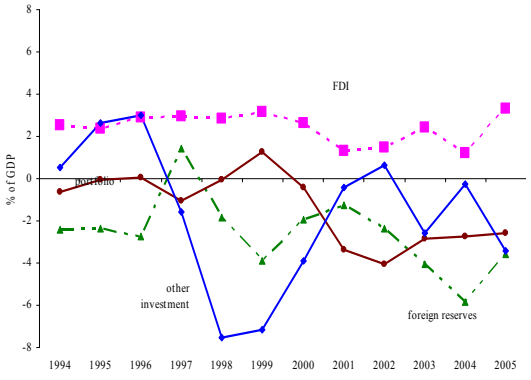
Current account developments are reflected in the financial account balance (*Charts 11* and *12*). In emerging Europe, net non-weighted average FDI inflows increased almost continuously from 2.5% of GDP in 1994 to 5.2% of GDP in 2005. There has been a steep increase in other investment, mainly in the form of loans, since the early 2000s, amounting to 6.6% of GDP at the end of 2005. Portfolio inflows have been small and rather stable. In total, net private capital inflows surpassed the level of current account deficits, which is reflected in substantial reserve accumulation by the monetary authorities.

Chart 11 Main counterparts of the current account in emerging Europe, 1994-2005
(non-weighted averages, in percent of GDP)



Sources: IMF, authors' calculations.

Chart 12 Main counterparts of the current account in emerging Asia, 1994-2005
(non-weighted averages, in percent of GDP)



Sources: IMF, authors' calculations.

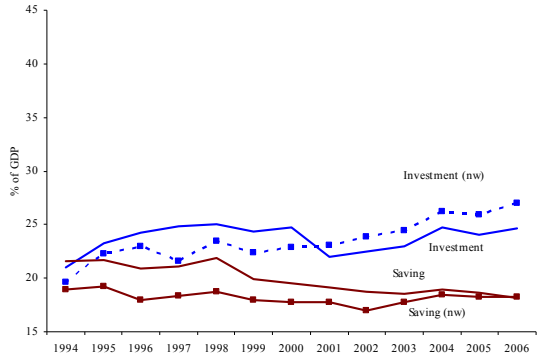
[26] In Hungary and the Czech Republic a negative income balance has contributed significantly to the current account deficit. Furthermore, in most European countries the income balance has been worsening over time, indicating that non-distributed earnings of foreign-owned firms might have played an increasing role in these countries.

[27] Hong Kong even recorded a trade deficit and a current account surplus due to a strong service balance. In the other deficit countries, transfers in the form of remittances have played a major role, in particular in the case of the Philippines, the only country in emerging Asia showing a pronounced trade deficit (on average it corresponds to approximately 9% of GDP).

In emerging Asia, non-weighted average net FDI inflows, expressed as a percentage of non-weighted average GDP, have been relatively stable, fluctuating around the 2% mark.[28] By contrast, other investment flows have been highly volatile. While net inflows had accelerated before the Asian crisis, there were substantial outflows in the immediate post-crisis period. Net portfolio flows, which had been marginal in the mid to late 1990s, have recorded outflows of more than 2% of GDP since 2000. Following a substantial loss of reserves in 1997, rapid reserve accumulation has been a feature in all countries exposed to the crisis. More recently, however, the pronounced foreign reserve build-up has been largely due to China.

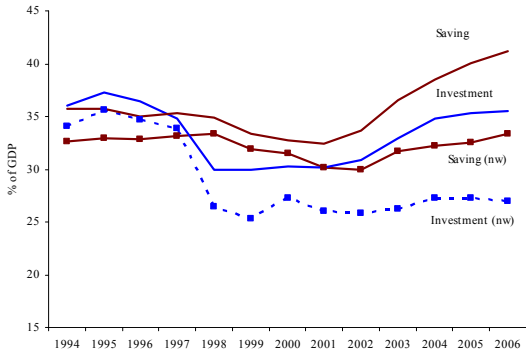
In emerging Europe, current account deficits have mainly been a reflection of rising investment (*Chart 13*), while in emerging Asia (*Chart 14*), the current account surpluses that emerged after the financial crisis were almost entirely due to a decline in investment (*investment drought*). The strong rise in the weighted savings rate in Asia is almost exclusively due to developments in China, where public sector saving in particular has been continuously increasing over time (*public savings glut*).[29]

Chart 13 Saving and Investment rates in Emerging Europe, 1994-2006
weighted and non-weighted averages (nw)



Sources: IMF, authors' calculations.

Chart 14 Saving and Investment rates in Emerging Asia, 1994-2006
weighted and non-weighted averages (nw)



Sources: IMF, authors' calculations.

Similarities and differences with respect to real convergence and current account developments in emerging Europe and Asia can be summarised as follows:

- Both convergence clubs have recorded rapid growth accompanied by strong net FDI inflows and the accumulation of foreign exchange reserves. Since 2001, emerging Europe has experienced strong net inflows of other investments, while emerging Asia has seen net outflows of portfolio investment.

[28] For a detailed description of FDI in Asia before and after the crisis, see Urata et al. (2006).
[29] In India and Vietnam private saving rates have been continuously increasing as well. However, as these countries were not really impaired by the crisis, investment also rose, implying only moderate external imbalances.

- Convergence in terms of relative GDP per capita[30] has been slower in emerging Asia than in emerging Europe due to stronger population growth in Asian countries and because US per capita growth has been slightly higher than euro area growth.
- The convergence process in emerging Europe has been accompanied by large current account deficits, whereas current account surpluses have characterised the catching-up process in emerging Asia. However, developments in the Asian economies have been somewhat more heterogeneous than in Europe, mainly reflecting (1) the emerging Asian countries' different exposure to the 1997 financial crisis, and (2) specific developments in China, in particular with regard to domestic savings and investment.
- In emerging Europe, convergence and the associated current account deficits have been mainly driven by a rise in investment and only to a lesser extent by a decline in savings. In emerging Asia, emerging current account surpluses have mainly reflected a drop in the investment rate, while savings rates have remained largely unchanged, except for China.

In the following, we evaluate whether the characteristics of the financial markets might have an important bearing on the development of the current account and to what extent they can explain divergent external balances in emerging Europe and Asia. This is done, first, by reviewing the literature, second, by pointing out the main characteristics of financial sector developments in both regions and third, by running the empirical estimations.

4. Current account developments and the financial sector – a review of the literature

In recent years, a broad consensus has emerged in the literature that underdeveloped and weak financial markets represent one factor explaining why many emerging markets have not recorded substantial current account deficits as predicted by standard theory.[31] Underdeveloped and weak domestic financial markets hamper emerging markets' ability to transform domestic savings into domestic investment and to engage in substantial foreign borrowing. Thus, emerging markets with underdeveloped financial markets will – in principle – invest less than predicted by standard theory and hence will show a tendency towards current account surpluses. [32]

[30] It is expressed as a percentage of GDP per capita in the US/euro area.

[31] By contrast, most of the traditional literature neglected financial sector development as a potential determinant of the current account balance. See e.g. Gosh and Ostry (1992), Debelle and Faruqee (1996), Calderón et al. (2001), Felipe et al. (2006).

[32] Theoretically, however, the impact on the current account is ambiguous, as financial sector development may foster domestic savings as well as domestic investment. For example, Edwards (1995), Chinn/Prasad (2003), Chinn/Ito (2005) and Herrmann/Jochem (2005) suggest that an efficient

Financial development is difficult to quantify. In the literature a low degree of financial development has been associated with

- a low level of financial intermediation and financial sector quality,
- a strong accumulation of foreign exchange reserves, serving as a signalling and shock-absorbing device substituting for highly developed financial markets, and
- a limited ability to engage in international financial integration.

Concretely, three approaches linking underdeveloped financial markets with current account developments in emerging markets can be distinguished.

1. Financial intermediation and financial sector quality.[33] Underdeveloped financial sectors are seen as an impediment to emerging economies converting domestic savings and capital inflows into high-quality assets and thus investment, creating a shortage of assets (Cooper, 2005; Caballero, 2006). As a result, financial capital flows *uphill*, i.e. from emerging to mature markets where funds can be invested in a stronger institutional setting offering higher returns.[34] This might lead to current account surpluses in emerging economies despite their low capital-labour-ratios. As financial development would induce a rise in domestic investment, a higher degree of financial intermediation and financial sector quality should be associated with a deterioration in the current account (Clarida, 2005; Mendoza et al., 2006).[35]

2. Built-up of foreign exchange reserves. The *precautionary savings view* (Aizenman and Lee, 2005; Aizenman, 2007) identifies foreign exchange reserve accumulation by emerging market economies as a substitute for developed financial markets in absorbing terms of trade shocks.[36] Episodes of financial crisis reveal financial sector weaknesses in emerging

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financial sector is associated with an increase in domestic savings, which would lead to an improvement of the current account.

[33] This view has been pioneered by McKinnon (1973) and Shaw (1973). The focus on financial sector quality echoes a broader view taken in the literature according to which the quality of institutions in general might lead to a divergence of marginal productivity of capital in mature versus emerging market economies irrespective of the capital-labour-ratios, see e.g. Lucas (1990), Caselli and Feyrer (2007), Acemoglu et al. (2005). According to Alfaro et al. (2005) and Mishkin (2005), the quality of domestic institutions is an important determinant of capital flows. In a similar vein, Stulz (2005) suggests that poor corporate governance and high political risk prevent the providers of capital from fully accruing the investment returns.

[34] This idea is similar to the approach of Ju/Wei (2006/2007), assuming that countries with a low quality of financial institutions will participate in international financial integration by recording FDI inflows while at the same time realising outflows of other financial capital. Thus, underdeveloped financial sectors are by-passed by economic agents through integrating with mature market economies.

[35] Caballero, Farhi and Gourinchas (2006) conclude that more pronounced homogeneity of the regions´ capacity to generate financial assets would mitigate global current account imbalances.

[36] According to this view, challenges associated with financial integration between mature and emerging economies are not the main motive for emerging market economies to engage in a strategy of foreign reserve accumulation and current account surpluses, even though greater integration might increase the responsiveness of financial flows to terms of trade shocks (Aizenman and Riera-Crichton, 2006, p. 8). Aizenman (2007) suggests that sizeable foreign exchange reserves help by providing self insurance against sudden stops.

economies and reinforce the need to build up foreign reserves.[37] The *new mercantilist view* (Dooley/Folkerts-Landau/Garber, 2003, 2004, 2007) claims that financial markets in emerging economies are unable to integrate with the global financial system because they lack credibility. To gain credibility, emerging markets have to accumulate foreign assets, mainly foreign exchange reserves. These assets, placed at the core of the convergence club, serve as collateral for private capital inflows from mature markets, mainly in the form of FDI.[38]

3. *Financial integration*. Underdeveloped financial sectors are regarded as a major obstacle to the financial sector's international integration, which hampers borrowing abroad and thus weakens the link between income convergence and the current account. Vice versa, a high degree of financial integration, like that achieved in Europe for example (Blanchard/Giavazzi, 2002 and Abiad/Leigh/Mody, 2007), allows catching-up economies to run sizeable current account deficits.[39]

The literature suggests that a lack of financial development is a key obstacle to emerging markets engaging in consumption-smoothing activities, thereby affecting the current account. Before empirically testing the various propositions associated with the different dimensions of financial sector development for the two peripheries under review, we point out the main characteristics of financial sector developments in both regions.

5. Financial development: emerging Europe versus emerging Asia

Standard indicators of financial sector quality, i.e. the intermediation (credit to the private sector relative to GDP, *Chart 15)* and monetisation ratios (M2 to GDP, *Chart 16)*,[40] suggest that financial sectors in emerging Asia are more advanced than in emerging Europe. On average, private sector credit – as a percentage of GDP – and the M2 to GDP ratio are approximately twice as high in emerging Asia as in the European sample. Over the review

[37] See Gruber and Kamin (2005), Eichengreen (2006), Aizenman and Lee (2005), Bernanke (2005), Aizenman and Marion (2003), Choi/Sharma/Stromqvist (2006) and Durda/Mendoza/Terrones (2007). Weaknesses in financial sector quality have been identified as a major cause of financial crises in emerging market economies, most prominently in the case of the Asian financial crisis (McKinnon and Pill, 1996; Dooley, 1997; Radelet and Sachs, 2000; Llewellyn, 2002).

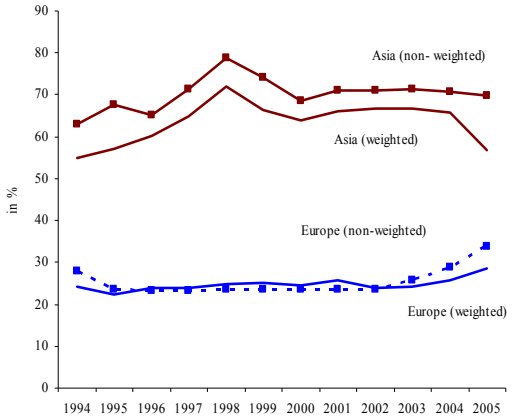
[38] The collateral character of official foreign exchange reserves stems from the fact that they could be seized by the authorities in the core country in case of misbehaviour by authorities in the periphery, for example in the form of re-nationalisation of foreign investment. The need to pledge collateral will vanish when emerging market economies have matured, i.e. when they have credibly adopted political and economic standards similar to those prevailing in the core country. Post-war Europe and Japan provide the most prominent example for such a process of gaining credibility.

[39] However, financial integration may also support behaviour in line with the Lucas paradox, if financial integration is a precondition for the ability of emerging market economies to invest in mature financial markets (Greenspan, 2003). Thus, from a theoretical point of view, the impact of deeper financial integration on the current account is, again, found to be ambiguous.

[40] See e.g. McKinnon (1973) and Shaw (1973)

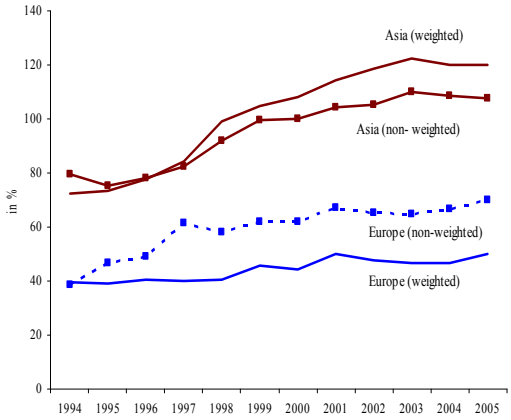
period, the monetisation ratio increased in both regions, more strongly in emerging Asia after the financial crisis. By contrast, the intermediation ratio dropped by about ten percentage points in Asia after the financial crisis and then showed a high degree of stability, while private sector credit has been increasing rapidly in emerging Europe after 2002.[41]

Chart 15 Private credit in emerging Europe/Asia, 1994-2005
(weighted/non-weighted averages across countries, in % of GDP)



Sources: IMF, authors' calculations.

Chart 16 M2 in emerging Europe/Asia, 1994-2005
(weighted/non-weighted averages across countries, in % of GDP)



Sources: IMF, authors' calculations.

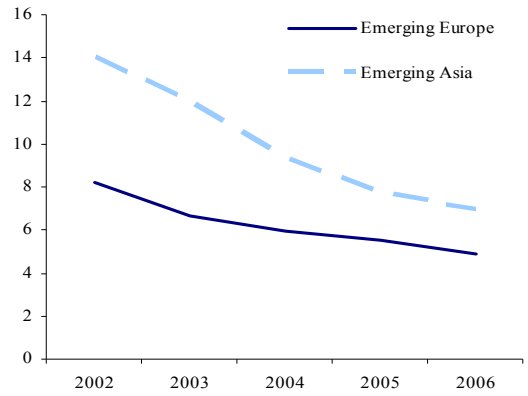
While capturing financial sector quality by quantitative indicators is inherently difficult,[42] the available evidence on non-performing loans and lending-deposit spreads, loan quality and banking sector efficiency suggests an improvement in both indicators over time in both regions (*Charts 17 and 18*).[43]

[41] Standard indicators of financial development might fail to capture the borrowing constraints businesses and households effectively face (Eichengreen, 2006; IMF, 2006a), as they might not reveal domestic economic agents' true access to financial services. However, there is only limited evidence on financial sector outreach in emerging market countries. An exception is Beck et. al (2005), providing information on outreach indicators across countries (branch and ATM penetration, loan and deposit accounts per capita, loan and deposit income ratios). The results – taking simple averages for the European and the Asian countries in the sample – suggest that the two regions have reached a fairly similar degree of financial sector outreach.

[42] For example, while deteriorating loan quality has been at the core of most systemic banking crises, the ratio of non-performing loans to total loans is a lagging indicator for lending quality, in particular in times of rapid credit growth. The use of the lending – deposit spread as an indicator of financial sector quality reflects the argument that inefficient and loss-making banks, i.e. poorly governed financial institutions, need larger spreads to ensure profitability. However, large spreads may also indicate a low degree of competition or inflation (McKinnon, 1992).

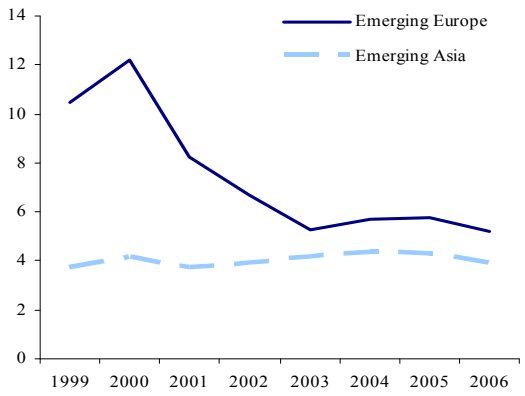
[43] It should be noted that in emerging Europe, due to a high level of asset substitution on the banks' asset as well as liability side (ECB, 2007), the spread of local currency interest rates (depicted in Chart 23) may be less important than the spread on foreign currency loans and deposits.

Chart 17 Non-performing loans to total loans in emerging Europe/ Asia
(in percent)



Sources: IMF, authors' calculations.

Chart 18 Spread lending/deposit rate in emerging Europe and Asia



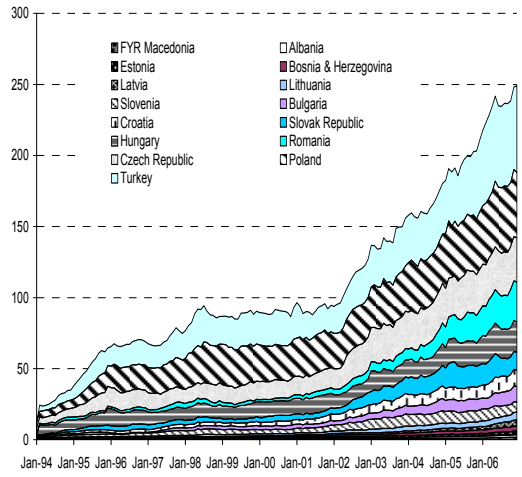
Sources: IMF, authors' calculations.
Note: Excluding Bosnia and Herzegovina (2001), Vietnam (2004), Lithuania (2005, 2006), FYR of Macedonia and Poland (2006).

A low level of financial sector quality and poor governance of financial institutions are most clearly displayed in times of financial sector crisis (Caprio and Klingebiel, 1996). Countries in both peripheries have been facing financial crises, in particular in the first part of the review period, with the Asian financial crisis being the most pronounced.[44]

According to the new mercantilist/precautionary savings view, emerging market economies accumulate foreign exchange reserves to compensate for underdeveloped financial markets. Thus, the size of foreign exchange reserves may serve as an indicator of domestic financial development.[45] Emerging Asia has been experiencing a substantial rise in foreign exchange reserves since the 1997 financial crisis (*Chart 20*), most notably in China. A similar tendency, albeit on a significantly smaller scale in absolute US dollar terms, can also be observed in most emerging European countries (*Chart 19*).

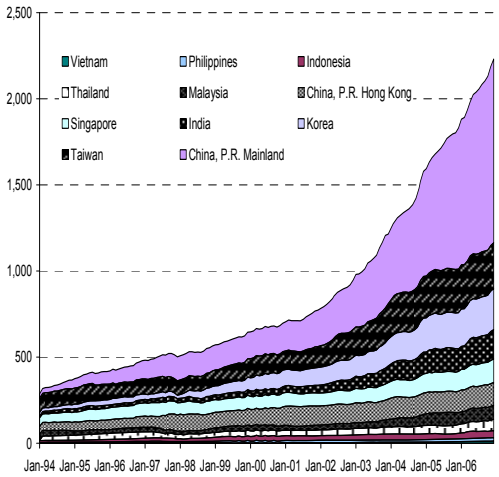
[44] For an overview of financial crisis episodes in the emerging Europe sample, see Àrvai and Vincze (2002) and Tang et al. (2000).
[45] This holds under the assumption that countries actually aim to engage in international financial intermediation. Indeed, a low and stable level of reserves may indicate two different outcomes: a) a well-developed financial sector perfectly integrated in the international financial system, or b) an underdeveloped financial sector of a country that does not aim to participate in international financial integration. Clearly, the countries under review are perceived as countries that aim at integrating into the international financial system.

Chart 19 Foreign exchange reserves in emerging Europe
(in USD billion)



Source: IMF.

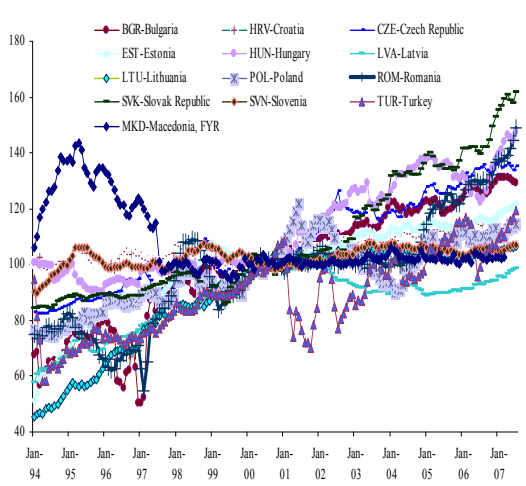
Chart 20 Foreign exchange reserves in emerging Asia
(in USD billion)



Source: IMF.

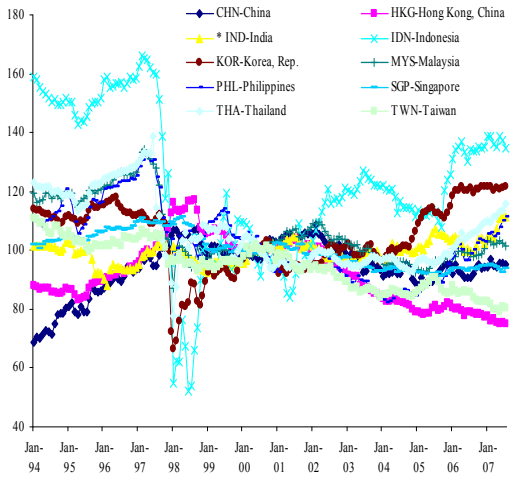
Foreign exchange interventions and the associated build-up of foreign exchange reserves may also reflect countries' preferences for stable real effective exchange rates, either in the framework of an explicit export-led growth strategy or as a means of compensating for underdeveloped financial markets. *Charts 21* and *22* depict developments of real effective exchange rates in the peripheries of both convergence clubs. In emerging Europe, developments have been characterised – in principle – by a trend appreciation of the real effective exchange rate. In emerging Asia the impact of the financial crisis is clearly visible, with significant appreciations after 1997 being limited to Indonesia and Korea.

Chart 21 Real effective exchange rates in emerging Europe
(2000 = 100)



Source: IMF, authors' calculations.

Chart 22 Real effective exchange rates in emerging Asia
(2000 = 100)



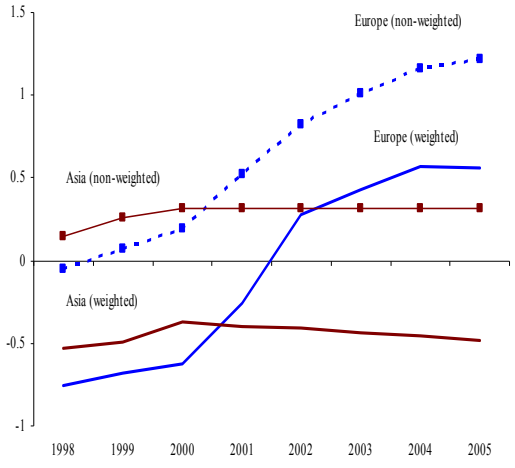
Source: IMF, authors' calculations.

Financial development and foreign exchange reserve accumulation in the regions under review have been taking place in different environments with respect to the openness of their financial sectors (*Chart 23*).[46] For the period 1998-2005 the Chinn/Ito index,[47] in which higher values indicate a greater degree of financial openness, depicts a continuous liberalisation in emerging Europe, including an acceleration since 2000. This reflects the process of capital account liberalisation, a key criterion for accession to the European Union.[48] By contrast, the index values for emerging Asia show a high degree of stability. Thus, at the end of 2005, emerging Europe showed a higher degree of financial openness than emerging Asia.[49]

Turning to the degree of actual financial integration, as measured by the sum of outstanding foreign assets and liabilities divided by GDP, emerging Europe has been engaged in a steady process of financial integration (*Chart 24*).[50] Thus, actual financial integration has followed greater openness with respect to regulatory restrictions. In terms of levels, however, on average, the sum of foreign assets and liabilities held by emerging European countries – expressed as a percentage of GDP – is still lower than in emerging Asia.[51]

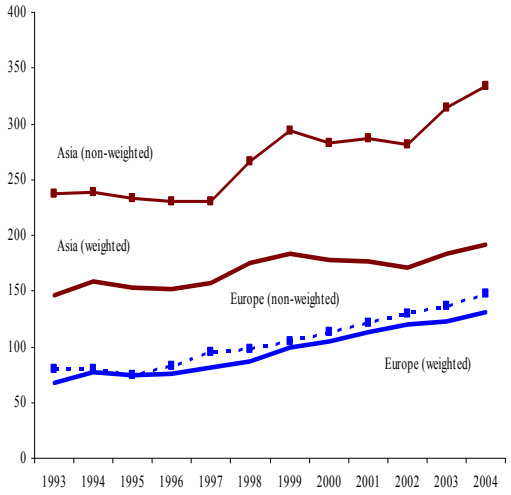
[46] See Kose et al. (2006) and IMF (2007b) for a review of financial globalisation and liberalisation.
[47] See Chinn/Ito (2007). The index is a numeric interpretation of the IMF's assessments laid down in the *Annual Report on Exchange Arrangements and Exchange restrictions* and includes the four major categories of restrictions on external accounts, namely the presence of multiple exchange rates, restrictions on current account transactions, restrictions on capital account transactions and requirements for the surrender of export proceeds.
[48] Capital account liberalisation is part of the *acquis communautaire*, the body of legislation of the European Communities and Union, which candidate countries must accept before they can join the EU.
[49] The status quo of financial openness and integration in individual countries of both regions is summarised in the Annex.
[50] We focus on quantity-based measures of actual financial integration, as price-based indicators are more vulnerable to bias from common factors or and/or similarities in fundamentals. See also Adam et al. (2002) and Baltzer et al. (2007).
[51] Thus, the evidence provided by Abiad/Leigh/Mody (2007) suggesting an extraordinary degree of financial integration in Europe is largely driven by cross-border asset accumulation in the core. According to this approach, Europe is financially much more integrated than Asia, as the sum of European economies' foreign assets and liabilities, expressed as a percentage of GDP (weighted average), is almost twice as high at the end of the current observation period as in emerging Asia.

Chart 23 Chinn-Ito-Index in emerging Europe/Asia
(weighted/non-weighted averages across countries, 1998-2005)



Source: Chinn/Ito (2005)

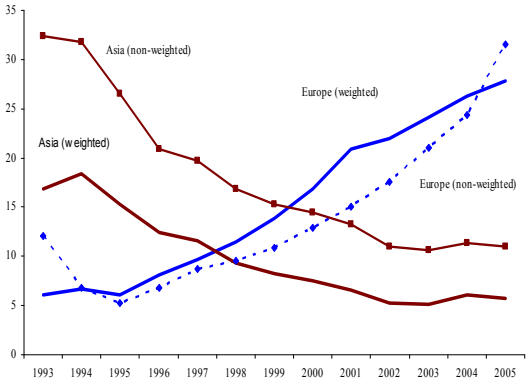
Chart 24 Sum of foreign assets and liabilities in emerging Europe/Asia
(weighted/non-weighted average across countries, 1993-2004, in % of GDP)



Source: Lane and Milesi-Ferretti (2006)

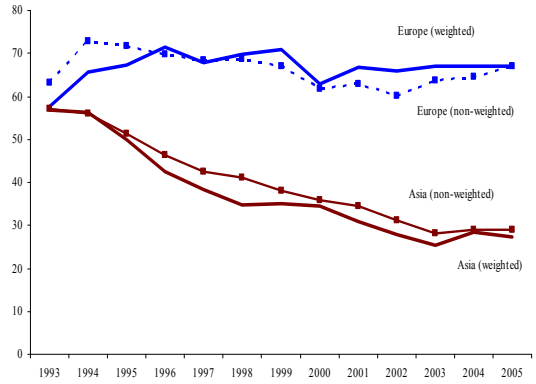
Within the convergence clubs, financial integration has been much higher in Europe than in Asia according to the benchmark of consolidated foreign claims of BIS reporting banks in the euro area and United States on the respective periphery regions. These claims, expressed as a percentage of the respective region's (weighted/unweighted) GDP, have been increasing continuously over the review period in emerging Europe, but have trended downward in emerging Asia (*Chart 25*).

Chart 25 Consolidated euro area/US bank claims in emerging Europe/Asia, 1993-2005
(weighted/non-weighted average, in % of GDP)



Sources: BIS, IMF and authors' calculations.

Chart 26 Consolidated euro area/US bank claims in emerging Europe/Asia, 1993-2005
(weighted/non-weighted average, in % of total bank claims)

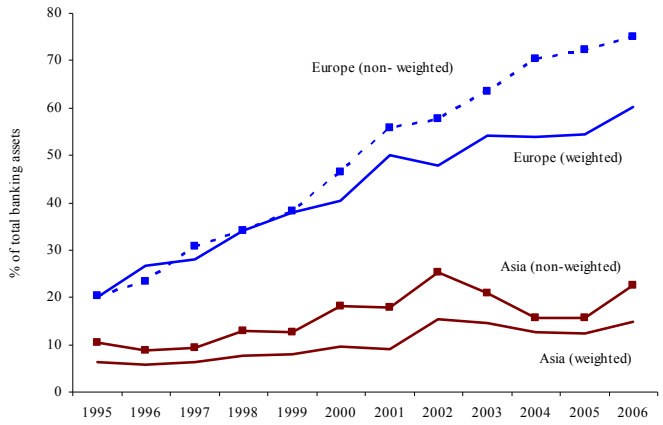


Sources: BIS, IMF and authors' calculations.

In 2005, the weighted average of BIS reporting euro area banks' consolidated claims on emerging Europe accounted for approximately 28% of the region's GDP, while the respective figure for BIS reporting US banks' consolidated claims on emerging Asia added up to only 6% of the region's GDP. Moreover, there is evidence suggesting that intra-club financial integration has been much more prominent as a means of achieving overall financial

integration in the case of emerging Europe. Euro area banks account for the bulk of total consolidated claims on emerging Europe, while US banks' share of total claims on emerging Asia has been declining for most of the observation period (*Chart 26*).

Chart 27 Foreign bank assets in emerging Europe/Asia, 1995-2006
(weighted/non-weighted averages across countries, in % of total banking assets)



Sources: World Bank, EBRD and authors' calculations.

Intra-club financial integration in Europe has also advanced in the form of foreign-owned banks', i.e. euro area banks' massive entry into emerging European banking sectors.[52] The share of banking sector assets held by foreign-owned banks increased steadily in emerging Europe *(Chart 27)* from 1995 to 2006, as foreign banks became the driving force of financial development in emerging Europe. They accounted for roughly 75% of total banking assets at the end of 2006 (non-weighted terms). By contrast, financial development in emerging Asia continues to be largely based on domestic institutions.

The review of the state of financial development in emerging Europe and emerging Asia and current trends can be summarised as follows:

- Standard indicators of financial sector intermediation do not allow for a clear ranking between emerging Europe and emerging Asia. Banking sectors are more developed in emerging Asia, even though private credit growth has been more rapid in emerging Europe in recent years. Countries in both regions experienced major financial crises in the review period, followed by improvements in lending quality and banking sector efficiency.
- By contrast, there is indirect evidence suggesting higher financial sector quality in emerging Europe than in emerging Asia. This is because emerging Europe has seen sizeable inflows not only of FDI, but also of other financial capital. Furthermore,

reserve accumulation has been more pronounced in emerging Asia than in emerging Europe, coupled with more stable real effective exchange rates.

- Emerging Asia is more deeply integrated in international financial markets than emerging Europe. By contrast, within the convergence clubs, financial integration with the core is much more pronounced in emerging Europe than in emerging Asia. Moreover, given the dominance of euro area banks in emerging Europe, this intra-club integration has a strong institutional underpinning.

In the following section, we test empirically whether the various indicators of financial development and financial integration are significant in explaining the strikingly different current account developments in emerging Europe and Asia.

6. Current account balances and the financial sector – an empirical investigation

6.1. Model specification

We test direction and significance of financial development for current account developments in the emerging regions under review by estimating an inter-temporal model which defines the current account balance as the difference between domestic saving and investment. Saving as well as investment ratios are replaced by a function of different variables.[53] The estimated equation follows a reduced-form approach similar to those used by Chinn/Prasad (2000), Chinn/Ito (2005/2007) and Abiad/Leigh/Mody (2007) to examine the determinants of the current account balances:

$$(1) \qquad \left(\frac{CA}{GDP}\right)_{it} = \alpha_i + \alpha_x X_{it} + \varepsilon_{it}$$

The dependent variable is the current account balance in percent of GDP. The vector of explanatory variables X_{it} includes basic macroeconomic determinants of saving and investment, namely the per capita *INCOME* (in PPP terms) relative to the reference country [54] and the *DEPENDENCY* ratio. [55] We expect the relationship between the change in the relative per capita income and the current account to be negative, and a higher dependency ratio to be

[52] See also ECB (2006, 2007)

[53] Saving and investment, as well as their main determinants, are usually correlated to some extent. Thus, some of the selected variables may affect both the saving and the investment rate.

[54] The euro area serves as a reference for the relative per capita income in the European economies and the US per capita income is the benchmark for the Asian emerging markets.

[55] In addition, we tested for the significance of other macroeconomic variables, following for example Chinn/Prasad (2003) and Chinn/Ito (2005/2007), including the government budget balance, the net external position, a trade openness indicator (ratio of exports and imports to GDP), as well as the terms of trade. However, they turned out to be insignificant and, thus, were excluded from the analysis.

associated with a higher current account deficit, indicating that a higher ratio of non-working to working population reduces the saving rate. In addition, we test for the significance of the overall level of gross *CAPITAL* inflows (as a percentage of GDP) and the impact of flows taking the form of foreign direct investment (as a percentage of GDP), *FDIGDP*. Both variables[56] are expected to carry a negative sign, as higher gross inflows are associated with lower interest rates and hence higher investment, while FDI inflows have been found to boost domestic investment more strongly than other capital flows (Bosworth and Collins, 1999; Mody and Murshid, 2002; Mileva, 2008).[57]

The focus of our empirical investigation is on testing for the impact of financial development on the current account by including several financial variables representing different dimensions of financial development:

The ratio of private *CREDIT* to GDP, *M2* in relation to *GDP* and a banking *CRISIS* indicator according to Caprio/Klingebiel (2003)[58] are variables directly capturing quantity and quality of financial intermediation in emerging Asia and emerging Europe. A higher degree of financial intermediation and better domestic financial sector quality (less crisis-prone) should be associated with higher current account deficits (lower surpluses), as the financial sector is assumed to take a more active and facilitating role in fostering domestic investment.

The stock of foreign *RESERVES* in percent of GDP is used as a proxy for the build-up of precautionary savings/collateral, indicating substantial financial sector weaknesses. Thus, we expect the variable to have a positive coefficient. As reserve accumulation is also seen as a policy tool for dealing with terms of trade shocks impinging on the real effective exchange rate or pursuing an export-led growth strategy, we also test for the impact of the real effective *EXCHANGE* rate (log), with real appreciation leading to a worsening of the current account.

We also control for the influence of financial integration, expecting a negative coefficient, as a higher degree of integration facilitates borrowing abroad and thus strengthens a country's ability to perform consumption-smoothing activities. Expanding the analysis by Abiad/Leigh/Mody (2007) and Blanchard/Giavazzi (2002), we test for the relevance of four aspects of financial integration:

- the regulatory state of financial openness as measured by the *CHINN_ITO* Index,

[56] We take the lagged values of both variables, as we are interested in the long-term production effects on investment which might go beyond the one-time effects in the context of the financial transaction.
[57] Thus, the net impact of strong FDI inflows on the current account is likely to be negative, even though FDI inflows have also been found to have a positive effect on domestic saving.
[58] The variable is important for taking into account the impact of the Asian financial crisis in 1997/1998. Edwards (2001) argues that current account dynamics surrounding crisis years might show an anomalous behaviour. As Gruber/Kamin (2005), we only take account of *systemic* financial crises. The dummy variable is one when the country suffers a crisis and zero otherwise.

- the state of *OVERALL INTEGRATION* in the international financial system, with the sum of foreign assets and liabilities/GDP serving as a proxy (see Lane/Milesi-Ferretti, 2006),
- the degree of *INTRA*-convergence club financial *INTEGRATION*, proxied by the consolidated foreign bank claims of US/euro area BIS reporting banks on the respective periphery countries in emerging Asia and emerging Europe (expressed as a percentage of the recipient country's GDP), and
- the share of *FOREIGN*-owned *BANKING* assets (in percent of total banking sector assets in the periphery countries), measuring the degree of financial integration with regard to financial institutions. Given that most of the foreign banks entering emerging European countries have been banks from the euro area, we interpret this variable as an additional indicator for financial integration *within* the respective convergence clubs.

We also expect that financial integration affects the current account differently in different stages of economic development. Thus, all variables measuring the degree of financial integration are interacted with the per capita income variable.

Finally, ε_{it} represents the disturbance term of the estimation. The database covers 27 emerging markets in Europe and Asia, namely the 16 countries in central, eastern and south-eastern Europe and 11 developing and newly industrialised Asian economies.[59] Due to the transition in emerging Europe, the period of analysis is restricted to 1994-2006.[60] Thus, we take annual data, as the short observation period does not allow testing with a panel that contains non-overlapping 5-year period averages of the data for each country, as done in Chinn/Prasad (2000), Gruber/Kamin (2005) and Abiad/Leigh/Mody (2007).[61]

Our approach raises the issue of *endogeneity*.[62] Capital flows may be largely endogenous, i.e. a consequence of current account developments, rather than an exogenous variable. For example, a high degree of financial integration might be a reflection of strong demand for financing in the countries under review rather than an exogenous determinant of savings and investment, and thus current account developments in the respective country. There is no unanimous answer to this question in the literature (see e.g. Fry et al., 1995). However, as it is

[59] For a detailed description of the countries under review and the estimated variables, see the Annex.
[60] Transition from plan to market started in 1989. However, its initial impact had been so strong that data before 1994 may be significantly biased by a transition effect.
[61] Chinn/Prasad (2003) examined the robustness of the medium-term results at an annual frequency. They found that while, in general, estimates at an annual frequency are less precise, most coefficients have the same sign and often similar magnitudes.
[62] In addition, it might be argued that a substantial part of the equation is based on a simple balance of payment identity, as several of the explanatory variables are linked to the financial account. However,

assumed that credit markets in emerging economies are constraint by supply factors due to underdeveloped financial sectors and inefficient financial institutions (contrasting with more mature financial markets, where credit can be assumed to be mainly demand driven), it is consistent to treat variables depicting characteristics of financial markets and financial integration as exogenous determinants of domestic saving and investment decisions. Furthermore, the variables used in the estimation can be treated as exogenous, as – with the exception of FDIGDP – they do not have a net flow dimension, but rather depict either stock variables or gross flows. Moreover, the flow variables (CAPITAL and FDIGDP) are lagged. Finally, we take account of a possible endogeneity in a technical sense by referring to an IV-estimator (see Section 6.3.).

6.2. Estimation results

Two models are estimated using a Feasible Generalized Least Squares (FGLS) estimation with fixed effects, AR-terms and panel-corrected standard errors taking into account a heteroskedastic error structure as well as a correlation between countries: (1) a basic model capturing the impact of the macroeconomic variables as well as the overall level of capital flows and FDI, respectively, and (2) a financial development model that takes into account the various variables of financial development introduced in Section 6.1.[63] The FGLS estimation results are presented in *Table 1*. [64]

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among these variables only the FDIGDP variable, lagged by one year, properly accounts for a financial account sub-balance. As a result, there is no risk of estimating a balance of payment identity.

[63] Thus, we follow Beck and Katz (1995, 2004) and Edwards (2001) and use a static model, whereas a dynamic version is part of the robustness test (see Section 6.3).

[64] The panel unit root tests of Levin/Lin/Chu (2002), Breitung (2000), Im/Pesaran/Shin (2003) as well as an ADF test based on Maddala/Wu (1999) were applied. These tests confirmed that the left-hand side variable and most other variables were stationary. The non-stationary variables (INCOME, CREDIT, CHINN_ITO) were differentiated. A time trend is included in the FGLS estimations in order to control for the trend-stationary variables (M2GDP, CRISIS, OVERALL INTEGRATION). The results are robust with respect to different models and different specifications; see Section 6.3. for a robustness check. AR- terms and trends are not reported in the table. The regression was estimated with Eviews 6.

Table 1 Determinants of the current account – results of the FGLS estimations

	(1) Basic Model	(2) Financial Development Model
D(INCOME)	-0.506 *(-2.74)***	-1.163 *(-9.03)***
DEPENDENCY	-20.220 *(-2.25)***	-33.483 *(-2.00)***
CAPITAL (-1)	-0.080 *(-3.55)***	-0.048 *(-3.39)***
FDIGDP (-1)	-0.151 *(-2.97)***	-0.199 *(-4.27)***
RESERVES		0.253 *(7.73)***
EXCHANGE		-0.311 *(-0.23)*
D(CREDIT)		-9.226 *(-3.70)***
M2GDP		-0.031 *(-1.76)**
CRISIS (-1)		1.880 *(4.25)***
D(CHINN_ITO)		-0.337 *(-1.26)*
OVERALL INTEGRATION		-0.017 *(-2.54)***
INTRA INTEGRATION		-0.154 *(-3.60)***
FOREIGN BANKING		-0.086 *(-3.13)***
Interaction term: Overall Integration *Income		0.0003 *(3.66)***
Interaction term: Intra Integration *Income		0.001 *(1.61)**
Interaction term: Foreign Banking *Income		0.001 *(1.88)**

*** (**) [*] denotes significance at the 1% (5%) [10%] level; t-values in parentheses.

The results of the *basic model* stress the importance of the domestic macroeconomic variables and confirm the expected coefficients. Countries in emerging Europe and emerging Asia experiencing more pronounced income growth (relative to the core country) are found to record higher current account deficits or lower surpluses.[65] Moreover, as in Masson et al.

[65] We were unable to test for consumption smoothing in a strict sense, as the level of per capita income, expressed as a percentage of per capita income at the core, was found to be non-stationary and was differentiated. However, assuming that poorer countries grow faster than richer countries would indirectly lend support to the *consumption smoothing* hypothesis, implying that capital flows *downhill*

(1998) and Chinn/Prasad (2000), countries with a higher dependency ratio show a higher current account deficit. Furthermore, larger gross inflows of capital as well as stronger FDI inflows, both expressed as a percentage of GDP of the recipient country, increase the current account deficit significantly, indicating that foreign capital acts as a major source of investment funding. In doing so, the impact of FDI on the current account seems to be remarkably stronger than the influence of capital inflows in general (see also Rahman, 2008, for the impact of FDI).

The *financial development model* confirms – in accordance with Chinn/Ito (2007) – that financial markets do matter for saving and investment decisions. We conclude that more developed financial markets allow emerging economies to invest more due to a more sophisticated financial intermediation. This is indicated by significant negative coefficients of real credit growth and the M2 ratio.[66] Furthermore, the experience of a banking crisis seems to be an incentive for countries to run current account surpluses. This result supports the empirical findings of Felipe et al. (2006) and Gruber/Kamin (2005), implying that recent patterns of current account surpluses in emerging Asia can be linked to the financial crisis of 1997. In addition, a higher stock of foreign exchange reserves is significantly linked with an improvement in the current account balance in both model specifications. By contrast, we find that an appreciation of the real effective exchange rate, while being associated with a higher current account deficit (lower current account surplus), is not significant in the model specification presented in Table 1.[67]

The model confirms that all indicators of financial integration are negatively correlated with the external balance, with only the Chinn/Ito index failing to be significant. Thus, the model lends support to the hypothesis that the degree of overall financial integration, the extent of financial integration *within* the convergence clubs and the penetration of foreign banks into domestic banking sectors matter for developments in the current account balance. This result is in line with the findings of Chinn/Ito (2007) that a greater degree of financial openness is typically associated with a smaller current account balance in developing countries. It is also consistent with the results of Abiad/Mody/Leigh (2007) and Blanchard/Giavazzi (2002), suggesting that financial integration in Europe is a major reason for capital flowing downhill from rich to poor.

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from rich to poor countries. The *consumption smoothing* hypothesis is confirmed, i.e. by Chinn/Prasad (2003) or Aristovnik (2008).

[66] As the private credit to GDP ratio has been differentiated, the variable represents the change in the private credit to GDP ratio.

[67] Aristovnik (2008) has found a significant link between the appreciation of the real exchange rate and the deterioration of current account balances in emerging Europe.

Finally, all variables representing the de facto degree of financial integration interact positively and significantly with the relative income level. Two major results arise:

- *First*, the relationship between financial integration and the current account depends on the level of income. As a result, the parameter of overall financial integration (-0.0169 + 0.0003 * per capita income), intra-regional financial integration (-0.1543 + 0.001 * per capita income) and foreign banking asset share (-0.0864 + 0.001 * per capita income) is negative for low-income countries and positive for high-income countries. Thus, in line with the findings of Abiad/Leigh/ Mody (2007), a higher level of financial integration leads to an increased dispersion of current account balances, as – given a certain income level – deficits and surpluses will be larger compared with a situation in which there is a low level of financial integration.
- *Second*, the degree of financial integration has a positive impact on the link between the relative income position and the current account, as a higher level of financial integration contributes to a higher income coefficient (0.0003 * overall financial integration + 0.001 * intra-regional financial integration + 0.001 * foreign banking asset share). Thus, depending on the underlying relationship between per capita income and the current account[68], a higher degree of financial integration will either strengthen consumption-smoothing behaviour or be associated with a shift in the underlying relationship between relative per capita income and the current account from the Lucas paradox to consumption-smoothing.

Overall, our analysis indicates that more developed financial systems in emerging economies and deeper financial integration are associated with a deteriorating current account balance. Thus, at the current income level of the countries under review, financial development and integration seem to enhance countries' ability to perform consumption-smoothing activities.

6.3. Robustness check

First, by using an IV estimator according to Anderson/Hsiao (1981), we estimate a dynamic model with a lagged dependent variable (instead of using AR-terms to control for autocorrelation). In addition, a dynamic model takes into account a possible endogeneity of certain right-hand side variables. This dynamic estimator also avoids the Nickell bias. The constant, the second lag of the endogenous variable, the exogenous variables and their lags, as

[68] As the level of per capita income was found to be non-stationary, our analysis does not allow us to make inferences regarding the underlying relationship between per capita income and the current account, i.e. whether financial integration has an impact on the direction of the relationship between income and the current account. Abiad/Leigh/Mody (2007) found that a certain level of financial integration is associated with a shift in the per capita income – current account relationship, with countries below this level of financial integration being subject to the Lucas paradox, while above this threshold level of financial integration consumption-smoothing behaviour is observed.

well as two lags of the pre-determined variables RESERVES, EXCHANGE, CAPITAL and FDI, were used as instruments. The results are comparable to the FGLS estimation. However, the advantages of the dynamic estimator are offset by a lower efficiency relative to the static estimation, which also reflects the limited amount of observations. As the Nickell bias is unlikely to play a major role in our context, given the relatively small number of cross sections and the relatively large number of time periods, we prefer the static estimation results.

Second, instead of using a linear time trend (in order to control for trend-stationary variables) we run an estimator with period fixed effects (in addition to the cross section fixed effects). Period time dummies are a more general specification of a time trend. The results do not deviate significantly from the FGLS estimator, but they do show a reduced significance.

Third, alternatively, we follow a kind of *encompassing method* by introducing additional variables step by step to see what changes occur when they are added. The coefficients of the estimated variables in these alternative model specifications – except for the dependency ratio, which shows a certain variation in the different models – are robust to these alterations. Furthermore, we consider alternative measures of financial sector development and quality, namely the spread between lending and deposit rates and the share of non-performing loans to total loans, which turned out not to be significant.

Fourth, we also control for the effect of the exchange rate regime. Although standard economic theory does not give any indication that - in the long run - the exchange rate regime has a bearing on the current account balance, short-run adjustment effects cannot be excluded (see e.g. Kamil, 2007). These might be of relevance, as our analysis is based on annual data. Following IMF (2006b), we include a dummy variable representing the exchange rate regime. This variable was found to have no significant impact on the current account and, in addition, not to impair the outcome of the original estimation.

Fifth, in a different estimation we exclude China from the analysis, as developments in China stand out within the Asian sample. The results deviate only marginally from the original model. Moreover, based on the idea that there might be disadvantages in forcing two different convergence clubs into the straightjacket of a common regression, we run separate estimations of the European and Asian samples. The results are very much comparable to the original estimation. However, due to the fact that the number of observations is much smaller, some variables exhibit a less pronounced significance. The most striking difference is that the Chinn-Ito capital account openness index turns out to be positive in the European sample but negative in the Asian sample, in line with the result of the overall estimation.

6.4. Contribution analysis

As a second step, we perform a contribution analysis that provides information on the *economic significance* of the estimated variables. In particular, the analysis reveals the extent to which financial development and integration give rise to different current account developments in emerging Europe and Asia. *Chart 28* plots the contributions of the individual variables to the current account balances as a percentage of GDP for the average of the European and Asian samples between 1994 and 2006.[69]

Except for 1998/99, the post-financial crisis years, and 2001, the change in *relative per capita income* contributes negatively to the current account in both peripheries. In emerging Europe the income effect gains strength in the second half of the observation period due to a more rapid convergence process. In 2006, around 2 percentage points of the current account deficits in emerging Europe can be traced to the rapid catching-up of per capita income levels compared with the euro area. These results indicate that – based on their lower relative income compared with the core – both regions smooth their consumption via the inflow of capital flowing *downhill* from rich to poor and "financing" the catching-up process in the countries under review. However, in Asia, this negative effect of the relative income position on the current account is compensated by the impact of other variables, leading *in total* to net capital outflows.

In both samples, the *demographic situation* has a strongly negative impact on current account developments. The impact, the size of which is almost equal in both peripheries, declines slightly over time, as the ratio of the non-working population to the working population has been decreasing in both regions under review. However, at the current end of the sample, the ratio still accounts for more than 15 percentage points of the current account deficit in both samples.

In both regions, a negative current account balance emerges due to *size and composition of capital inflows*. While the contribution was of almost equal size and direction in the years preceding the 1997 Asian financial crisis, since the turn of the century both variables have been contributing to larger current account deficits in emerging Europe relative to emerging Asia. Moreover, compared with other variables, the overall contribution of both variables is rather small.

[69] The data result from multiplying the estimated parameters of the Financial Development Model in Table 1 by the annual figures of each factor using the average in the two regions. Thus, the analysis informs about the relative contributions of the various variables to the predicted current account/GDP ratio for both peripheries.

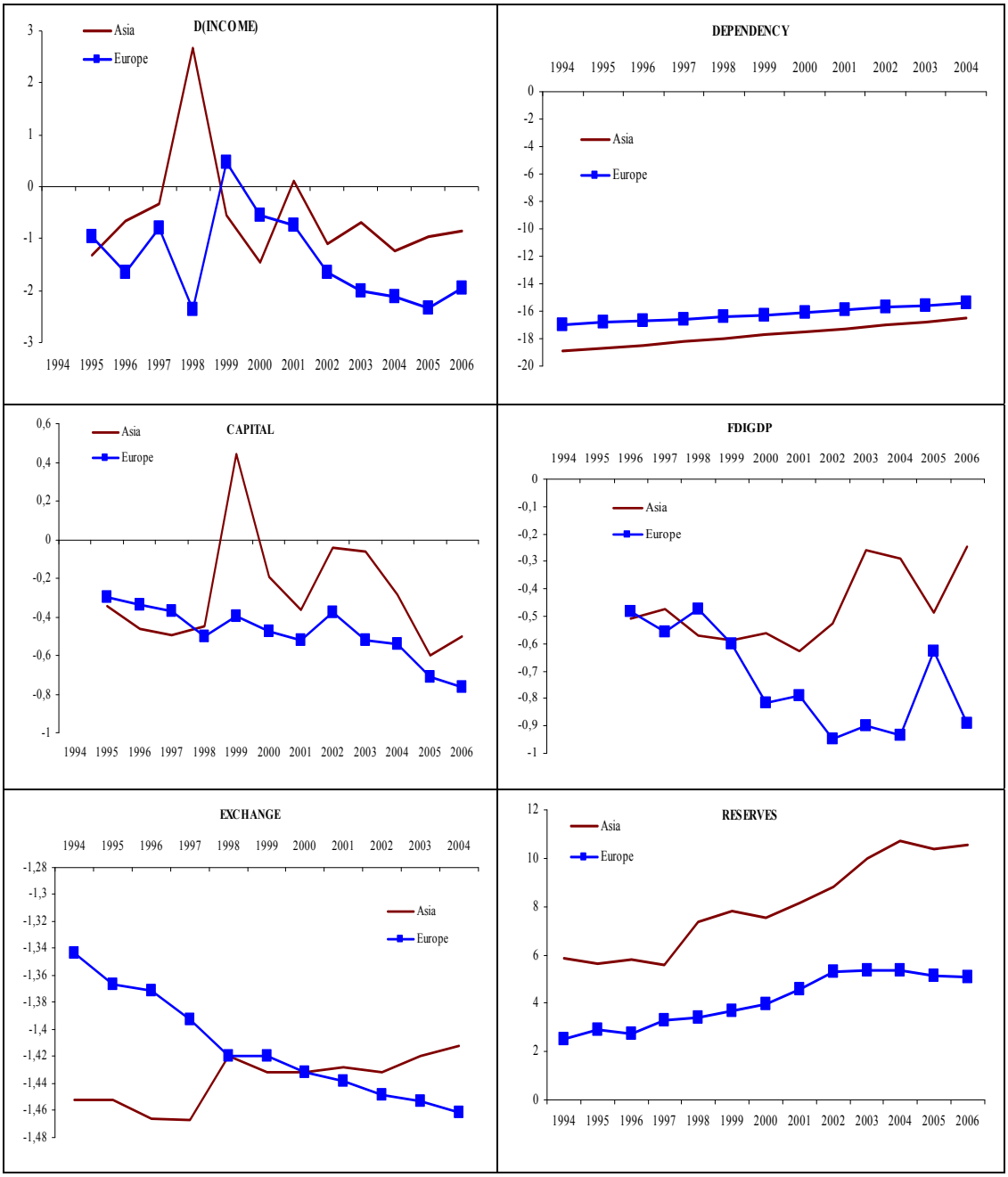
Due to the strong accumulation of foreign exchange reserves in emerging Asia, the positive impact of this variable on the current account is substantially more pronounced in Asia. In 2006, reserves account for a current account surplus in emerging Asia of more than 10 percent of GDP, compared with 5 percent in emerging Europe in 2006, with the wedge increasing over time. In particular, the much more rapid pace of reserve accumulation in emerging Asia, in particular after 2001, has a sizeable impact on the (lack of) improvement of current account balances in emerging Asia (emerging Europe).

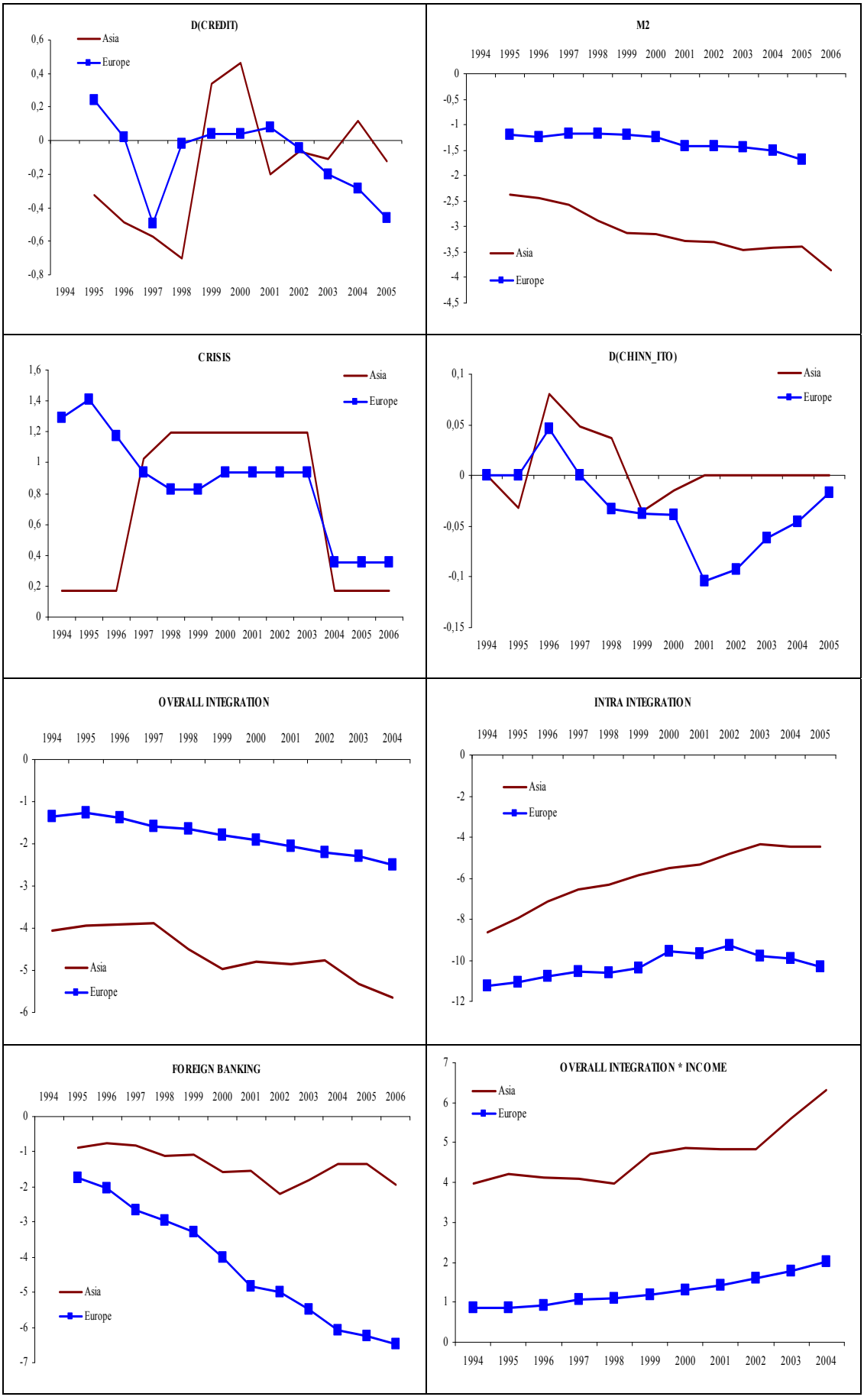
As there has been broad stability of real effective exchange rates since the financial crisis in emerging Asia, the negative contribution of this variable to the predicted current account balance in emerging Asia has been broadly stable as well. By contrast, as emerging Europe has experienced a constant revaluation of the real effective exchange rate over time, the variable slightly reduces the model's prediction of current account balances in emerging Europe.

Strong growth in private sector credit leads the model to predict slightly larger current account deficits in emerging Europe in the second half of the review period, while a rising M2 to GDP ratio adds 2 percentage points on the negative side for predicted current account balances in emerging Asia. The impact of the 1997 crisis on current account balances in emerging Asia, which is also seen in other variables, is most visible in the contribution of the banking sector crisis variable, driving the current account into a surplus for several years after the financial crisis. While this is in line with Gruber/Kamin (2005), a comparison of the contribution of the crisis variable to predicted current account balances in both peripheries leads to the conclusion that it does little to help explain the increasing divergence of current account patterns in the two regions under review since the early 2000s.

The results of the contribution analysis also suggest that the divergence in current account patterns in both peripheries cannot be strongly linked to differences in the level of *overall* financial integration. Indeed, as emerging Asia has a higher degree of overall financial integration, *ceteris paribus* this variable leads the model to predict higher current account deficits in emerging Asia than in emerging Europe. Moreover, since overall financial integration has increased in both regions over time, the variable does not contribute to the explanation of divergent current account patterns over time. Finally, when assessing the *net* impact of overall financial integration by controlling for the interaction terms, the contribution of overall integration to predicted current account balances is close to zero in both regions.

Chart 28 Contribution to the current account developments in Europe/Asia (in % of GDP)




D(CREDIT)
Asia
Europe
0,6
0,4
0,2
0
-0,2
-0,4
-0,6
-0,8
1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005
M2
1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006
0
-0,5
-1
-1,5
-2
-2,5
-3
-3,5
-4
-4,5
Asia
Europe
CRISIS
Asia
Europe
1,6
1,4
1,2
1
0,8
0,6
0,4
0,2
0
1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006
D(CHINN_ITO)
Asia
Europe
0,1
0,05
0
-0,05
-0,1
-0,15
1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005
OVERALL INTEGRATION
1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004
0
-1
-2
-3
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Asia
Europe
INTRA INTEGRATION
1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005
0
-2
-4
-6
-8
-10
-12
Asia
Europe
FOREIGN BANKING
1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006
0
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-5
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OVERALL INTEGRATION * INCOME
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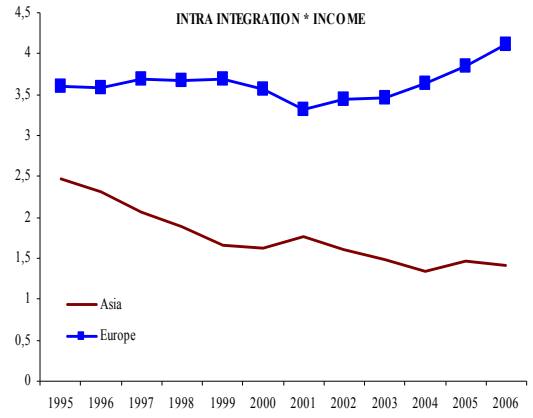
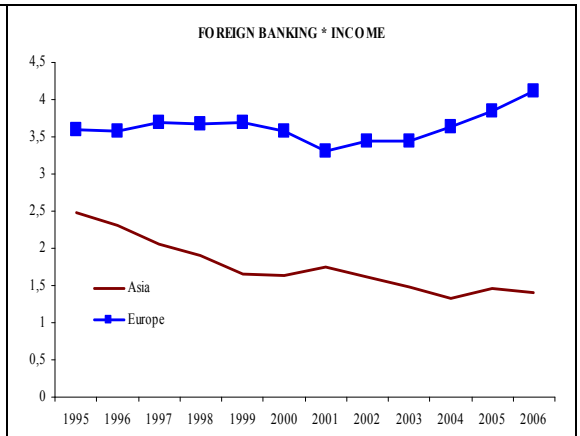
Asia
Europe
1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004





Source: Authors' calculations.

By contrast, the variables depicting financial integration *between the core and the periphery* play a key role in explaining the different pattern of current account balances in the two peripheries. This is because the decline in US banks' claims on emerging Asian countries halved the contribution of this variable to predicted current account balances over the review period. Thus, the net impact of the *intra-regional* financial integration on current account balances in emerging Asia, again calculated by controlling for the interaction term, is only slightly negative at the end of the review period. By contrast, in emerging Europe the net impact is strongly negative, dropping only slightly from about -7.7% to -6.2% of GDP. The rise of *intra-regional* financial integration in Europe *via the expanding presence of euro area banks* in the region has an additional negative impact on current account balances in emerging Europe, which even after controlling for the interaction term, is increasing over time. By contrast, the net effect of FOREIGN BANKING on predicted current account balances in emerging Asia is again close to zero.

To sum up, the main findings are:

- Macroeconomic factors have been important determinants of current account developments in emerging Europe and emerging Asia. In particular, the demographic situation seems to have a strong impact on agents' savings behaviour and thus current account balances. The ongoing strong catching-up process also induces an inflow of capital to both regions under consideration.
- All variables linking financial development and the current account turned out to be statistically significant. Moreover, compared with the macroeconomic factors, financial market characteristics appear to play an even more important role in explaining *divergent* current account patterns in emerging Europe versus emerging Asia.
- Strikingly different current account developments in the two regions under review are backed by stronger gross capital inflows and a larger share of FDI, a more pronounced

appreciation of the real exchange rate, faster real credit growth, a higher intra-regional financial integration and a larger presence of foreign banks in the domestic financial sector in emerging Europe compared with Asia.

- A faster accumulation of foreign exchange reserves and a more extensive experience of past banking crises in emerging Asia compared with emerging Europe has also been contributing to diverging external developments in the two regions.

7. Conclusions

In recent years, financial factors have been identified as key determinants of current account balances in emerging markets. There is a broad consensus in the literature that underdeveloped financial markets have been an important reason for the emergence of (rising) current account surpluses in emerging Asia, serving as an explanation for the anomaly of capital flowing from poor to rich countries, in particular to the United States. There has also been support for the hypothesis that a comparatively high degree of financial integration helps explain why capital has been flowing downhill within Europe, in line with consumption-smoothing behaviour predicted by standard theory.

Against this background, we analysed whether financial factors can explain divergent current account developments in the catching-up process of emerging Europe and emerging Asia. In doing this, we took the perspective that emerging Europe and the euro area/EU15, and emerging Asia and the United States, can be perceived as two different convergence clubs. This allowed us to introduce indicators of financial integration within the convergence clubs as additional explanatory variables.

Our analysis confirms that financial market development and financial integration are important factors in determining current account balances. In line with the views on finance and the current account distilled from the literature, we find that better developed financial markets and a higher degree of financial integration are generally associated with higher current account deficits/lower current account surpluses. However, several indicators of financial development and financial integration fail to account for the divergent patterns of real convergence and the current account in emerging Europe and emerging Asia. Instead we find that the degree and institutional pattern of financial integration *within* the convergence clubs – together with the level of foreign exchange reserves – contribute significantly to the model's predictions of strikingly different current account patterns in emerging Europe and Asia.

From this we draw the conclusion that the *character* of financial integration matters when explaining patterns of real convergence and current account balances in emerging markets. Emerging Europe has not been different because it has significantly better developed financial systems or because it is financially more integrated in the global economy than emerging Asia.[70] Rather, emerging Europe has been different because its financial integration *with its core* has been very different than in emerging Asia. This result can be interpreted as follows:

- European integration has created a very special environment for *financial sector quality* in emerging Europe[71], which may not be captured by the standard variables. This may be the reason why their economic relevance in explaining divergent current account patterns in both regions has been rather marginal. The adoption of EU laws and directives has significantly improved financial sector quality in emerging Europe by holding the legal, regulatory and supervisory framework in emerging Europe to the same standard as in the core. Furthermore, the entry of foreign banks has also served as an instrument for improving the quality of domestic banking sectors in the region (Mehl, Vespro and Winkler, 2006). Indeed, foreign-owned banks have been invited to enter the region after episodes of financial crises, revealing the weaknesses of domestic banks in terms of lending techniques and governance.

- The European integration process as such may have erased – at least to a large extent – the inherent *credibility gap* between core and periphery identified by the new mercantilist view. This is because the very process of European integration implies that the periphery (the new EU member states as well as candidate and potential candidate countries) joins the core by accepting key European institutions, laws and governance practices.[72] This may have given emerging Europe more leeway to run substantial current account deficits and limit reserve accumulation compared with emerging Asia,[73] and could also explain why foreign banks from the euro area/EU15

[70] At least, this conclusion cannot be drawn when financial development and financial integration are measured by indicators commonly used to account for both factors.
[71] Comparing financial sector development in all transition countries, i.e. including emerging Europe as defined in this paper as well as the CIS, Berglöf and Bolton (2002) use the term "great divide" to stress the different character and environment of financial sector development in transition countries caused by the fact that some countries (the countries of emerging Europe in our sample) have (at the time of the paper's publication) an EU accession perspective.
[72] In a similar vein, Luengnaruemitchai/Schadler (2007) offer confidence imparted by EU membership as one explanation for their finding that the central and eastern European Member States of the EU have been enjoying favourable risk premia, with some 50-100 bps lower than other emerging markets with similar fundamentals.
[73] If this interpretation is accepted, the fact that countries in emerging Europe have been accumulating foreign exchange reserves on a significant scale would indicate that the "provision of collateral" (Dooley et al., 2007) is not the only reason for countries to build up foreign exchange reserves.

have entered the domestic banking sectors in the region. Their presence has channelled funds to the periphery on a large scale and made it easier for emerging European countries to borrow abroad, either directly from their parent banks or indirectly by establishing contacts between companies and parent banks abroad.

To conclude, a peculiar environment conducive to financial integration between core and periphery appears to have allowed emerging Europe to enter a growth path that has been driven by domestic demand, in particular by investment, partly financed by foreign savings. As a result, emerging Europe has shown substantial current account deficits as predicted by standard theory. Of course, rapid financial deepening and the associated current account deficits have important macroeconomic and financial stability implications. They have been extensively reviewed in the literature (e.g. Eichengreen and Choudhry, 2005; Arcelan et al., 2007) as well as by international financial institutions and central banks (ECB, 2006a-c; Banerji and Kähkönen, 2007). Thus, while the example of emerging Europe illustrates the impact of financial integration for current account developments in a process of real convergence, it does not imply that this process does not involve risks. [74] At the same time, the example of emerging Europe raises the question whether a transfer of credibility, quality and confidence from the core is a precondition for emerging markets pursuing consumption-smoothing activities in a globalised financial system.

[74] In a way, concerns are a reversed image of those usually expressed for emerging Asia in the context of global imbalances (Mann, 2004).

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9. Data appendix

We provide below a listing of mnemonics, sources and descriptions for all the variables included in the empirical investigation. Additionally, we supply a listing of all countries belonging to the Asian and European sample. Unless otherwise noted, data were available from 1994 through 2006.

Mnemonic	**Source***	V**ariable description**
CAGDP	WEO	current account to GDP ratio
CAPITAL	IFS	gross capital flows (as % of GDP)
CHINN_ITO	CI	capital account openness index
CREDIT	FSD	private credit by deposit money banks to GDP ratio
CRISIS	CK	Systemic banking crisis index
DEPENDENCY	IFS	dependency ratio (dependents to working-age population)
EXCHANGE	BIS	logarithm of the real effective exchange
EXTERNPOSITION	IFS	foreign assets minus foreign liabilities to GDP ratio
FDIGDP	IFS	FDI as % of GDP
FOREIGN BANKING	WB	foreign-owned banking assets (in % of the total banking sector assets in the periphery country)
GOVERNMENTBALANCE	WEO	general government balance to GDP ratio
INCOME	WEO	country's GDP per capita (PPP terms) to euro area average/US GDP per capita (PPP terms)
INTERESTSPREAD	IFS	lending rate minus deposit rate
INTRA INTEGRATION	BIS	consolidated foreign claims of euro area/US banks on the respective emerging country as a percentage of GDP of the recipient country
M2	IFS	M2 to GDP ratio
NPL	GFSR	non-performing loans to total loans
OVERALL INTEGRATION	IFS	foreign assets plus liabilities to GDP ratio
RESERVES	WEO	stock of foreign exchange reserves at year-end to GDP ratio
RIR	WDI	real interest rates in %
TOT	WEO	terms of trade, goods and services
TRADE	WEO	trade openness (world exports/imports in % of GDP)
STOCKMARKET	WEO	stock market turnover (shares traded/GDP)
GDPGROWTH	WEO	real GDP growth rate to euro area average/US

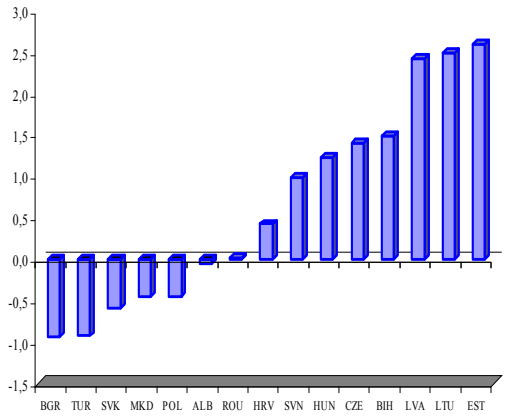
*BIS: Bank for International Settlements, CI: Chinn/Ito (2007); CK: Caprio/Klingebiel (2003); FSD: World Bank Financial Structure Dataset; GFSR: IMF Global Financial Stability Report; IFS: IMF International Financial Statistics; WB: World Bank (Claessens, Stijn, Neeltje van Horen, Tugba Gurcanlar and Joaquin Mercado (2007), "Foreign Bank Presence in Developing Countries 1995-2006: Data and Trends"; WDI: World Bank World Development Indicator; WEO: IMF World Economic Outlook.

Emerging Asian Countries: China (CHN), Hong Kong (HKG), India (IND), Indonesia (IDN), Korea (KOR), Malaysia (MYS), Philippines (PHL), Singapore (SGP), Taiwan (TWN), Thailand (THA), Vietnam (VNM)

Emerging European Countries: Albania (ALB), Bosnia and Herzegovina (BIH), Bulgaria (BGR), Croatia (HRV), Czech Republic (CZE), Estonia (EST), Hungary (HUN), Latvia (LVA), Lithuania (LTU), Macedonia (MKD), Poland (POL), Romania (ROM), Serbia (CS), Slovak Republic (SVK), Slovenia (SVN), Turkey (TUR)

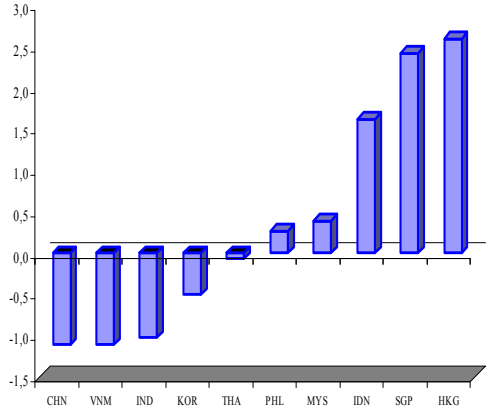
Annex 1 Indicators of financial integration in emerging Europe and emerging Asia

Figure A1a Chinn-Ito Index in emerging Europe
(averages, 1994-2005)



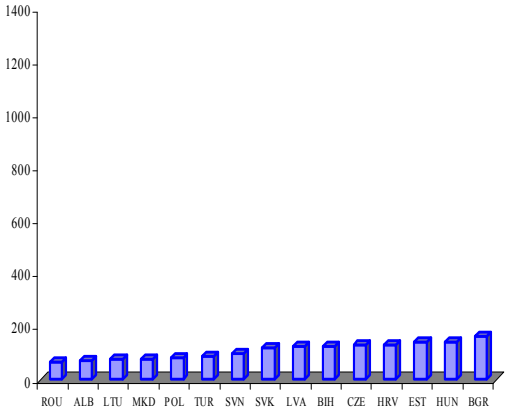
Source: Chinn/Ito (2005).

Figure A1b Chinn-Ito Index in emerging Asia
(averages, 1994-2005)



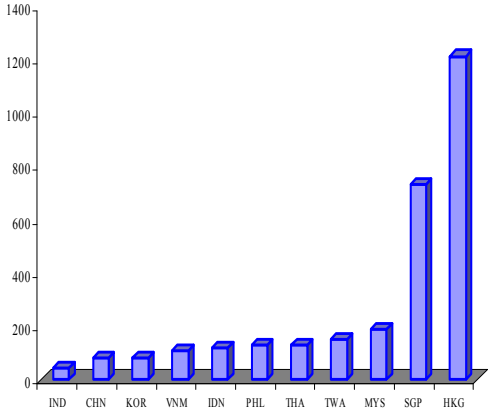
Source: Chinn/Ito (2005).

Figure A2a Sum of foreign assets and liabilities in emerging Europe
(as a percentage of GDP, averages, 1994-2005)



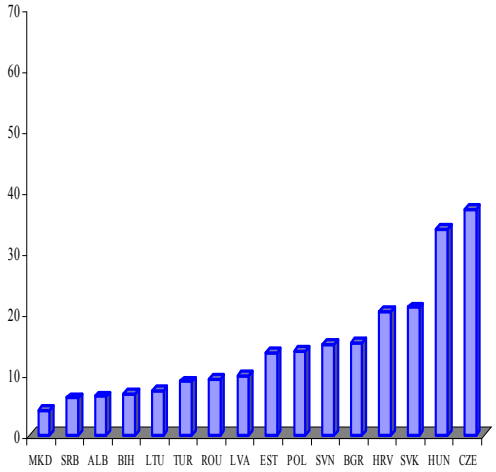
Source: IFS, Milesi/Ferretti and authors' calculations.

Figure A2b Sum of foreign assets and liabilities in emerging Asia
(as a percentage of GDP, averages, 1994-2005)



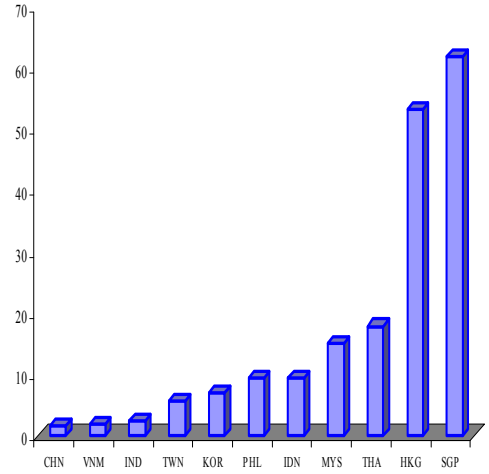
Source: IFS, Milesi/Ferretti and authors' calculations.

Figure A3a Consolidated euro area bank claims in emerging Europe
(as a percentage of GDP, averages, 1994-2005)



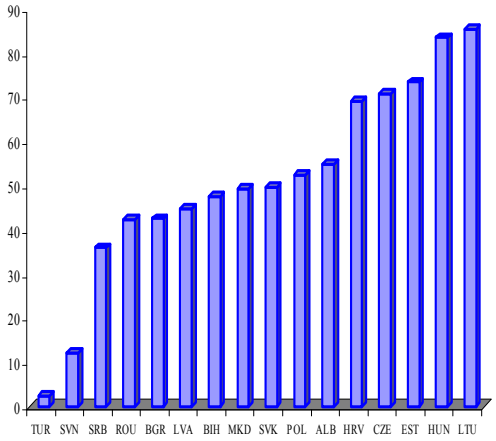
Sources: BIS, IMF and authors' calculations.

Figure A3b Consolidated US bank claims in emerging Asia
(as a percentage of GDP, averages, 1994-2005)



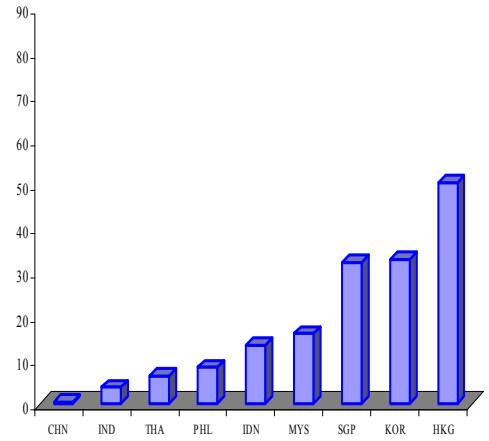
Sources: BIS, IMF and authors' calculations.

Figure A4a Foreign banking assets in emerging Europe
(as a percentage of GDP, averages, 1994-2006)



Sources: World Bank, authors' calculations.

Figure A4b Foreign banking assets in emerging Asia
(as a percentage of GDP, averages, 1994-2006)



Sources: World Bank, authors' calculations.