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Analysis of the convergence process from the point of view of the financial crisis

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Following Hungary's accession to the European Union, the greatest challenge facing economic policy is compliance with the criteria for joining Economic and Monetary Union. Although the adoption of the euro is a medium-term objective, economic policy decision-makers must consider the convergence criteria even now, in order to be able to comply with them at the lowest possible cost.

Similarly to the other Member States wishing to participate in Monetary Union, prime responsibility for the elaboration and execution of the Convergence Programme rests with the government in Hungary. However, the central bank also plays an important role in execution, primarily in the field of monetary and exchange rate policies. The major milestones of convergence, i.e. accession to ERM II and adoption of the euro, can only be reached if the government and the central bank act in mutual agreement. Moreover, convergence indirectly affects the central bank's operations, and the manner in which money and capital market participants perceive future developments in the economy. Furthermore, convergence fundamentally influences domestic monetary conditions, including the scope of interest and exchange rate policies. For this reason, the central bank must continuously evaluate progress in convergence and Hungary's steps towards preparing for the euro.

Due to the role the MNB plays in the convergence process, this overview of the central bank's position regarding the current state of convergence and the challenges expected in the near future may be of public interest. This new MNB publication intends to raise the awareness of decision-makers, professionals and the wider public regarding the frequently intricate issues of participation in Monetary Union and ultimately help Hungary to adopt the euro under the best possible conditions.

This issue of the *Analysis of the Convergence Process* was prepared by the Monetary Strategy and Economic Analysis and the Financial Analysis Departments of the MNB. The work was supervised by Ágnes Csermely, the project manager has been Mihály András Kovács. The *Analysis* was approved for publication by Ferenc Karvalits.

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The analyses in this issue incorporate valuable input from Monetary Council members' comments and suggestions. However, the analyses in this publication reflect the views of the Monetary Strategy and Economic Analysis and the Financial Analysis Departments staff and do not necessarily reflect those of the Monetary Council or the MNB.

Contents

The financial crisis may force changes in the convergence model for the Hungarian economy	For several decades, Hungarian economic growth was driven mainly by foreign financing, but as growth accelerated, the country's external balance eventually began to deteriorate. While external and public sector debts rose steadily in the period prior to the financial crisis, the pace of real convergence first slackened and then came to a complete standstill. These factors left the Hungarian economy with a number of vulnerabilities on the eve of the financial crisis. In previous *Reports*, we examined in detail the structural factors hindering fast and sustainable economic growth in Hungary. In addition to highlighting the structural weaknesses of the economy, the financial crisis revealed new aspects of real convergence in terms of financing. When the crisis hit, countries relying heavily on external funding to finance their growth suffered an even more severe recession in 2009, in contrast to those where growth was financed by domestic savings to a greater degree. As it appears unlikely that investors' risk appetite will return to pre-crisis levels for quite some time, the Hungarian growth model will presumably need to be overhauled: over the medium term, convergence cannot proceed at the expense of a significant deterioration in external balance, given the decrease in the availability of external funds.
Maintaining a tight fiscal policy is a minimum requirement for Hungary to catch up with the euro area	Repeated episodes of fiscal indiscipline have been the primary cause of the build-up of external debt in Hungary. After the turn of the millennium, there was significant and sustained fiscal loosening, with the government budget absorbing a large part of private savings. This also contributed to the banking sector financing its domestic activities mainly by direct borrowing from abroad. As foreign lenders are only willing to finance a limited part of emerging country debt in the domestic currency, excessive debts were built up in foreign currency, in line with international experience. This is another source of vulnerability for the Hungarian economy. As fiscal loosening was responsible for the emergence of the vulnerabilities in the economy, both real convergence and economic balance can only be maintained if fiscal policy remains tight over a sustained period. Despite starting from a very unfavourable position, there was a significant improvement of nearly 8 percentage points in the structural fiscal balance-to-GDP ratio between 2006 and 2010. Due to the high indebtedness of the economy, there is little scope for maintaining a more lax fiscal policy over the long term.
Permanent restructuring of the Hungarian budget will, however, be necessary in order to accelerate the slow convergence process that has occurred since the turn of the millennium	Still, maintaining a tight fiscal policy will only be sufficient for the economy to continue converging with the European economy at the slow pace observed during the period since the turn of the millennium. For successful convergence, the structural weaknesses of fiscal policy must also be addressed, in addition to maintaining fiscal balance. An economic policy is required which improves those areas where Hungary's international competitiveness is weak by international standards: reforming the tax system, enhancing labour supply, raising the skill level of the workforce and improving the dual economic structure are all important factors in this regard. In respect of sustainable growth, most of the government measures during the past year (reducing the tax wedge, tightening the eligibility criteria for social transfers) were positive developments, but further action will be required to close the gap to other countries in the region. Furthermore, a

	reform of the expenditure side of the government budget is a precondition for speeding up the convergence process, given that lowering the general tax level can only be achieved by reducing government redistribution, in addition to maintaining fiscal balance. This is also supported by the fact that in some areas (e.g. health care and public investment) budgetary adjustment has led to underspending, in contrast to other areas (e.g. general government operating expenses) where the level of government expenditure is still higher than in neighbouring countries.
Sustainable economic policy is required, regardless of euro agenda, while disciplined economic policy can bring substantial economic gains of the euro	Maintaining prudent fiscal policy and improving the competitiveness of the economy are necessary, regardless of the strategy for euro adoption. However, it seems reasonable to join the euro area in the foreseeable future. First, as discussed in previous *Reports*, Hungary is highly integrated economically and financially with the euro area. This means, that membership may provide a substantial potential benefit for Hungary. Second, during the episodes of market turbulence in recent years, non-euro area EU Member States have experienced extremely volatile capital flows and have been faced with a number of resulting financial stability challenges. Financial integration based on the free movement of capital within the EU may be an especially strong argument in favour of euro adoption in countries with high foreign currency debts. The latest European experiences, however, have also made it evident that adoption of the euro cannot substitute the need to deliver macroeconomic stability. The benefits of euro adoption can only be exploited if backed by disciplined economic policies because fewer adjustment channels are available within the monetary union. Consequently, if there is sustained divergence of a country's economic policy from the core Member States with stable fundamentals, the necessary adjustment will be longer and more painful.
Macroeconomic sustainability may be given primary emphasis in the convergence process	There are growing signs that in the future the EU institutions will very closely monitor whether a country has met the Maastricht convergence criteria. Prior to adoption, a country's readiness to adopt the single currency is formally assessed against the well-known convergence criteria defined in the Maastricht Treaty. However, presumably, a country must also demonstrate that it is capable of maintaining economic stability, and fiscal and external sustainability upon joining ERM II. Although currently Hungary does not meet any of the Maastricht criteria, from a sustainability perspective several positive signs have become visible recently. Fiscal policy has made a shift towards a balanced position and the structural position of the government budget is strong by international standards. Both Hungary's Convergence Programme and the Fiscal Responsibility Act, however, still require the government to make a further adjustment equivalent to one per cent of GDP in 2011. In the context of the current outlook, the MNB's inflation target is expected to be met in 2011. Maintaining the low inflation environment, however, poses another challenge to monetary policy. If expectations become unanchored, there is a significant risk that inflation will increase as the economic recovery gathers pace. Several factors, however, introduce a fair degree of uncertainty into the sustainability calculations. First, a major risk is that it is currently difficult to judge precisely where the level of potential output will be once the crisis is over and how high the economy's growth rate will be. A second uncertainty

	factor is the risk premium at which the market will be willing to finance the country's high external and public debts accumulated in the past. In the baseline scenario, assuming that the structural fiscal position of 2010 is maintained, public debt may begin to fall, along with a sustained reduction in external debt as a result of an improvement in the fiscal position and adjustment by the private sector. However, it will take several years for the economy to slowly reduce its high debt accumulated in the period preceding the onset of the crisis. Hungary will, therefore, have to consistently demonstrate its commitment to maintaining stability. Such a strategy may ensure that not only will Hungary exit the excessive deficit procedure, but it will also retain sufficient room for fiscal manoeuvre: in the event of an adverse shock, economic policy will have the ability to respond even after the country has given up independent monetary policy.

1. Medium-term outlook for the Hungarian economy in terms of convergence with Europe

Before the financial crisis, financial investors typically underestimated macroeconomic risks. The crisis, however, resulted in a reassessment of risk factors, which – after a temporary decline in risk premia – may remain persistently higher than it was before the crisis. Consequently, compared to the previous decade investors are likely to take a more cautious approach to providing capital to finance countries with significant macroeconomic imbalances. This change in behaviour affects the Hungarian economy in two ways: via a "flow" and a "stock" effect.

The flow effect means that a growth path financed from external deficit is less likely to be maintained, or it appears to be a riskier and more expensive undertaking. The stock effect means that because of the magnitude of public debt and external indebtedness accumulated during the last decade, Hungary will continue to be seen as risky even if growth in the future depends on internal sources to a degree greater than in the past decade. In other words, decreased risk appetite makes external financing more expensive and more unstable, and at the same time domestic operators are now inclined to spend more of their income on debt servicing. In the future, both of these factors are likely to hinder growth in domestic demand.

For decades, one typical aspect of the Hungarian economy has been that rising growth rates always occur in tandem with an increase in the current account deficit. Therefore, in order to enable the Hungarian economy to substantially close the gap in terms of convergence after the crisis, the prior growth pattern will have to be significantly and permanently altered. As irresponsible fiscal policy was the major cause of indebtedness before the crisis, this is the most important field where a change of course is decidedly required, meaning that a strict fiscal policy must be maintained as a minimum economic policy requirement.

In order to accelerate the pace of Hungary's convergence within Europe, which was sluggish before the crisis, in addition to the above, it is also necessary to significantly improve economic policy incentives, that are detrimental from the perspective of economic growth. The lack of macro-stability, high marginal tax rates, the overly complicated tax system, the low level of human capital investments, and the dualistic nature of the economy all constitute persistent hurdles in the path of growth. Although the structural fiscal measures (tax restructuring, stricter social transfers, act on fiscal responsibility) introduced last year are considered favourable for improving economic balance over the long term, Hungary continues to lag considerably behind its regional competitors in terms of economic growth incentives.

This report contains quantitative figures for medium-term growth paths that satisfy the requirement of generating a current account deficit substantially lower than before the crisis. To begin with, we rely on the apparently conservative assumption that our principle export markets, mainly the euro area countries, will also slow down considerably for a longer period due to the financial crisis. Detailed forecasts from international institutes concerning growth within the euro area are presently available until 2011, but their analyses do point out some long-term factors suggesting a decline in growth rates. The slower growth rate seen in our export markets is likely to spread to Hungary as well, but in the baseline scenario we expect to be able to sustain the slow pace of Hungary's convergence to the euro area seen before the crisis. This assumption is based on the idea that the growth effect stemming from the need to maintain a lower current account deficit will be offset by the structural fiscal measures adopted by the Government during the last one year.

Along with the main scenario, we also model a considerably less favourable path. Assuming that the production capacities of the Hungarian economy have suffered more than expected because of the crisis, and that post-crisis risk aversion increases more strongly compared to the main scenario, the path of the real economy is likely to show extremely slow convergence, or none at all, with regard to the developed countries. In such a case, an external balance position tolerated by the market cannot be allowed to show a deficit for an extended period of time even if the economy is growing. In other words, growth in domestic demand under such an unfavourable conditions could be particularly slow, because the private sector is unable to raise external financing if fiscal policy remains unchanged.[1]

[1] These types of problems had been pointed out by Darvas-Simon (1999) even before the turn of the millennium.

The macroeconomic paths outlined in this chapter result in a steadily low current account deficit, and thus the country's net external indebtedness could embark on a strong downward trend in the upcoming years. For the improvement in the external balance predicted in our main scenario to occur, it is sufficient to presume that the positive trend in the structural balance of the central budget that lasted until 2010 can be sustained. In respect of the risk path, however, this is not enough, as the private sector is unable to obtain additional funds, meaning that the debt path is forced downward by the financial markets by inhibiting the convergence process. The curbing of the high volume of external indebtedness is impeded by the expected slowdown in economic growth and real appreciation, as well as by the permanent rise in risk premia. Moreover, we can expect that the ratio of foreign direct capital inflow in external financing will gradually decline. Therefore, even though we believe that the external indebtedness of the Hungarian economy will tend to show a downward trend during the next decade, no sudden decrease in external indebtedness can realistically be expected with the current economic structure.

If the current structural balance of the central budget can be sustained, our baseline scenario suggests that gross public debt can also be expected to decline steadily over the long run. This is unlikely to change significantly in the light of any structural shifts that may become necessary in the central budget in the decade ahead. On the whole, however, we project that in the main scenario the level of public debt will not drop below 60% of GDP by 2020. Nevertheless, this path appears unrealistic both in the sense that it fails to satisfy Hungary's commitments toward the EU (the Maastricht criteria may be met in 2011), and that it fails to comply with the real debt rule introduced by the act on fiscal responsibility. Based on these indicators, a permanent adjustment of one percentage point may be required relative to GDP. The picture outlined is considerably less favourable if the risk scenario materialises. In that case, the long-term adjustment of one percentage point of GDP will only stabilise the level of public debt. In both scenarios, however, the sustainability of the Hungarian budget may be considered relatively favourable by international comparison if we assume that the structural position of the central budget of 2010 can be preserved.

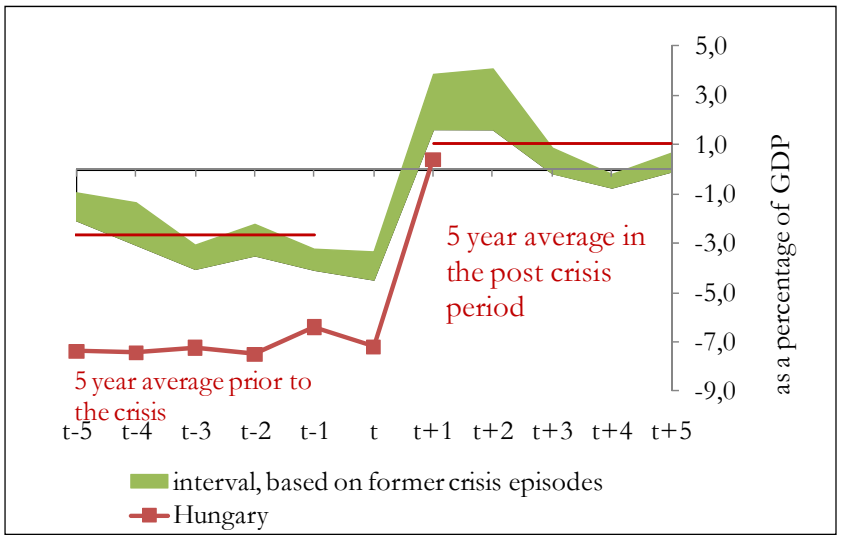
This chapter consists of three main parts. The first section focuses on the real economy adjustment implemented during the financial crisis, in the second part we discuss the medium-term prospects for real convergence, and the last one is dedicated to debt sustainability.

1. 1. Adjustments in the macroeconomy during the financial crisis

In Hungary, the pattern of the crisis developed most similarly to crisis situations in the past related to the capital account balance. This similarity is mainly manifested in the fact that the current account balance had to be adjusted very quickly as the previously strong inflow of capital came to a sudden stop. We did, however, manage to avoid the worst-case scenario, when funds are drained from the banking system, prompting banks to fail in large numbers. In contrast to previous capital account crises, the foreign parents of Hungarian banks – which control the majority of the Hungarian banking system – maintained a steady flow of funds to their Hungarian subsidiaries, whereas financing for banks without foreign owners was ensured by the IMF loan package. At the same time, adjustment of the current account balance was hindered considerably by the collapse of our export markets in the wake of the international financial crisis, thus compared to previous crisis the improvement in the external balance was not helped by the upturn in exports, and the correction was linked exclusively to the strong reduction in domestic demand.[2]

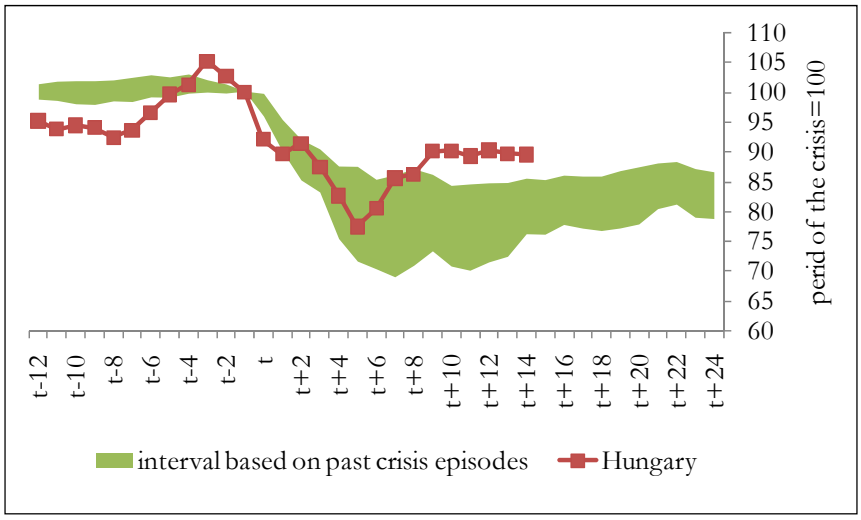
[2] In retrospect, it may seem that the financial markets overreacted to the signs of crises seen towards the end of 2008 and early 2009, relative to what has actually happened. This, however, should not obscure the fact that (1) the financial crisis struck primarily in countries with weak fundamentals, (2) as fundamentals depend significantly on the sustainability of economic policies in most cases, they often cannot be clearly established, and (3) due to market pressure, fundamentals in Hungary have significantly improved as well. In other words, although we cannot say with absolute certainty that the adjustments carried out during the crisis can be fully justified by fundamental factors, they nevertheless play a basic and decisive role in the developments.

Chart 1-1 Current account adjustments during sudden stops*



* Annual data. Crisis episodes of various types, minimum-maximum band, t is the time when the crisis broke out, which is 2008 for Hungary; based on the Laeven-Valencia (2008) database.

Chart 1-2 Real exchange rate adjustments during sudden stops*



* *Monthly data.* Crisis episodes of various types, minimum-maximum band, t is the time when the crisis broke out, which is September 2008 for Hungary, based on the Laeven-Valencia (2008) database.

The adjustment of the current account deficit means that domestic demand has to drop consistent with production. The process automatically entails depreciation of the real exchange rate. This can occur directly, via nominal depreciation of the currency, or over a longer period of time, when the persistently negative output gap forces domestic prices down. As illustrated in Chart 1-1 and 1-2, the degree of real depreciation seen thus far remains somewhat below the level experienced during the capital account crisis, whereas the adjustment of the current account balance appears on track. However, the adjustment of the current account balance seen today is influenced by a number of factors, which are only observed during recessionary periods. Emphasising the model's limits, in the box text below we attempt to provide an estimate as to how much long-term improvement in the current account balance is engendered by the approximately 10% real depreciation, which has occurred since the time before the crisis. According to the results from the FEER model estimated using domestic data, the 10% adjustment in the real exchange rate entails an improvement of close to 3 percentage points in the external balance position.

Box 1-1 Quantification of adjustments during the crisis within the framework of a FEER model

In order to better understand the adjustments made during the time of crisis, the so-called FEER (Fundamental Equilibrium Exchange Rate) approach of Williamson (1994) may provide a good starting point. One advantage of the model is its relative simplicity and that does not contain any firm assumptions as to the sectoral division of the economy (export versus domestic), hence its conclusions may be construed as relatively robust.

The premise is derived from the observation that the real exchange rate is a relative price that is expected to support the internal and external balance at the same time. While on the internal balance curve the real exchange rate and domestic consumption are positively related (prices tend to increase in parallel with the degree to which the economy overheats), if the external balance curve shows an external balance deficit, any growth in domestic consumption is likely to imply the depreciation of the real exchange rate. In this context, a specific balanced level (FEER) of real exchange rate is consistent with a specific external balance level, while the internal product market remains balanced. This is expressed in the following formula:

XX (external balance curve) CA =ca(-DA, -R, Z)*

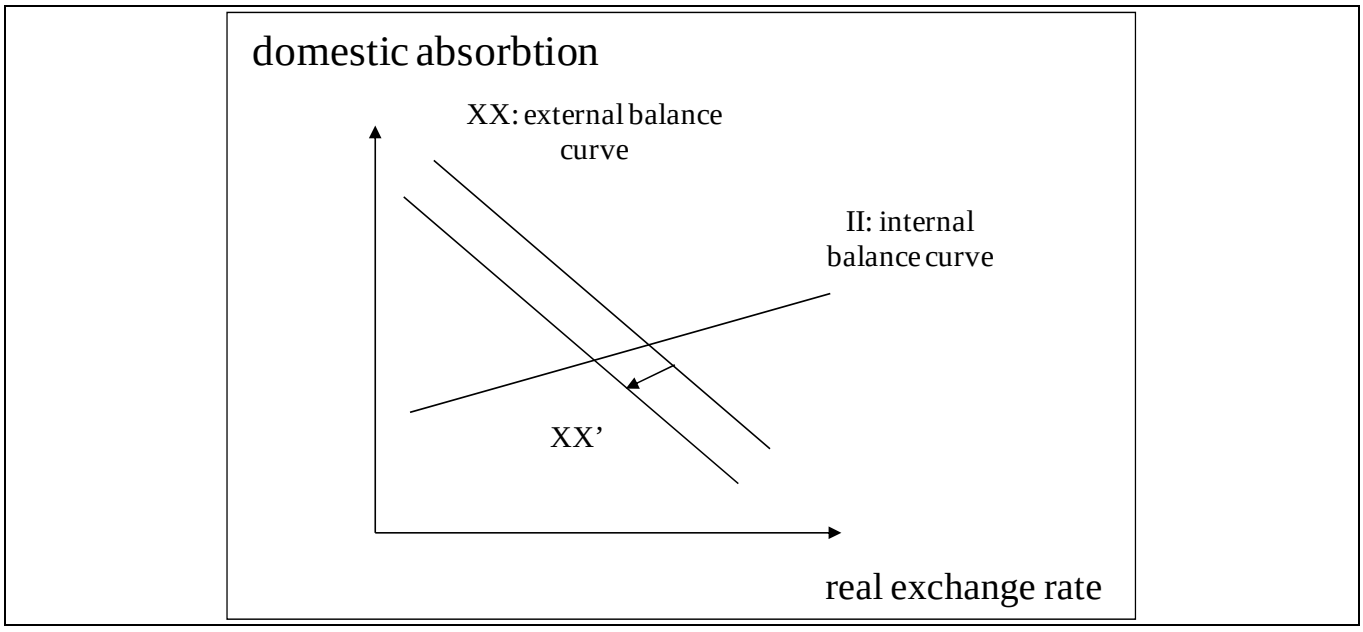
II (internal balance curve): DA =da(R, -NFL(-R), Z)

where

CA means current account, DA means domestic consumption, R means the real exchange rate, M means imports, X means exports, NFL means net foreign liabilities, Z means other competition factors that influence the balance real exchange rate (TFP, tax system, product quality, labour skills).

What happens when – as a consequence of increasing risk aversion – the level of the current account balance which is tolerated by the market declines? In that case, the XX curve in the chart below shifts to the left, as a given level of domestic consumption can only be consistent with a real exchange rate depreciated further relative to the level seen before. Accordingly, the new equlibrium real exchange rate is depreciated below the previous level, and domestic consumption falls below the level seen before the shock. In other words, where the current account balance has to be adjusted on account of the increasing efforts to avoid risks, it tends to depreciate the real exchange rate and to reduce domestic consumption at the same time.

Chart 1-3 Current account and real exchange rate adjustment during the financial crisis



The situation is rendered more complex by the fact that if the country has any net external foreign exchange debt, real depreciation increases the existing external indebtedness. Consequently, domestic consumption becomes more sensitive to the real exchange rate – through the wealth effect – than in the baseline scenario. Since the reassessment of debts tends to depreciate the interest balance, the external balance, on the other hand, will be more insensitive to changes in the real exchange rate, meaning that curve II is steeper and the XX curve is flatter.

At the same time, it is important to note that the illustration above contains *ceteris paribus* effects only: the real exchange rate does not necessarily have to be depreciated and domestic consumption reduced if, for example, productivity and/or the quality of production is improved systematically compared to foreign competition (Z factor in the formula); that is to say, these changes apply only relative to previous trends. This leads to the conclusion that real depreciation – which tends to deteriorate the situation of uncovered foreign exchange debtors – does not necessarily have to occur if appropriate economic policy measures are adopted during the time of crisis to improve the external balance while *ceteris paribus* maintaining the given real exchange rate, i.e. they appreciate the equilibrium real exchange rate. The government measures adopted in 2009 and 2010 for tax restructuring are considered as such measures (VAT increase is charged to domestic consumption only and it has no effect on exports, while cuts in labour costs and the increase in indirect taxes tend to offset one another as far as the national economy is concerned).[3]

Using the MNB's quarterly forecasting model, in a simplified version with some new equations, we performed simulations as to the ties between the adjusted current account balance and real exchange rate adjustments.[4] According to our calculations, the 10% adjustment of the real exchange rate brings about, *ceteris paribus*, an improvement in the external balance position of approximately 3 percentage points, which in turn results in a 2% drop in domestic demand over the short term and a sharp increase in the volume of net exports. Therefore, in addition to the 10% real depreciation compared to the trend before the crisis, the external balance deficit may drop to almost half of what it previously was.

It is also important to point out that the real exchange rate is a variable that cannot be influenced directly by monetary policy. The long-term real exchange rate adjustment results from the higher risk premium, and hence from the involuntary improvement in the external balance position that is tolerated by investors. The role of monetary policy is fundamentally limited to controlling the degree of correction as to prices or the adjustment of the exchange rate. On the basis of international experience, any sudden depreciation of the nominal exchange rate carries the risk of over-estimation and deep recession stemming from unhedged foreign exchange positions, whereas price and wage adjustments carry the risk of a protracted recovery period for the real economy on account of nominal wage rigidity.[5]

According to previous crisis episodes, depreciation of the real exchange rate helped recovery from recession considerably (De Gregorio-Lee(2004), Park-Lee(2001)). On the other hand, the rapid and uncontrolled depreciation of the nominal exchange rate could – through balance effects – deepen the recession over the short term.

According to international observations, the principle reason for the positive relationship between real depreciation and the recovery process is that external economic developments had a beneficial effect on the export sector, as well as the fact that tradable sectors had not been the primary market for the domestic banking sector, meaning that lower credit supply had a smaller impact on the export sector, which is comprised of large international corporations. This phenomena produced at least one extraordinary result, namely that during the upswing, growth and the domestic credit market froze practically at the same time. Given the fact that the export sector pulled the economies out of the crisis,

[3] See, for example, MKKT (2009).

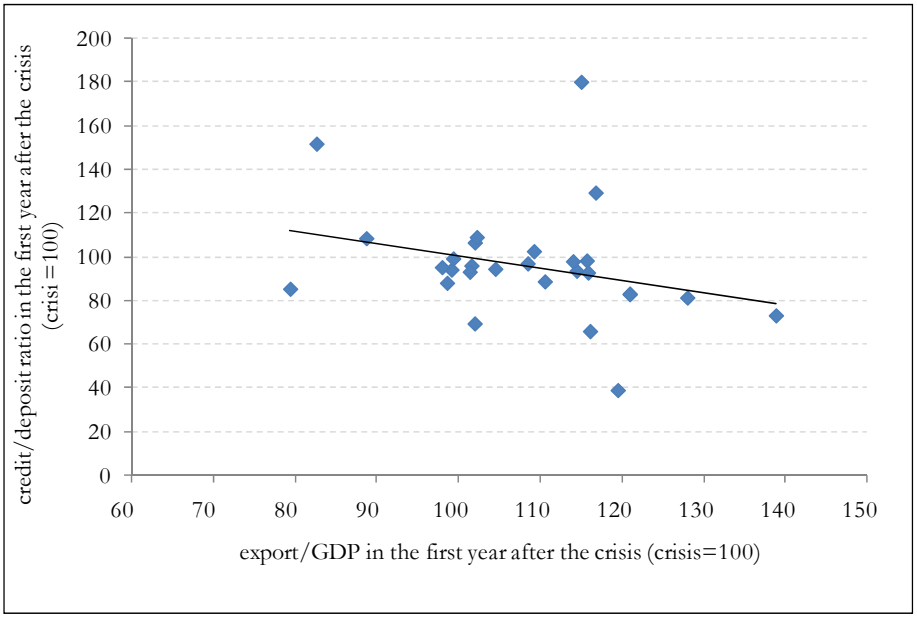
[4] For a detailed description of the model, see Kovács (2010).

[5] See Endrész-Krekó (2010).

this allowed the banking sector to withhold funds from the economy, i.e. to reduce the credit/deposit ratio (Tornell (2002)).

As shown in the chart below, the relative strength of the recovery of the export sector after the crisis is closely related to the ability of a crisis-stricken nation's banking system to adjust its balance sheet. There are probably two reasons behind this. First, in the balance sheet adjustment process, the banking system seeks to optimise the resolution of the dilemma between a deepening economic recession and the fastest possible adjustment. The faster it withdraws funds from the economy, the more it also runs the risk of exacerbating the recession, thus increasing the risk of existing portfolios and its own capital position as well. Second, if a bank chooses to slowly withdraw such funds, it continues to be considered risky that much longer, as far as the ratio of external financing within the balance sheet is concerned. As another explanation that may co-exist with the prior effect, is that in an economic environment which is considered more or less stable, deposits are placed in larger volumes, on account of which there is less need for balance sheet adjustment to take place through credit channels.

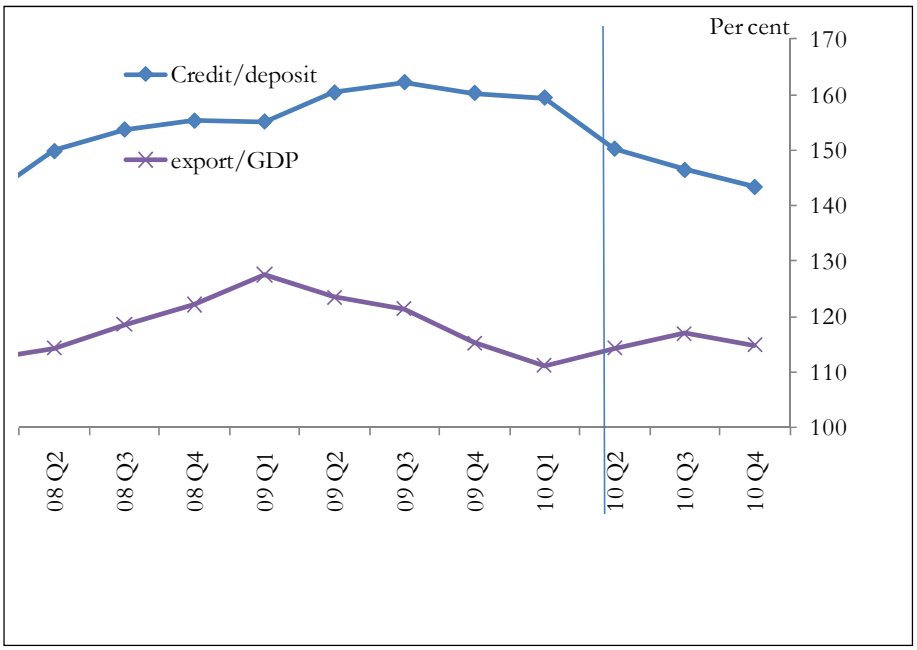
Chart 1-4 Credit/deposit indicator and export output in countries hit by the financial crisis during the first year after the crisis*



** Based on data of Laeven-Valencia (2008).*

Since the current crisis is of a global nature, at the early stages the entire economy has contracted, including the export sector. Consequently, during the early stages of the crisis the banking sector was unable to substantially adjust its balance sheet in the first half-year period after the failure of Lehman Brothers. Indeed, during this period the banking sector's external debt and credit/deposit ratio increased, despite the more conservative approach to risks. As illustrated in Chart 1-5 below, the efforts of the Hungarian banking sector to adjust their balance sheets started to have a significant impact when the export markets and export sales had stabilised. Considering that the banking sector's balance sheet adjustment got off to a late start in this current crisis, there is a serious risk that it will last longer than expected compared to any crisis situation in the past, which in turn could constitute an obstacle to steering the Hungarian economy on a growth path, even if the condition of the world economy is considered relatively favourable.

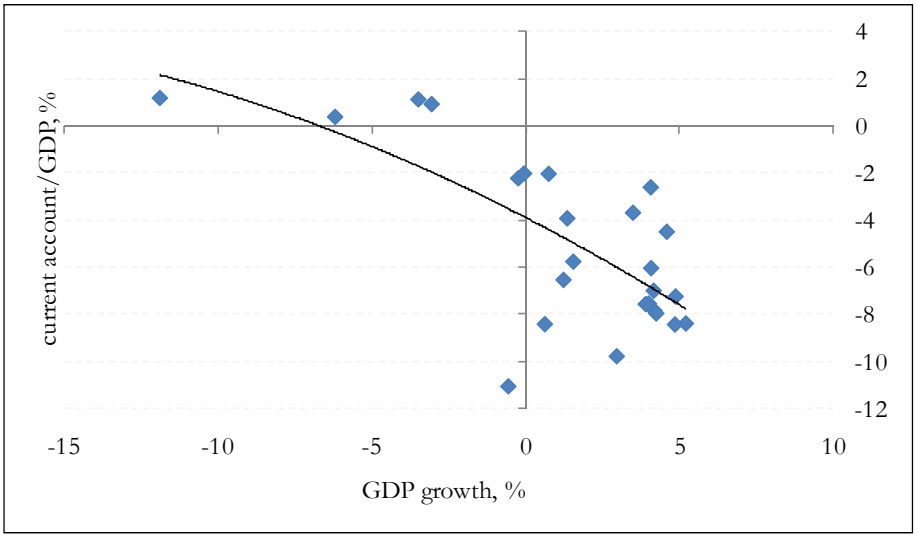
Chart 1-5 Balance sheet adjustment of the Hungarian banking sector



1. 1. 1. Can a new growth model be found?

As a direct consequence of the crisis, the external balance has improved significantly due to the central budget and in part to households, and the need for adjustments stemming from the reversal of capital flows. There is, however, a degree of uncertainty as to how much of the improvement in the balance positions will turn out to be durable. Once the requirement of adjustment induced by the crisis has passed, the economy may get back on course and return to a growth path, as suggested by experience from international financial crises.[6] Assuming, however, that the current account constraint is likely to become tougher relative to the pre-crisis period (growth is less likely to be generated from debt than was the case in the past), real convergence may lose pace if the behavioural pattern of economic agents remains unchanged.

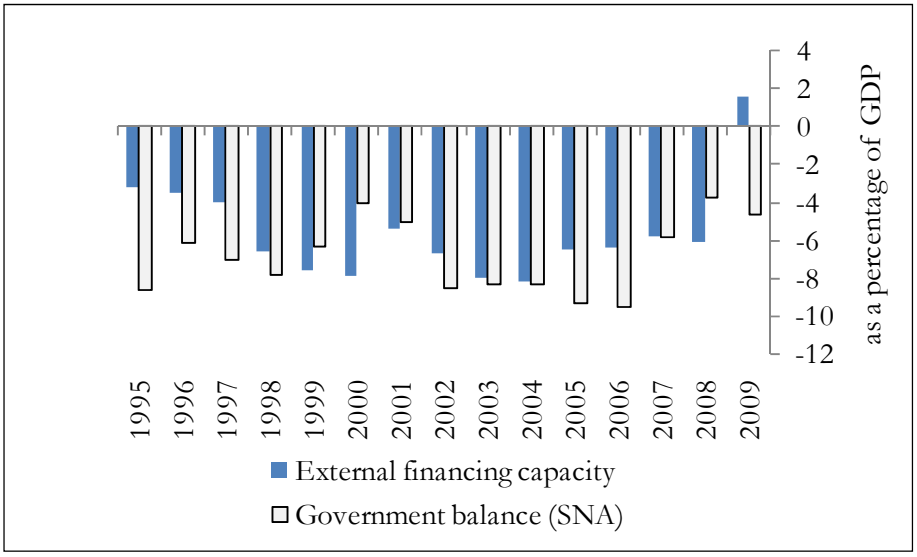
Chart 1-6 GDP growth and the current account balance in Hungary between 1985 and 2009



[6] See, for example, IMF (2009a). For a more detailed discussion, refer to the second chapter.

Chart 1-6 demonstrates that for decades acceleration of economic growth in Hungary typically occurred in tandem with deterioration in the current account balance. The relationship between the external financing requirement and the growth rate in recent decades cannot be considered as completely homogenous, as there were periods when external funds financed corporate investment, instead of the budget deficit or household indebtedness. Looking at Chart 1-7, however, it seems obvious that there was almost always a high level of government deficit behind the external deficit, and thus one can argue that the main reason behind the external deficit is loose fiscal policy.

Chart 1-7 External deficit and government balance in Hungary



The question remains as to whether the Hungarian economy can develop a new growth model, which is capable of breaking the previous trend. Because assuming that faster growth will require the increased use of internal resources, deterioration in the convergence process during the post-crisis era would not be inevitable.

At the same time, it is important to emphasise that even in an ideal case, the issue must be approached with cautious optimism. In Hungary, propensity to save has been known to be low for decades, and this is particularly true for the central budget in terms of overspending. However, if the impact generated by the fiscal adjustments introduced in the wake of the crisis remains constant as far as the structural balance is concerned, it could be beneficial in reducing the external balance deficit over the long term. The other question is the private sector's propensity to save. There is even a greater degree of uncertainty in this respect, as no one knows whether the propensity to save, following the increase seen during the crisis, will once again drop when the credit markets return to normal. This fundamentally depends on the household sector's precautionary motive, the efficiency of the corporate sector and the financial intermediation system.

According to international observations,[7] what sets successful countries apart from those considered unsuccessful is the way their institutions react to the crisis in a wider context: economies with an efficient political institutional framework have a better chance to benefit from the sobering-up period after crises. A review of experience relating to South America and Southeast Asia can also provide interesting conclusions on the subject. The last decade shows a great deal of promise for South America, where fiscal policy constituted the most important source of long-term imbalance as well, and the changes implemented in the institutional framework of economic policy proved sufficient to preserve growth and

[7] See Cavallo and Cavallo (2008).

balance. On the other hand, events in Southeast Asia have shown that in times of a deep crisis the behaviour of the private sector can change in the long term as well (see box below).[8]

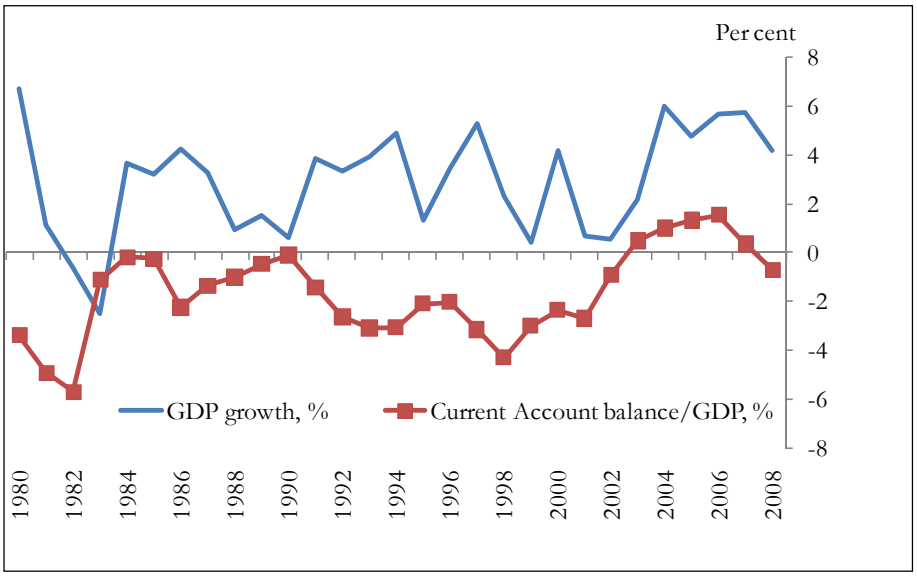
Box 1-2: How will growth patterns change after current account adjustments? Experiences in South America and Southeast Asia

As pointed out above, from the turn of the millennium until the global financial crisis, most emerging markets managed to approach the levels of developed countries, with the most obvious difference being in the allocation of internal resources as opposed to external financing for the purpose of convergence. While in the countries of Central and Eastern Europe (CEE) growth was primarily financed by external resources, the sharp increase in the growth rate in Southeast Asia and South America was accompanied by capital exports and a relatively balanced current account. In this box we argue that in these two regions rapid growth combined with a current account surplus is a relatively new development. It is unclear, however, how much these new developments in the growth pattern can be attributed to the efforts made by the countries concerned to come up with a more resilient economic strategy against sudden reversals of foreign capital flows, or to the fact that the earlier crisis left a deep impression in the private sector's behaviour.

As seen in the chart below, growth in the countries of Southeast Asia until the financial crisis in 1997, and in South America until the turn of the millennium was consistently accompanied by a current account deficit and the expansion of the deficit as the growth rate increased. Since then, however, the previous tie between growth and the external balance has been severed. Asian countries managed to reach the pre-crisis growth rates with a substantial current account surplus, whereas in the South American countries the deficit was replaced by a modest surplus.

While in the case of South America it appears relatively clear that the more disciplined fiscal and monetary policy introduced earlier – together with stricter regulatory control – paid off, in Southeast Asia it remains unclear as to how much of the change in behaviour can be attributed to economic policy and how much to the adjustment of the private sector.

Chart 1-8 GDP growth and the current account balance of payments in Southeast Asia

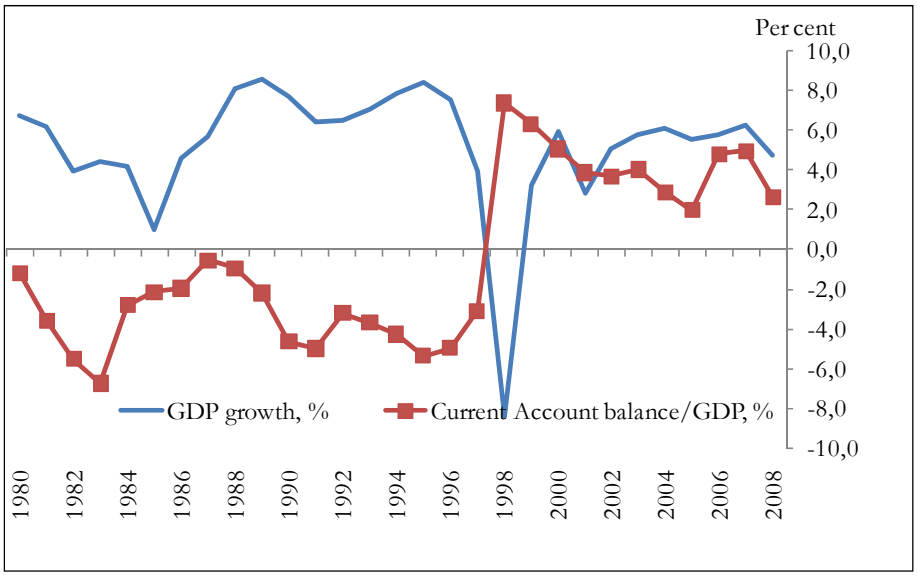


[8] At the same time, it is important to note that, as with all comparisons, the events in these two regions only apply to the Hungarian economy to a limited degree. The most important reason is that, compared to the countries mentioned above, Hungary is part of an advanced economic community, the EU, which provides a greater degree of real economic and financial integration, including an institutional framework.

South America: Stricter fiscal policy in comparison to previous decades, higher energy prices and monetary reform

As best demonstrated by the time series of South American countries, involuntary current account balance adjustments do not automatically induce changes in the growth pattern. The chart above illustrates that the current account balance had to be effectively adjusted every few years in the region over the twenty-year period between 1980 and 2000, which in turn led to the previous growth rate losing momentum and ultimately to a recession. Since 2000, however, the favourable growth path did not impair the current account balance. The chart below demonstrates that this phenomena is attributed in part to favourable developments in the terms of trade, while at the same time, we should not overlook the fact that between 2001 and 2006, the external balance and fiscal positions improved concurrently: in other words, on average, the budgetary policies adopted in the region appropriated the extra revenues generated on account of the favourable economic cycle into reserves, rather than spending. Furthermore, since 2000 many countries have introduced more flexible exchange rate mechanisms and monetary policies built around strong anti-inflationary commitments (in many cases the inflation targeting system), which allowed them to successfully anchor inflationary expectations compared to the previous decade. Moreover, most of these countries decided to reinforce their supervision systems, based on previous experience, which in turn resulted in improved prudential control over the banking sector in terms of lending operations. We should also emphasise that several countries have sterilised some of the capital inflows, effectively blocking the appreciation of exchange rates, while setting aside foreign exchange reserves for bad times. The disciplined fiscal policy and successful monetary policy allowed them to keep interest rates well below previous years' levels, on account of which the growth cycle after the turn of the millennium did not lead to the increased popularity of dollar-based loans, as witnessed earlier (IMF 2006, (Rojas-Suarez (2010)).

Chart 1-9 Central budget, current account balance of payments and terms of trade in South America*



**Average of Argentina, Brazil, Chile, Columbia, Mexico, Peru and Venezuela.*

By virtue of all these factors, in the current financial crisis it was the first time that many South American countries were able to pursue anti-cyclical fiscal and monetary policies. Due in part to the above, and in part to higher energy prices, international organisations take a more favourable view of the growth prospects for this region than that of the CEE countries (IMF 2009c).

Southeast Asia: Was it economic policy or the private sector?

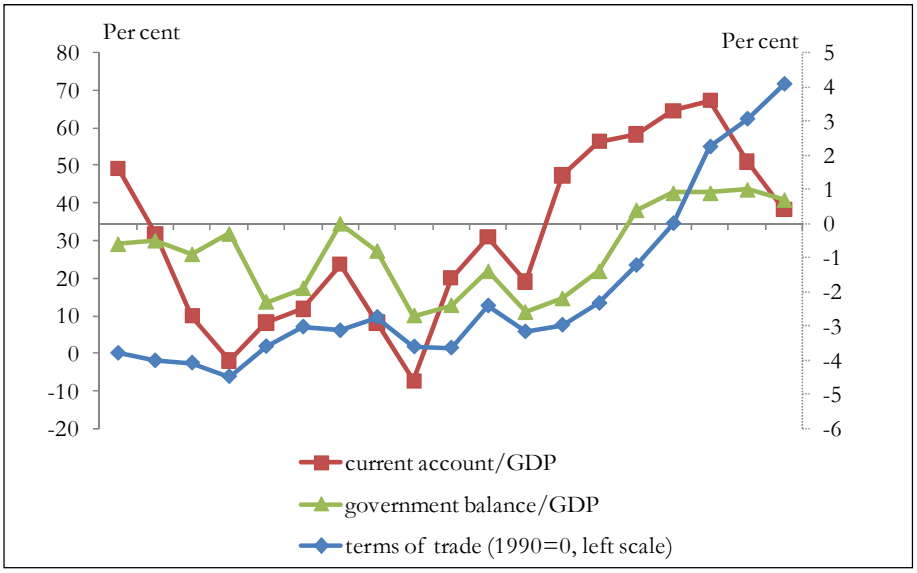
In Southeast Asian countries the crisis effectively ended a long, dynamic growth period, while the recession was severe by comparison to crisis situations seen previously. In response, the region attempted

to define an economic strategy that made this particular group of countries more resistant to fluctuations in external capital movements. This strategy had the following main components.[9] In the beginning, the countries in question moved to introduce a very cautious economic policy. Since the fiscal policy was considered prudent before the crisis – in terms of the size of the deficit at least – monetary policy had to be altered first and foremost: As an important part of the above measures, they did not permit the nominal exchange rates to appreciate, they decidedly intervened in the foreign exchange market and – with a view to avoid overheating – they introduced money market instruments and high reserve requirements to remove the intervened amounts from the interbank market. However, during the second half of the last decade, an increasing number of economies – triggered by the costs of sterilisation – decided to introduce more flexible exchange rate mechanisms (curtailing the sovereignty of monetary policy, fiscal expenses, deteriorating the banking sector's competitiveness), leading to the gradual appreciation of their currencies during the pre-crisis period. In another major move, the central banks in the region tried to enhance the stability of the financial system by way of regional cooperation, in addition to the accumulation of reserves. One such example is the so called Chiang Mei initiative, where the central banks of the region made – bilateral and then multilateral – FX-swap transactions for better protection against turbulence in the financial markets.

The other major factor was the introduction of more stringent financial regulations. The concept 'the more the better' was replaced by 'efficiency' in terms of capital accumulation (enhancement of supervisory agencies, tightening of accounting and corporate governance standards). At the same time, as pointed out in several analyses, the regulatory framework of the financial system still lags far behind that of the developed countries.

Finally, in conclusion of all of the above, it is apparent that more than 10 years after the Southeast Asian crisis there is still no clear consensus among experts as to what motivated the change in the growth model the most – the economic policy or the behaviour of market participants. What appears certain is that the reason behind the radical improvement in the current account balance was the long-term decline in investments, rather than the increase in savings (as was the case in South America). And the latter could have been induced equally by the change in economic policy and by market processes.

Chart 1-10 Government, current account balance and the terms of trade in Latin-America*



**Average of Argentina, Brazilia, Chile, Colombia, Mexico, Peru and Venezuela*

[9] Eichengreen (2007), World Bank (2007).

According to Park et al. (2009), four main explanations are offered in the relevant literature as to the decline of the investment rate: On the one hand, the causes may be related to the involuntary current account adjustments made by the debt-stricken corporate sector, further enhanced by the new, stricter financial regulations. According to yet another argument, the rapid economic growth in China has drawn investment away from the region. The third explanation blames the persistent increase in macroeconomic uncertainty stemming from the crisis (long-term shock of investors after the crisis) for the lower rate. And finally, the fourth explanation cites the constant weaknesses of the investment climate at the institutional level. The authors mentioned above conducted econometric studies to prove that the pre-crisis period could be characterised by excessive investments, whereas the level of investments since the crisis is basically in line with fundamentals. In other words, the reason behind the continuous decline in investment activity could be the new, stricter financial regulations as well as the protracted adjustment of the current account balance in the corporate sector.

1. 2. Medium-term convergence prospects

We quantified the medium-term impact of the crisis on the real economy in two segments. First, we examined the possibility of change in the growth rate of our major trading partners compared to the trends in the pre-crisis period, and secondly, we estimated how the speed of Hungary's convergence to the euro area is likely to change. As regards growth in the euro area, we relied on the calculations by international institutions which are described in chapter 2. Although these institutions have no long-term forecasts, we proceeded under the presumption that the factors pointing to potential growth at a slower pace during the next few years are likely to prevail over a longer period. This is complemented by our estimate of the change in the pace of Hungary's convergence, the extent of which is based on the past relationship between the amount of external financing and real convergence. This method is based on the estimate of the so-called growth regression.[10] This type of regression functions under the presumption – relying on growth theories – that the economic growth of a country depends (1) on its distance from the growth centre (initial GDP/capita); and (2) on structural factors that have the potential to divert the country's long-term income levels from the income levels of the convergence centre (level of education, economic openness, quality of institutions, etc.). These models complemented by the variables pertaining to the use of external financing (external balance deficit, inflow of capital) provide a picture as to the effect the current account barrier will have *ceteris paribus* on real economic convergence.

The negative relationship between the current account and real convergence may be justified by a phenomena seen in neoclassical growth theories, according to which the substantial difference in income levels between countries can be attributed primarily to the differences in the availability of capital. In this case, if the economies are open, real convergence can be accelerated through the current account deficit, for there is no need for an economy to wait for enough savings to be accumulated to achieve the level of capital availability seen in developed countries.[11]

Empirical evidence, however, contradicts many aspects of the predictions the theory offers. While the majority of emerging countries managed to catch up with the developed countries, different regions have shown a variety of growth models: while the CEE countries accumulated substantial current account deficits, the rapid growth seen in the Asian countries was accompanied by current account surpluses, i.e. capital export.[12] These trends are plainly apparent in the systematic econometric studies as well. According

[10] See, for example, Barro and Salai-Martin (2001).

[11] See Obstfeld-Rogoff (1996), chapter 7.

[12] There are numerous explanations for this phenomena. One is the accumulation of reserves due to country insurance (see previous box and IMF (2007)). Rodrick (2008), however, argues that the substantial difference in income levels between countries is attributed primarily to institutional weaknesses (compliance with contracts, etc.) and to market imperfections (educational externalities, financial market frictions) rather than to differences in the availability of capital, which tend to affect the sectors capable of engaging in foreign trade more strongly than the average. Therefore, convergence may be facilitated by

to Abiad et. al. (2007), the positive relationship between the external balance deficit and convergence was seen only in the European countries. Based on the authors' estimates we can calculate how convergence will slow down in the wake of the tighter external balance constraint introduced. Nevertheless, it is important to point out that the relationship between the current account and convergence is not necessarily of a structural nature; similar convergence paths may be accompanied by different external balance deficit paths if the propensity of the central budget and the private sector to save and the quality of the economic policy changes permanently. However, we may argue that since the authors' results are based on a model covering nearly 30 years, and it is also clear that the relationship between the balance deficit and growth in the Hungarian economy has existed for decades, these calculations are definitely considered to provide robust "no policy change" scenarios.[13]

Box 1-3: How are real convergence projections made?

As seen above, we relied on the article of Abiad at al. (2007) as regards the calculations pertaining to the Hungarian economy, that presumes a relationship concerning real convergence and the external balance deficit in respect of the European countries. The study covers the general tendencies of a 30-year period (1975 to 2004), and it demonstrates that in European countries a robust and stable relationship exists between the current account deficit and economic growth.

In respect of Abiad et. al. (2007) we examined two scenarios. In the baseline scenario we assumed that the sustainable external balance deficit of the Hungarian economy will drop to around three per cent from the close to seven per cent level of GDP, which was characteristically seen during the past 10 to 15 years. The assumed degree of adjustment appears necessary on account of the fact that on the basis of previous studies of convergence trends, an approximately four to six per cent current account deficit or (considering that the capital account balance presently stands at around two per cent due to EU funds) a two to four per cent external balance deficit seemed sustainable for Hungary.[14] Therefore, in the baseline scenario we subscribe to the opinion that after the crisis external financing will be obtained along the forecasted equilibrium path over the medium term, and only the excess seen before the crisis will be adjusted. An adjustment of this magnitude is consistent with the results from the FEER model, as shown in the previous box.

In addition, we have modelled a risk scenario as well, in which we work with the assumption that after the financial crisis the Hungarian economy – with its high external and public debt – will not be able to obtain external financing persistently, because of a more cautious approach to risks. In this scenario, we also took a more pessimistic approach as regards the potential GDP loss of the Hungarian economy during the crisis. In the baseline scenario, we work with the assumption that most of the decline the Hungarian economy sustained during the crisis is predominantly of a temporary nature, where production capacities, however idle, can be preserved and reused in production with growing demand. In the risk scenario, however, the production capacities of the economy drop in the wake of the financial crisis to a degree where the negative output gap during the 2009-2010 period represents half of that projected in the baseline scenario. In both cases we applied the macro path contained in the February 2010 report on inflation as the starting point.

Consequently, the rate by which the tighter current balance barrier slows real convergence can be quantified based on the estimates of Abiad et al (2007).

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the sectors capable of engaging in foreign trade, for example by a persistently undervalued real exchange rate. The final consequence of an economic policy of this type, however, is specifically the simultaneous presence of an external balance surplus and rapid convergence, as witnessed in the Asian countries for some time. It should be noted, however, that as convergence and financial integration progress, the possibility of manipulating the real exchange rate gradually disappears.

[13] See box for calculation details.

[14] Refer to Bussiere et. al (2004), Vamvadikis (2008), Ca' Zorzi et al. (2009).

In order to determine the growth rate of the Hungarian economy, however, assumptions on the rate of convergence before the crisis and the long-term growth rate of the euro area are also required. For a starting point, we used the growth pattern recorded for the period 2000-2007. We proceeded to calculate the average potential growth rate the economies would have been able to achieve and sustain had the financial crisis not occurred. As the table below illustrates, during the pre-crisis period the GDP growth rate in Hungary was one and a half per cent above the dynamics of the euro area. The actual difference in the growth rate was even larger because the output gap in Hungary opened wider than in the euro area.

Table 1-1 Growth and convergence between 2000 and 2007

	Hungary	Euro Area*	difference
GDP growth	3.8	1.9	1.9
Potential GDP growth	3.2	1.8	1.4
Change in output gap	0.6	0.0	0.5
* IMF 2009 WEO database October			

* Based on IMF data (2009b).

As regards euro area growth prospects, we used the IMF WEO database for October 2009. This database contains projections for potential and actual growth of the euro area up to 2014. For the period 2015-2020 we assumed that the potential growth rate is equal to the 2014 value, and zero output gap.

Based on different scenarios, the long-term growth rate of the Hungarian economy is *ceteris paribus* projected to slump to between two and two and a half per cent because of the financial crisis. In the baseline scenario, the trend rate of convergence will not be slower than what it was after the turn of the millennium, as the impact of real convergence, declining as a result of the crisis, is offset by the structural measures the Government introduced last year. In other words, we calculate that if the structural balance of the central budget remains at the level forecast in the February 2010 inflation report for 2010, it will automatically improve the current account balance, without any unfavourable growth impact.[15]

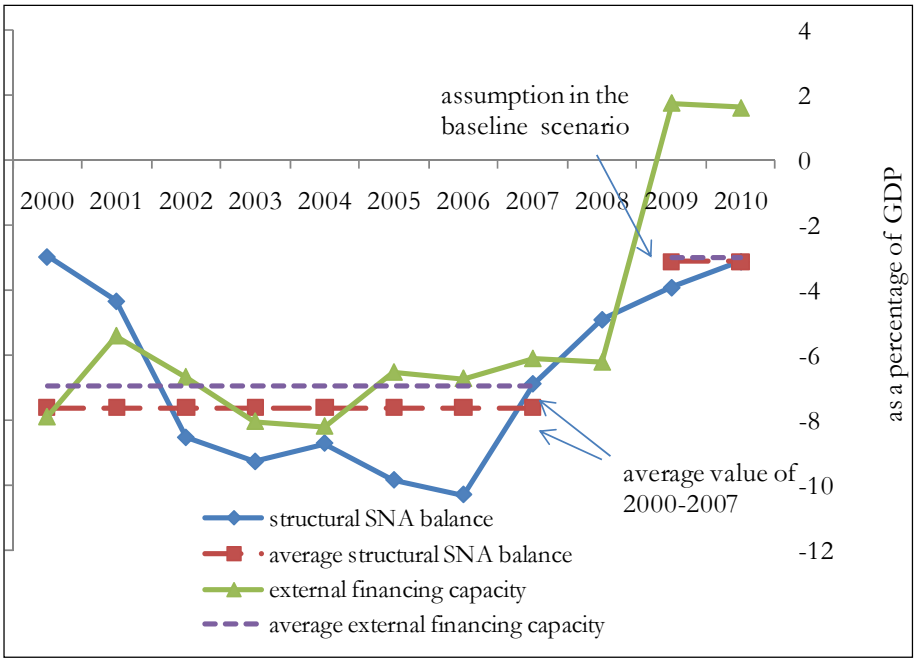
[15] The decline in the growth rate of a few decimal points occurring in tandem with the improvement in the current account balance of several percentage points may appear insignificant at first sight. This is especially true in light of the fact that, under partial regression, a one percentage point decline in the current account balance was accompanied in past decades by an average increase of over one percentage point in the growth rate. However, we may argue that the value of the Abiad et. al. (2007) approach lies in its ability to control changes in factors that tend to move in tandem with, but not stemming from changes in the external equilibrium. (initial GDP, openness of economies, different behaviour of budgetary policies, relative price of investments, etc.).

Table 1-2 Calculations for the potential growth of the Hungarian economy under differing assumptions

		Baseline scenario		Risk scenario	
		External financing requiremnt decreases permanently from 7% to 3% of GDP*		On average the external positions hould be in balance, the crisis affects potential GDP stronger, compared to the baseline scenario*	
	Euro-Area growth (1) **	Real convergence (2)	**Hungarian growth (1)+(2)**	Real convergence (3)	**Hungarian growth (1)+(3)**
pot. GDP growth before the crisis	***1,8***	1,4	**3,2**	1,4	**3,2**
medirum term effect of the crisis	***-0,6***	-0,4	**-1,0**	-0,8	**-1,4**
effect of the government package	***0,0***	0,3	**0,3**	0,3	**0,3**
pot. GDP growth after the crisis	***1,3***	1,3	**2,5**	0,9	**2,1**

* Based on Abiad et al (2007)** based on IMF (2009b)*** Average of 2000-2007

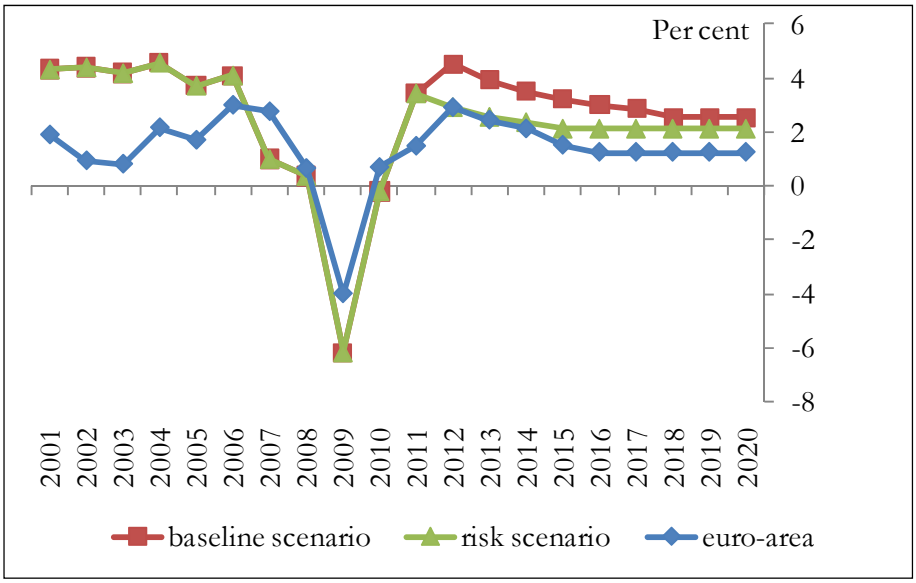
Chart 1-11 Changes in the structural balance of the central budget and in the persistent component of the current account balance in the baseline scenario



Under unfavourable conditions, however, trend convergence may slump even further from the rate observed before the crisis, to about two-thirds of what it was. In this scenario, the Hungarian economy is unable to catch up with an external deficit, that is, the private sector must significantly and continuously increase its net savings positions, which may *ceteris paribus* result in slower expansion in corporate investments and real convergence. The rate of long-term growth in Hungary could, in any case, be slower than it was before the crisis, as the growth rate of our markets is also likely to slump according to the projections of international institutions.

In the baseline scenario, the actual growth rate may in fact be higher than the one shown in trend estimates, as the negative domestic output gap is considered significant in both scenarios.

Chart 1-12 GDP growth projections



1. 3. Debt sustainability calculations

As high external and public debt represents the most vulnerable point of the Hungarian economy,[16] it appears evident to examine the sustainability of external and public debt levels along the convergence paths outlined above. This subject is addressed in detail below.

Box 1-4: Macro scenarios for debt sustainability calculations

Debt sustainability calculations have the following major parameters from the perspective of the macroeconomy: expected development of GDP, real exchange rate, real interest rates and the foreign trade and income balance, and the fiscal balance. As regards GDP projections, we applied the two macroeconomic paths described in the previous chapter. Long-term changes in the external balance are consistent with the assumptions previously demonstrated (declines to 3% and 0%), while the trade balance and income balance and the cyclicality of foreign trade (relative to the output gap and real exchange rate) originates from the elasticity obtained from the FEER model. As far as the real exchange rate is concerned, on both paths we assume that 1 per cent real convergence is accompanied by 0.8% real appreciation, which is consistent with the correlation estimated from the model of European countries, but is behind the level of flexibility seen in Hungary during the last 15 to 20 years, which was somewhat higher.[17] As far as inflation is concerned, we proceeded on the assumption that the 3% inflation target will be met each year between 2012 and 2020.

As regards yield levels, we used the forint yield curve and the CDS premium; for further details in connection these assumptions refer to the following two subchapters, along with the methodology of central budget and income balance projections.

[16] The major factors of vulnerability to which the Hungarian economy is exposed are discussed in more detail in the third chapter.

[17] The real appreciation assumed by Darvas-Szapáry (2009) is higher than what we have assumed for the next ten years. In part, the reason for the difference is that they appear more optimistic in respect of real convergence prospects and their model is fundamentally based on new EU Member States. In respect of the entire EU model, however, it is apparent that the relationship between the level of development and real exchange rate is not linear, as flexibility tends to be less at higher levels of development. Additionally, in light of the previous chapter, one might argue that the real appreciation of the new Member States before the crisis cannot be viewed as an equilibrium process, generally speaking, and it may be viewed as overheated to some extent, for that was effectively adjusted during the past one and a half year period.

The key parameters of macro paths are contained in the tables below:

Table 1-3 Macro path average key indicators between 2012 and 2020

%	**Baseline scenario**	**Risk scenario**
Hungary		
Potential GDP growth	2,5	2,1
GDP growth	3,2	2,3
population growth	-0,2	-0,2
Euro Area		
Potential GDP growth	1,3	1,3
GDP growth	1,7	1,7
population growth	0,0	0,0
Pace of real convergence	1,7	0,8
Level of real convergence in 2020 (compared to the	67	62
Pace of real appreciation	1,3	0,7
Trade balance/GDP (current price)	3,7	4,6
External balance/GDP	-3,0	0,0
*Averages of 2012-2020		

1. 3. 1. Sustainability of external indebtedness

In the wake of the financial crisis, the Hungarian economy is likely to be forced to make long-term adjustments, and hence the level of external financing requirement may drop substantially relative to the pre-crisis period. Therefore, even if the recently experienced external adjustment process turns out – to some extent – to be temporary or "overshooting", the lower financing requirement may induce a decline in the external indebtedness indicators in the future. Nevertheless, there are several factors that could prevent any rapid reduction in the level of indebtedness. On the one hand, the financing costs – which were consistently low in the past – went up as a consequence of the international financial crisis, and the countries with less favourable fundamentals can be expected to pay a higher premium on their external loans. On the other hand, the adjustment that will have to be made in response to the narrowed channels for external financing is likely to impede growth. Moreover, slow real convergence is likely to withhold real appreciation as well. On the whole, the above factors tend to forecast that our "legacy", meaning the burden of indebtedness, is likely to generally increase the debt rate in the future.

From the perspective of sustainability, the examination of external indebtedness is ineffective in itself. As revealed by recent studies, non-debt-creating liabilities, i.e. financing provided in the form of working capital and for purchasing shares, are not considered solid forms of financing either,[18] i.e. in the case of a crisis the roll over risk applies to these types of funds as well. Moreover, where the level of development is higher, the role of these types of non-debt-creating liabilities in financing is typically weaker. Thus, as real convergence progresses, the expansion of debt-type resources is looked upon as a natural process. In the event of a modified financing structure, debts may decline at a slower pace compared to the falling level of external liabilities.

In the following we briefly analyse the processes playing a major role in the past dynamics of debt and liabilities. We will then simulate – in the two adjustment scenarios previously demonstrated – projections of external debt and liabilities relative to GDP until 2020.

[18] For more on the benefits and disadvantages of non-debt forms of financing, see Komáromi (2008).

Changes in the debt ratio are attributed to four different reasons: first, the given period is considered primary, that is, the financing requirement less the interest charged on the debt, and second, the charges on debts accumulated previously, that is, interest expenses or revaluation, and finally GDP growth and changes in methodology. The trend-like increase in the rate of external indebtedness during the pre-crisis period can be attributed to the consistently high level of the financing requirement and the moderate role of net direct capital and share investments in financing in general. Other factors which may have an impact on the debt ratio – beyond statistical reclassification[19] – i.e. the combined effect of real interest rates, changes in the real exchange rate and real growth, the so-called dynamic component have typically forced the rate of external indebtedness down in recent years. This development resulted from the fact that real interest rate charges had been more than offset by the impact of real appreciation and real growth as to reduce the debt ratio.

Looking ahead, in both scenarios we expect a reduction in net external indebtedness and liabilities. In our simulations we relied on the external balance forecast contained in the February inflation report for the period 2010–2011, while for the long run we used the macroeconomic scenario shown in Table 1-3. Accordingly, in the baseline scenario we proceeded on the assumption that the current account deficit will drop to a little over half of what it was before the crisis. In the risk scenario, the involuntary adjustment is even stronger and the current account balance tolerated by the market is close to equilibrium. In both cases, real growth and the appreciation of the real exchange rate remained lower than the rates seen before the crisis.[20]

In the paths under review, the rate of external indebtedness drops rapidly in the beginning, but on the simulation horizon it does not fall below 30 per cent of the GDP in either case *(Chart 1-13)*. Therefore, the analyses suggest that over the medium-term Hungary will be part of the group of countries with a high rate of indebtedness, in spite of any stricter rules introduced in connection with external financing barriers.

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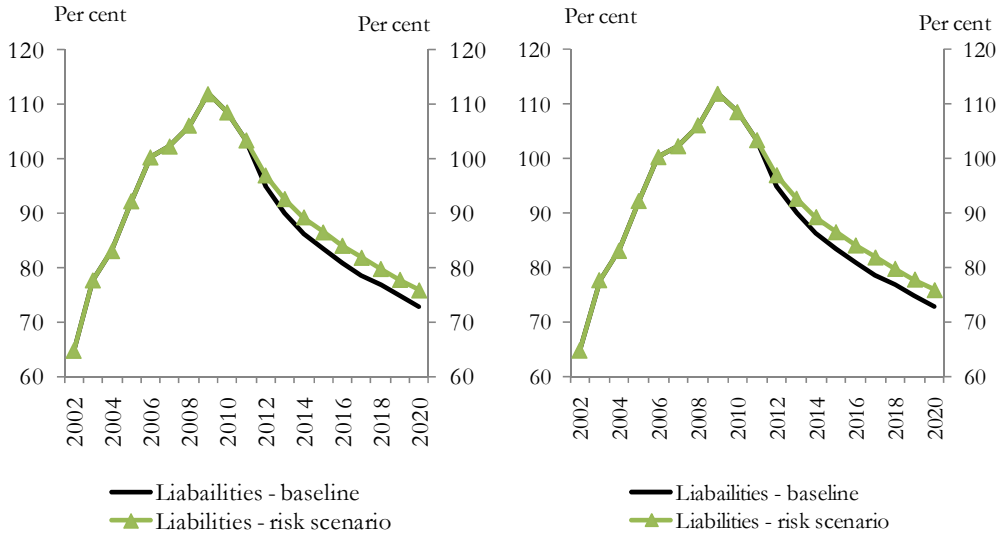
[19] In 2008, net external indebtedness increased by close to 5 percentage points because from the first quarter of 2008 all intercompany loans are accounted as direct investment instead of only loans from parent companies. As intercompany loans extended by resident companies to abroad boosted their intercompany debt, external debt increased.

[20] In the simulations, we applied the following assumptions:

- In the case of EU transfers, we project a net inflow of 3 per cent relative to GDP over the long term.
- In quantifying the costs of external financing, we rely on the forint curve of 19 March 2010 and on the forward interest rate paths derived from the zero coupon yield curve of the securities market for AAA-rated government paper.
- In the case of foreign exchange loan costs, in the risk path we project a long-term premium of around 200 basis points, consistent with the CDS premium seen during the first quarter of 2010, while for the baseline scenario we expect the premium to drop to half of that by 2020.
- As for the net income balance of foreign workers, we project a level of 0.9 per cent relative to GDP concerning the years before the crisis.
- In the case of net FDI and share debts, we predict that the related income payments will settle at a level of 9.2 per cent, relative to net funds, representing the average of the years before the crisis.
- From the perspective of debt dynamics, our projection for the financing structure is conclusive. In both scenarios, we assume that the net inflow of non-debt-creating funds in the upcoming years will be around zero. This basically means that the working capital and share investments made by Hungarian investors abroad will correspond in volume to the inflows of similar funds. Therefore, in the baseline scenario and in the risk path we do not expect non-debt-creating liabilities to play a smaller role in external financing in connection with the convergence process. At the same time, however, we examined the dynamics of external debt and liabilities in the event that the convergence process was to take place in the financing structure in the baseline scenario (see box text).

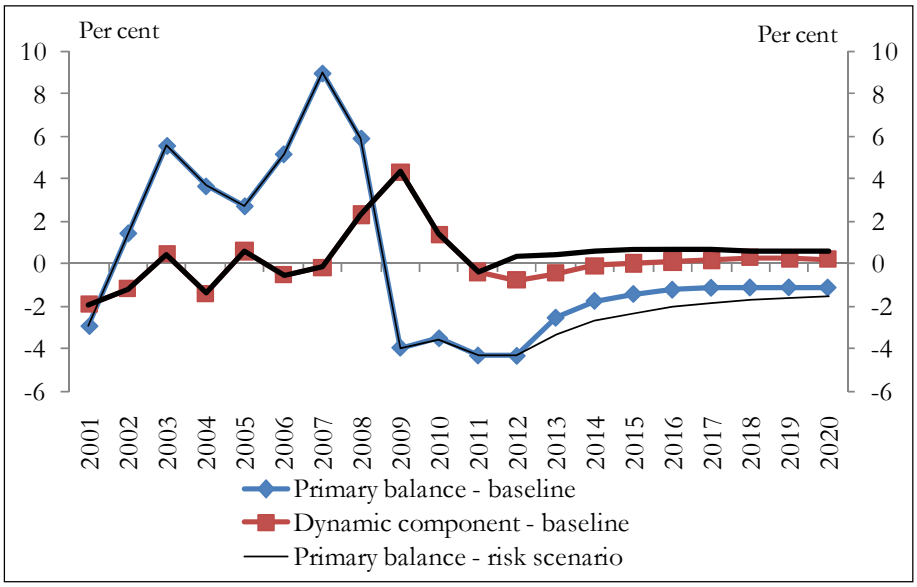
Chart 1-13 Dynamics of net external debt and liabilities on both paths



The primary financing requirement applies in our simulation toward the reduction of the debt ratio. However, such reduction is effectively impeded by the fact that slow real growth and real exchange rate appreciation is unable to offset the interest payments charged on the debt accumulated previously. Hence, the dynamic component increases the debt ratio on the whole.

The external indebtedness dynamics shown in both paths are practically identical, resulting from contrasting impacts. In the baseline scenario, the primary balance has a lesser impact in cutting the debt ratio due to the higher external financing requirement, as opposed to the scenario where external adjustment is apparently greater. Faster real growth, the related appreciation of the real exchange rate and the presumed reduction of the premium, however, is less likely to increase the debt ratio in the baseline scenario through the dynamic component.

Chart 1-14 Factors for changes in the debt ratio in both scenarios (in percentage of GDP)



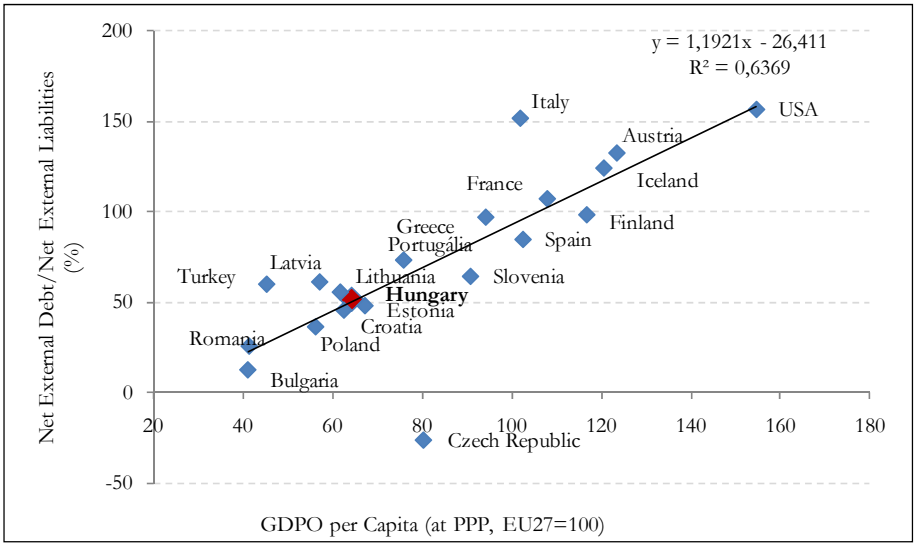
As regards net external liabilities, the conclusions are similar to what is described above. Although the rate of external liabilities declines faster than the debt ratio, the dynamic component is able to neutralise the impact from the positive primary financing balance for the most part, since the cost of net external liabilities surpasses the real growth rate, taking into consideration the impact of real appreciation as well.

At the same time, in the baseline scenario, owing to the more favourable growth path, net external liabilities drop by close to 3 percentage points relative to GDP. The level of external liabilities of around 74 per cent, as quantified on the 10 year horizon, is still considered high by international comparison.

Box 1-5: Convergence in the structure of external financing inflow

Experience related to previous years suggests that the role of net non-debt-creating liabilities in financing has declined steadily. Since 2003 the intensive foreign direct investment made by domestic corporations, and then the increasing investments made by institutional investors in foreign securities contributed to the reduction of financing in the form of net non-debt-creating financing. On the other hand, upon conclusion of the privatisation process, the ratio of direct capital investments dropped even within gross external debt. The "financing convergence" seen in recent years is a natural process. In the case of countries where income is higher, the ratio of debt-type financing to total liabilities is greater. Therefore, over the long run the financing structure is expected to change in Hungary as well, especially if the cost of the country's debt-creating external financing is effectively decreasing in the future.

Chart 1-15 Relationship between economic development and the ratio of debt-type financing (2008)

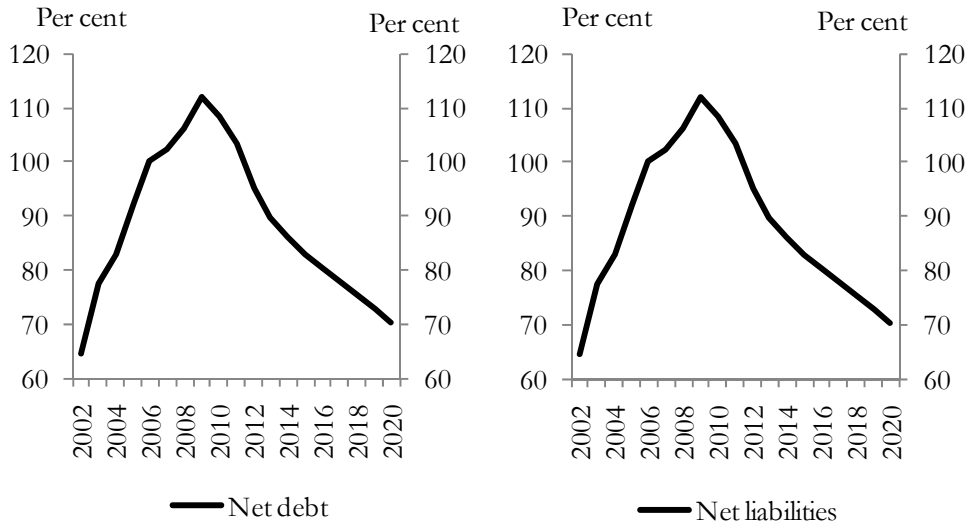


Sources: Eurostat, IFS, MNB calculation.

According to international observations, however, the transformation of the financing structure did not take place evenly. In the scenarios illustrated above, we did not predict changes in the structure of liabilities. In the baseline scenario, however, we have quantified another path where the transformation of the financing structure is implemented progressively, but it fails to approach the level justified by the convergence process by the end of the period.[21] Consequently, in our simulations we predict a substantial outflow of FDI and equity investments.

[21] In our simulation, the ratio of debt-type financing relative to total net external liabilities rose to 55 per cent, i.e. about 5 percentage points lower than the level justified by presumed real convergence.

Chart 1-16 Debt and liability indices following transformation of the financing structure



In the scenario under review, the net external indebtedness – after the initial dynamic reduction – stabilised by approximately 10 percentage points relative to GDP above previous levels. The higher debt ratio results from changes in the external financing structure. At the same time, net external liabilities fall a little below the level seen in previous scenarios by the end of the period. This is attributed to the fact that the interest charged on debt is usually lower than the costs of FDI and share-type liabilities, or lower than the return commonly earned through such instruments. In other words, this situation reflects the impact generated by domestic corporations through their direct capital investments abroad, specifically that they tend to reduce the income balance deficit in the long term and consequently to diminish sustainability risks through this channel.[22]

1. 3. 2. Fiscal sustainability

Fiscal developments in the past years

On account of the high deficit, fiscal policy had to be continuously adjusted over the last four years; as a result, anti-cyclical policy was not a feasible option when the crisis broke out. In Hungary, public debt was rising even before the crisis started. The reason for this was the extraordinarily high ESA deficit in 2006, and even though this was reduced by more than 5 per cent by 2010, the debt grew even higher. As for the reduction of the deficit, let us separate the impact of temporary factors (economic cycle, quasi-fiscal items), which account for 2.5 per cent of the deficit, from the improvement in the structural position, on account of which the deficit was reduced by 7.5 per cent.

Box 1-6: How to calculate the structural primary balance?

We used the augmented, cyclically-adjusted SNA type primary balance to approximate the structural primary balance. The cyclical adjustment method is designed to isolate the temporary impact of cyclical fluctuations of tax bases on revenues, since tax revenues tend to follow the trend of key tax bases (consumption, wages, profits) over the medium term (assuming no changes in tax rates).

As regards primary expenditures, the structural deficit method differentiates between temporary and permanent items. For this reason, temporarily outsourced quasi-fiscal expenditures are also included in

[22] It is important to emphasise, however, that we do not expect the financing structure to have any impact on the production potential of the economy.

primary expenditures, as they are decided at the government level as well and are eventually appear in the official deficit and debt figure over the medium term. If we were to disregard this, the initial level of expenditure – and hence the whole deficit and debt path – would be distorted. Accordingly, in the augmented (SNA) deficit approach the expenditures are augmented with the quasi-fiscal losses of MÁV and BKV and with PPP projects. However, with a view to consistency, we used the "financing" side of these operations to reduce the level of expenditure, for example, subsequent debt consolidation and amortisation payments included in the availability fee of PPP contracts. On the other hand, it appears overly simplified that the structural deficit method is based on the assumption that the neutral growth rate of permanent spending is equal to the pace of potential economic growth, thus the impact of ageing or measures whose effects will take some time to emerge (e.g. changes in the pension system) cannot be projected. While these effects will not be substantial during the next few years, they may nevertheless be significant over a ten-year horizon. Moreover, it is important to emphasise that the structural deficit method applies as temporary those creative accounting measures, where expenditures are outsourced from the government which, however, will subsequently appear in the official deficit and debt figure. On the other hand, measures to cut expenditures in an effective way are all treated as "permanent", independent of the fact that some of them cannot be sustained for any extended period of time *(See box 5–8).*

On the basis of the development of temporary and permanent factors, the period between 2006 and 2010 can be divided into two periods. Between 2006 and 2008 the deficit was determined in principle by the measures implemented; the interest balance remained unchanged, the favourable developments in the economic cycle, however, helped to moderately reduce the deficit. The majority of these measures can be seen as permanent measures, intended to improve the structural primary balance (see table below, changes in row 7), while the size of quasi-fiscal items (row 2) hardly changed. These measures were included a reversal of previous tax cuts, cuts in administrative costs and investment expenditures, and by the reduction of funds allocated to healthcare. As for the latter measures, which are presently labelled "permanent", it remains unclear whether they can be maintained over the medium term. Its is important to note however, that partly because the adjustments implemented during the period have also decreased potential economic growth,[23] partly because the financial crisis changed the world economic outlook completely, government debt sustainability was not ensured even in 2008.[24]

As a consequence of crisis, in 2009–2010 the negative budgetary impact of the economic cycle turned out to be the dominating factor, pushed even further by the deterioration in the interest balance. This was the time when the second wave of adjustments had been implemented, containing structural measures designed specifically to enhance long-term sustainability and economic growth. The package also contained measures for tax restructuring designed to enhance employment (Kátay et al. (2009)), and – on the expenditure side – for changes in the pension and social welfare systems. The impact of these latter measures will appear gradually, but is not captured in the structural deficit, unfortunately. Nevertheless, changes in the structural balance indicate that the decreasing expenditures in the period 2009–2010 are considered partly temporary, as the impact of quasi-fiscal items (PPP projects, MNB profit/loss) is increasing.

[23] See e.g. Chapter 6 of Analysis of the Convergence Process, 2008.

[24] See Box 4-1 in the May 2009 Inflation Report.

Table 1-4 Components of government deficit between 2006-2010*

	2006	2007	2008	2009	2010
	actual				forecast**
1. ESA balance	***-9,3***	***-5,5***	***-3,8***	***-4,0***	***-4,0***
2. Temporary, augmenting factors	-0,2	-0,4	0,0	-0,7	-1,2
3. Augmented (SNA) balance	-9,5	-5,8	-3,8	-4,7	-5,2
4. Cyclical component	0,7	1,0	1,1	-0,8	-2,2
5. Cyclically adjusted SNA balance	-10,3	-6,9	-4,9	-3,9	-3,0
6. Net interest expenditure (+MNB proft/loss)	-3,8	-3,7	-3,8	-3,6	-4,2
7. Structural (SNA) primary balance	***-6,5***	***-3,1***	***-1,1***	***-0,3***	***1,2***

*As a percentage of GDP, February Inflation Riport

Medium-term fiscal outlook and debt sustainability

As economic growth is considered moderate in the medium term and because of the unfavourable financing environment, strict fiscal policy is required. For the assessment of fiscal sustainability, changes in the dynamics of public debt need to be examined. Public debt dynamics are, in part, determined by our assumptions regarding economic growth, yields and exchange rate appreciation, as we have discussed previously. Another key factor of debt developments is fiscal policy which may introduce measures to improve the primary balance of government.

According to calculations (see table 1-5), between 2001 and 2007 a primary deficit of 1 per cent would have been enough to stabilise the level of debt, whereas in 2008–2010 it was not possible to achieve a debt-stabilising primary balance during the crisis, since an extremely high primary surplus would have been required. If the debt level cannot be increased after 2011, the initial position in 2010 shall be used to determine the magnitude of the primary balance that fiscal policy is required to provide under the prevailing macroeconomic conditions in order to stabilise the level public debt. According to the baseline scenario, between 2011 and 2020 the growth rate and yields are projected to approach the average before the crisis, but will remain less favourable permanently. Therefore, the primary position should be close to balance in order to stabilise the level of public debt. However, under the risk scenario a primary surplus of 0.9 per cent is required to prevent any further increase in debt.

Table 1-5: Impact of growth, yield and exchange rates on public debt*

	2001-2007	2008-2010	2011-2020	
%	**actual**	**actual and forecast**	**baseline scenario**	**risk scenario**
GDP growth	3,7	-1,9	3,2	2,3
Real interest rate	3,2	3,6	4,2	4,6
Real appreciation	3,7	-0,1	1,3	0,6
Public debt at the start of the period (ESA)	52	72,9	78,2	78,2
of which: Foreign currency denominated debt	*15,9*	*29,1*	*33,1*	*33,1*
Debt-stabilizing primary ESA balance	**-0,9**	**3,9**	**-0,2**	**0,9**
Debt-stabilizing primary SNA balance	**-0,9**	**4,0**	**-0,1**	**1,0**
Primary SNA balance	**-3,7**	**-0,5**	**0,7**	**-0,2**

*The real interest rate is a weighted average of domestic and foreign real rates. The realized interest rate burden is approximately 90% of the yields, presented here, as the government obtains interest income around 10% of interest rate expenditure from debt management. The primary SNA balance does not contain the accomplisment of the MNB. Based on the yield curve and the exchange rate assumption, in the projection the MNB has an accomplishment around 0.2% of GDP.

In the baseline scenario, the cyclical recovery in tax revenues should have been enough to reduce public debt without any further measures; however, a 0.9 per cent adjustment is required in order to achieve the 3 per cent ESA deficit in 2011. If the primary position required for stabilising public debt is available, the next question is whether the cyclical recovery in tax revenues will be sufficient to accomplish that goal. As a consequence of the economic crisis, however, any future trend in tax revenues is just as uncertain as the pace of recovery. More specifically, this issue is how many years will be required. In our calculations we assumed that from 2011, the primary structural balance of the central budget of 2010 will prevail permanently, in which case the actual primary balance is likely to improve consistently with the closing of the output gap.

In the baseline scenario, the negative cyclical component of over 2 per cent (a gap in tax revenues) will gradually diminish by 2016. After 2017, the primary surplus will stabilise at the 1.2 per cent (structural) level. (Chart 1–17) This level is higher than the primary balance requirement shown in Table 1–5, and hence the level of public debt decreases considerably in the baseline scenario.

In the risk scenario, the economic downturn is seen as less temporary (cyclical), and therefore the convergence of tax revenues – which is likely to take several years – will have a limited impact in improving the primary balance, i.e. it is likely to result in only a 0.2 per cent primary deficit on a ten-year average. This would also mean that an adjustment of 1.1 per cent is required in order to achieve the 0.9 per cent primary balance shown in Table 1–5 for debt stabilisation.

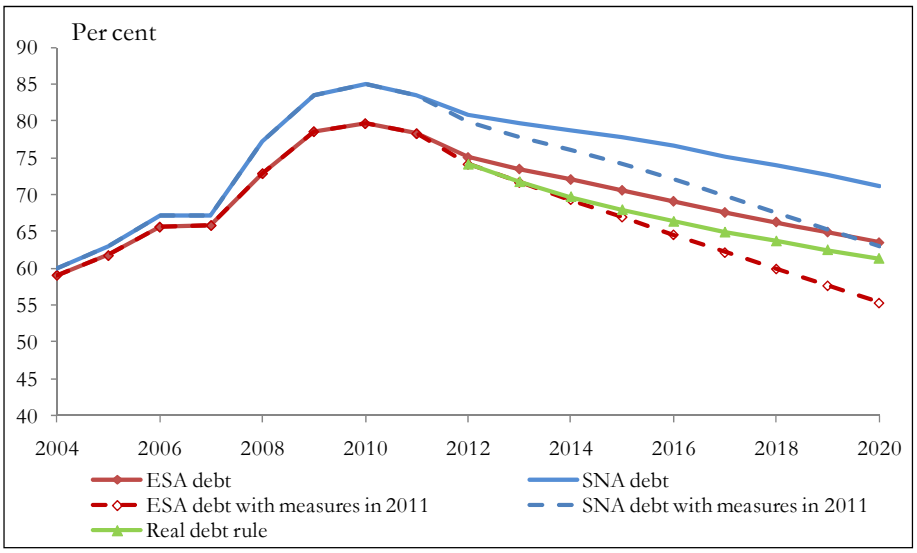
Based on past experience, the actual debt ratio will be between the ESA and SNA paths, depending on when the government decides to include the quasi-fiscal items that have been shown outside the public finance system in the official statistics. Ultimately, the Maastricht debt path will be significant influenced the timing of quasi-fiscal debt consolidation. Since we still do not know in which years debt consolidation will be implemented, the Maastricht debt path is shown separately, as well as the debt developments augmented by quasi-fiscal (PPP projects, MÁV, BKV, Malév) debts consistent with the structural primary balance. Due to the differences in methodology, we used two different ways to approach the deficit as well, for we have quantified both the ESA and the augmented (SNA) deficit.[25]

In connection with this neutral path, however, the fact that the ESA deficit will not drop below the 3 per cent Maastricht criterion in 2011 constitutes a problem. However, according to the excessive deficit procedure currently in progress, Hungary is to meet that criteria by next year, and to that effect a 0.9 per

[25] For quasi-fiscal items falling between the ESA and the augmented SNA categories, we used the 2009–2010 level until 2020.

cent adjustment is required relative to GDP.[26] As of 2011, the budget must be in compliance with the target of the "endogenous items", and from 2012 the level of public debt – without local governments – is not allowed to rise in real terms (real debt rule). To this end, after 2012 the minimum primary surplus allocated for the central budget must be sufficient to ensure compliance with the above.[27] Under the neutral path this could not be accomplished; if, however, the 0.9 adjustment of the deficit remains after 2011, it will also ensure compliance with the real debt rule, moreover, after 2015 it will also be permitted to include the quasi-fiscal debt to some extent.

Chart 1-17 ESA and the augmented (SNA) debt path with and without adjustments, and debt path under the real debt rule



Box 1-7: Debt stabilisation by international comparison

As seen above, in Hungary the debt level would roughly return to its original level on a ten-year horizon without any further adjustments. Similar simulations have been published in relation to other countries as well (Cecchetti et al, 2010). These simulations included calculations on 10-year and 20-year horizons for the magnitude of adjustments required for some countries to return to their original debt level in 2007. Comparison is made difficult by the fact that the structural deficit method is different from the one applied in our simulation, as well as the projection of the demographic impact.

The 12 countries under review can be divided into four main categories based on the impairment of their initial debt level and the deterioration of their structural balance between 2007 and 2010.

[26] One possible direction is based on the comparison of expenditures at the regional level (P. Kiss-Szemere, 2009), specifically, in respect of common public administration expenditures Hungary exceeds the average level in the region by 1.3 per cent relative to GDP.

[27] For 2012 the primary balance target has already been fixed. A similar slippage from this target is indicated by the forecast of the Fiscal Council (Fiscal Council, 2010) and our neutral path. Our debt paths can be compared with the requirements of the real debt rule from 2013 onwards. The primary balance target, however, is based on the cash-based deficit adjusted by the PPP projects launched after 2010 and by the profits or losses of public companies with a one-year delay, rather than on the ESA deficit. From a methodological perspective, it stands closer to the augmented (SNA) deficit, where the cash-based deficit is consistently adjusted for PPP projects and the financing requirement of a few selected companies (e.g. MÁV, BKV) for the given year. Because of this similarity, we attempted to estimate the indicator defined in the fiscal rule adjusting the augmented (SNA) indicator with the impact of the differences.

Table 1-6: Groups of countries according to initial international debt level*

initial debt	country	loosening as a percentage of GDP (2007-2010)	percentage point tightening/GDP required to reach initial debt in 10 years
low	United Kingdom, Spain, Ireland	6-8	6,12
average	Austria	2	4
	France, Germany, the Netherlands, Portugal	3	5-8
	United States	6	10
high	Greece, Japan	2 1/2 and 5	5 and 14
	Italy	1/2	1

* According to Table 1 and 3 of Cechetti et. al. (2010)

The situation of Hungary can be comparable only to Italy, since we belong to the group of high-debt countries (compared to our per capita income) as there was no room for loosening by anti-cyclical measures. As a consequence of the high initial deficit, between 2007 and 2010 the structural balance had to be adjusted in Hungary by more than 4 per cent; however, this way the initial level of public debt of 2007 may be reached over a period of ten year without further adjustments.

As we can see, in the neutral path calculated on the basis of the structural deficit method, the reason behind the improvement in the primary balance after 2011 is that tax revenues are set to gradually reach their post-crisis level. As a consequence of this method, this path could be distorted in two directions, as it fails to show the impact of any gradual savings in expenditure already determined and the impact of spending cuts that cannot be sustained for a longer period. According to Box 1-8, the impact of these two factors mutually offset each other, and hence the resulting path is minimally distorted at the most.

Box 1-8: Deficit path with and without adjustments

As regards our neutral path, we have increased the total of the primary expenditures in real terms by the rate of potential growth. It may prove useful to clarify this assumption, as the future development of certain primary expenditures is defined by determinations. For example, following the structural measures adopted in recent years (new indexation, abolition of the 13th month pension) the annual level of pension expenditures will be reduced by 2.2 per cent relative to GDP until 2020, that will *ceteris paribus* reduce the debt ratio by close to 10 percentage points by the end of the period. At the same time, also taking into consideration the spending cuts that cannot be sustained (investments, healthcare), the savings in pension payments should be used for the restructuring of expenditures. On the one hand, our level of investment is not necessarily sufficient, as the structure of fixed capital formation is not feasible (low level of healthcare, environmental protection, energy, etc.). In light of the EU funds, the level of gross investments cannot be considered low, still the self-financed (net) investments are not even enough to cover depreciation. If we were to apply the EU funds as additional funds to address the problems with the structure of fixed capital, the level of own expenditure would have to be increased by 0.6 per cent relative to GDP just to offset depreciation. On the other hand, looking at current expenditures at the regional level, it is apparent that the level of healthcare expenditures remains at 1.7 per cent, relative to GDP, below the average level even after the adjustments made for the purpose of international comparison (P. Kiss-Szemere (2009) and the different share of private financing. (Additional spending is justifiable on the basis of our health-care indicators, but their size can not be determined. Regional comparison, however, show the average spending which can be financed.) Consequently, investment and healthcare expenditures

should be increased by 2.3 per cent relative to GDP in total, which – if carried out progressively over a period of ten years – could deplete the savings obtained from the pension system. (In this way the structure of our spending could be closer to the regional average, e.g. those differences would diminish, that elderly people receive less pensions but more healthcare service in the region.) In this context, the primary expenditure increased by the potential growth rate should be sufficient for the structural reorganisation; in other words, the path now considered "neutral" could provide a realistic framework as well.

References

Abiad, A. – Leigh, D.– Mody, A. (2009) "International Finance and Income Convergence: Europe is Different" IMF WP 07/64

Barro, R. – Sala-i-Martin, X. (2001) "Economic Growth" The MIT Press, third printing

Bussière, M – Fratzscher, M. – Müller, G. J. (2004) "Current account dynamics in OECD and EU acceding countries - an intertemporal approach", Working Paper Series 311, European Central Bank

Cavalerro, A – Cavalerro, E (2008) "Are Crises Good for Long-Term Growth? The Role of Political Institutions" Inter-American Development Bank Working Paper 643

Ca' Zorzi, M. – Chudik, A: - Dieppe, A: (2009) "Current account benchmarks for central and eastern Europe - a desperate search?", Working Paper Series 995, European Central Bank

Cecchetti, S. G.- M. S. Mohanty - F. Zampolli, (2010) "The future of public debt: prospects and implications" BIS working paper no. 300

Darvas, Zs.-Simon, A. (1999) "Tőkeállomány, megtakarítás és gazdasági növekedés" Közgazdasági Szemle, XLVI. évf., 1999. szeptember (749–771. o.) ("Capital stock, savings and economic growth" Economic Review, vol. 46., September 1999, pp. 749–771))

Darvas, Zs.-Szapáry, Gy. (2009) „Árszínvonal-konvergencia az új EU tagországokban: egy panel-regressziós modell eredményei" MTA Műhelytanulmányok 2009/6. ("Price convergence in the new EU Member States: results of a panel regression model" MTA Working Papers 2009/6)

De Gregorio, J. - Lee, J.-W. (2004) "Growth and Adjustment in East Asia and Latin America" ADB Institute Research Paper No. 54

Easterly, W. (2005) "National Policies and Economic Growth: A Reappraisal in *Handbook of Economic Growth*, Volume 1A. Edited by Philippe Aghion and Steven N. Durlauf, Elsevier

Eichengreen, B. (2007) "The East Asian Crisis after Ten Years" Keynote Address to the Claremont-Bologna-Singapore Center for Applied and Policy Economics International Economic Policy Forum on "Capital Flows, Financial Markets and Economic Integration in Asia", July 31

IMF(2006) "Regional Economic Outlook: Western Hemisphere" Nov.

Becker, T.-Jeanne, O.-Mauro, P.-Ostry, J.-Ranceire, R. (2007) "Country Insurance: The Role of Domestic Policies" IMF Occasional Paper 254

IMF (2009a) "World Economic Outlook" April, Ch3: From Recession to Recovery: How Soon and How Strong?

IMF (2009b) "World Economic Outlook" October

IMF(2009c) "Regional Economic Outlook: Western Hemisphere, Stronger Fundamentals Pay-off" May*

IMF (2010) "World Economic Outlook" January Update

Kátay Gábor (ed.) (2009): Az alacsony aktivitás és foglalkoztatottság okai és következményei Magyarországon MT 79. (Reasons and consequences of the low rate of activity and employment in Hungary MT 79.)

P. Kiss G. - Szemere R., (2009) "Almát körtével? Mérlegen a visegrádi országok állami kiadása" MNB-szemle 2010. május ("Apples with pears? Government expenditures in the Visegrád countries" MNB Bulletin, May 2010)

Kovács, M. A. (2010) "Reálárfolyam és külső egyensúly fenntarthatóság", Kézirat ("Real exchange rate and external balance sustainability", manuscript)

Komáromi (2008) "The structure of external liabilities: Do we have to be afraid of debt financing?"MNB-Szemle, April, 2008

Mody, A. – Orshone, F (2007) "Can Domestic Policies affect Inflation?" IMF Working Paper 257

Obstfeld, M.-Kenneth, R. (1996) "Foundations of International Macroeconomics" MIT Press

Park, Y. – Lee, J-W. (2001) "Recovery and Sustainability in East Asia" NBER Working Paper 8373

Park, D. – Shin, K. JongWanich, J. (2009) "The Decline of Investment in East Asia since the Asian Financial Crisis: An Overview and Empirical Examination" ADB Working Paper Series, No. 187
Reindhardt, C. – Rogoff, K. (2010) "Growth in a Time of Debt" NBER Working Paper 15639
Rodrick, D. (2008) "Real Exchange Rate and Economic Growth" Harvard University, October
Rojas-Suarez, L. (2010) "The International Financial Crisis: Eight Lessons for and from Latin America" Center for Global Development, Working Paper 202, January
Vamvakidis, A: (2008) "Convergence in Emerging Europe: Sustainability and Vulnerabilities", IMF Working Papers 08/181, International Monetary Fund
Williamson, J. (1994) "Estimating Equilibrium Exchange Rates" Institute for International Economics, Washington D.C.
World Bank (2007) "Ten Years after the Crisis", April

2. Changes in the global economic framework on account of the financial crisis

The global economic and financial crisis started in 2007 and measures up the great depression of 1929-33. The long boom before the crisis ensured a solid economic environment that was characterised by unusually far-reaching financial imbalances and led to imbalances in the real economy as well within the major regions of the global economy, and between the regions. Imbalances could not have reached such proportions without the help of the financial sector.

The crisis shed light on the unsustainable nature of previous economic trends, but the extent and the ways of adjusting remain unknown. Stemming from the crisis, the growth models based on external financing required higher-than-average corrections. Of the emerging countries, this is what happened in the Central-Eastern European region as well, where growth was based on a massive build-up in external financing that eventually made the region vulnerable to changes in the investment climate. Long-term prospects related to vulnerability carry a degree of uncertainty, however, in the post-crisis period higher risk aversion is likely, on account of which the volume of external financing is expected to drop in comparison to recent years. Unwinding the global imbalances from before the crisis appears necessary for any sustainable economic growth, otherwise the tensions seen during the pre-crisis period may return to impede the growth outlook.

Triggered by the crisis, economic output declined considerably everywhere, and will likely to remain subdued in the foreseeable future compared to the dynamic growth seen previously. According to previous experience in crisis situations, after a financial crisis, or after a synchronised recession (where adjustments are required in several countries simultaneously) the growth rate is likely to remain restrained for several years.

2. 1. The "great moderation"

The period before the crisis represented the longest boom after the Second World War in most parts around the globe. Starting from the 1980s the developed countries gradually managed to achieve price stability, while growth was also better balanced (Chart 2-1) compared to previous decades (Stock–Watson, 2003). Macroeconomic performance improved perceivably in less developed regions as well (Chart 2-2). This was helped by the coincidence of different factors. Price stability, as the primary objective of any monetary policy, was accepted, fiscal policies became more disciplined, and developing countries with cheap labour force were integrated into global trade.[28]

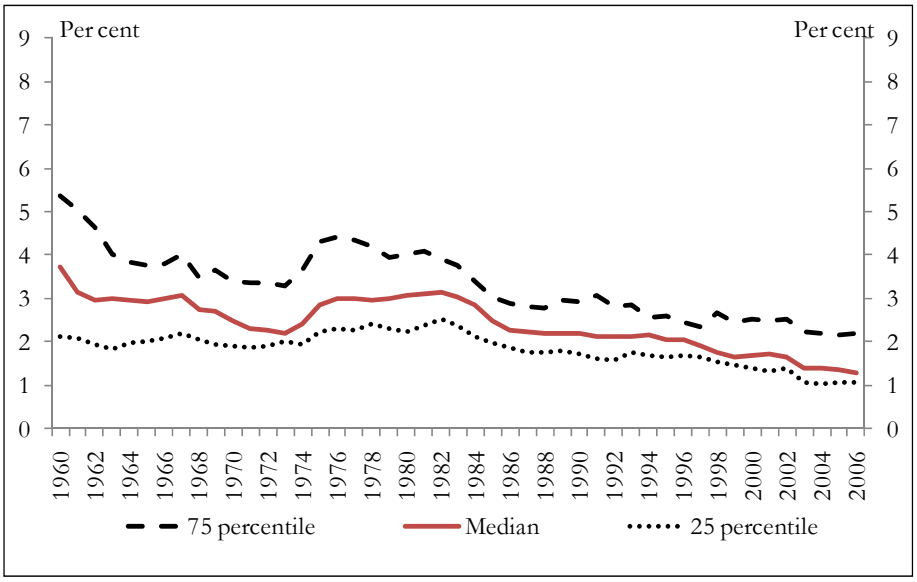
After the crisis in Asia (1997–1999), the rate of growth once again picked up in the region, and apart from China, another large country – India to be exact – embarked on a path of rapid growth. Perhaps the greatest changes took place in the Latin American countries. Although the region still suffered from crises, fiscal policy discipline improved distinctively by comparison to previous years, while the conditions for growth also improved, accompanied by considerably lower inflation. Federal Reserve Chairman Bernanke, in his famous speech of 2004 (Bernanke, 2004), was not the first to acknowledge the "great moderation", i.e. the significant growth in macroeconomic stability, and was merely looking for the reasons behind it.[29]

[28] In addition to the above, most popular explanations also include, the development of corporate inventory management and the absence of shocks (good fortune).

[29] An excellent summary assessment of this subject is available in White (2008), focusing mainly on the drop in the rate of inflation.

Chart 2-1: Volatility of growth in advanced economies

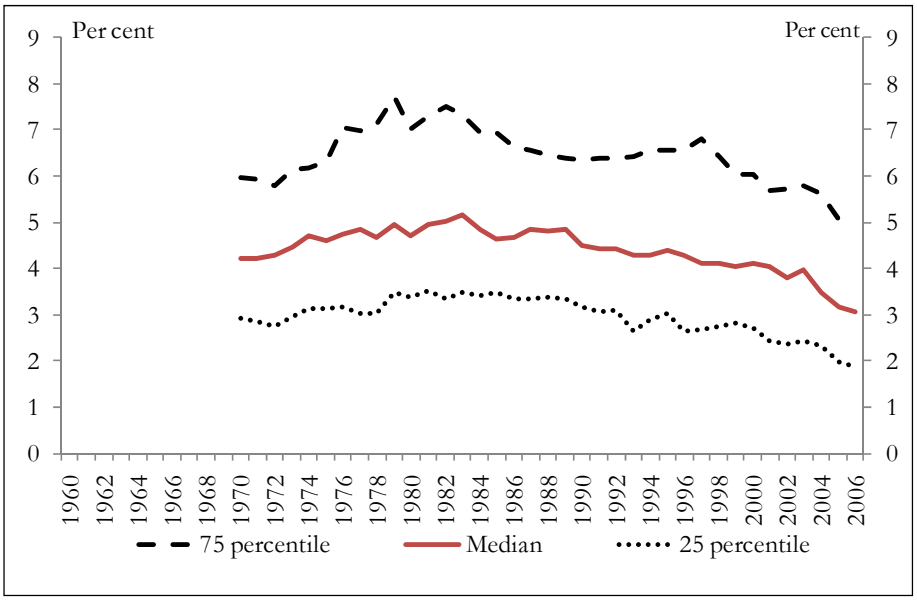
Rolling 10-year standard deviations of detrended growth



Source: IMF (2007).

Chart 2-2: Volatility of growth in emerging markets and developing countries

Rolling 10-year standard deviations of detrended growth



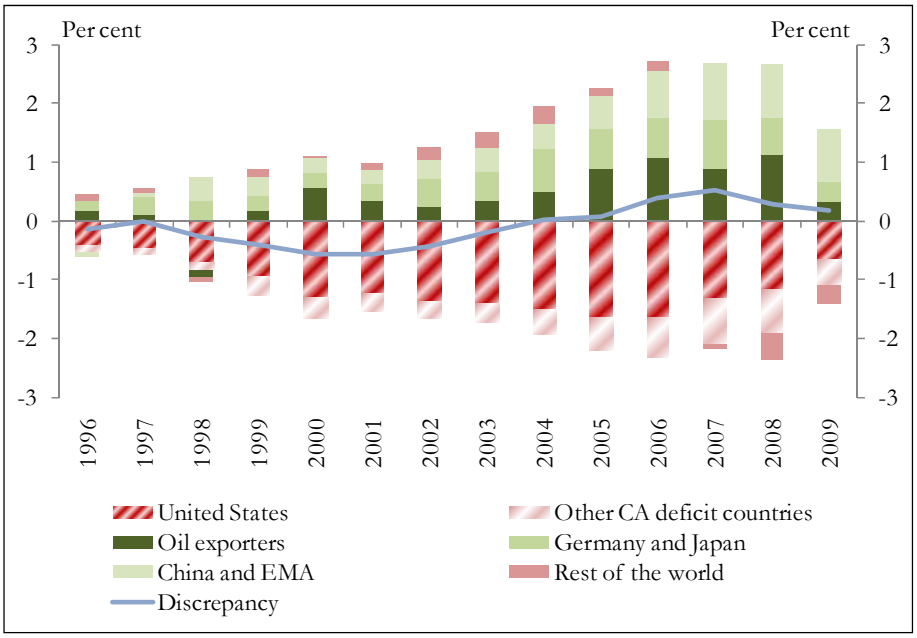
Source: IMF (2007).

2. 2. Global imbalances

While there is no consensus as to the precise reasons for the great moderation, there were numerous signs indicating that considerable risks had emerged over the years. Global imbalances reached never-before-seen proportions. The USA ran a significant current account deficit (Chart 2-3). A mirror image of this was seen in the Southeast-Asian countries and in the oil exporting countries, which built up massive reserves. Although the euro area was in fairly good shape in terms of balance on the whole, considerable imbalances developed in some of the participating countries nonetheless. Germany became the largest exporter on the global scale, the majority of which represented EU markets, while other EU Member

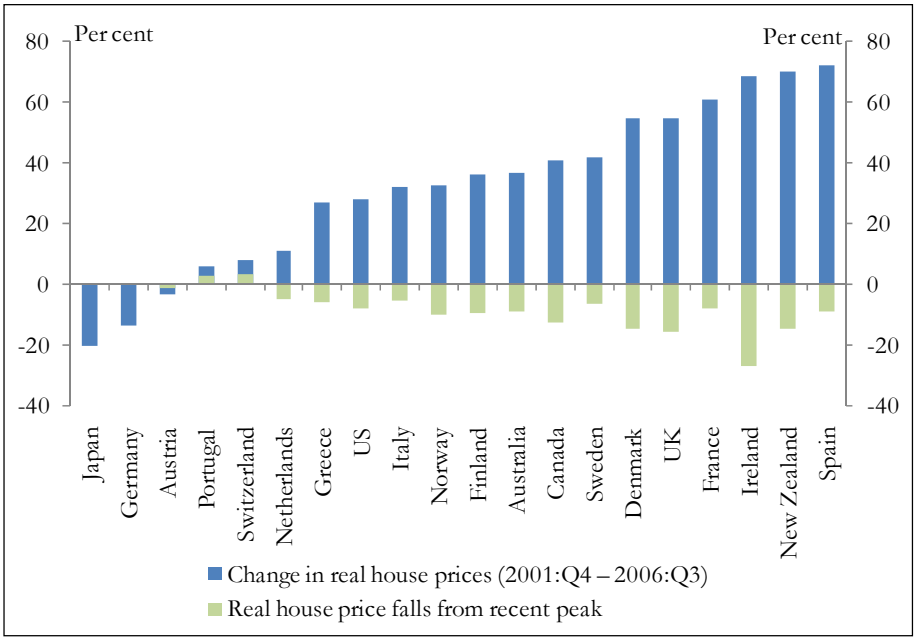
States (Spain, Ireland, United Kingdom, Greece and most Member States from Central and Eastern Europe) registered exceptionally high current account deficits and sharp increase in credit and in house prices (Chart 2-4).

Chart 2-3: Current account balances (per cent of world GDP)



Source: IMF (2009c).

Chart 2-4: Changes in real house prices (cumulative, per cent)



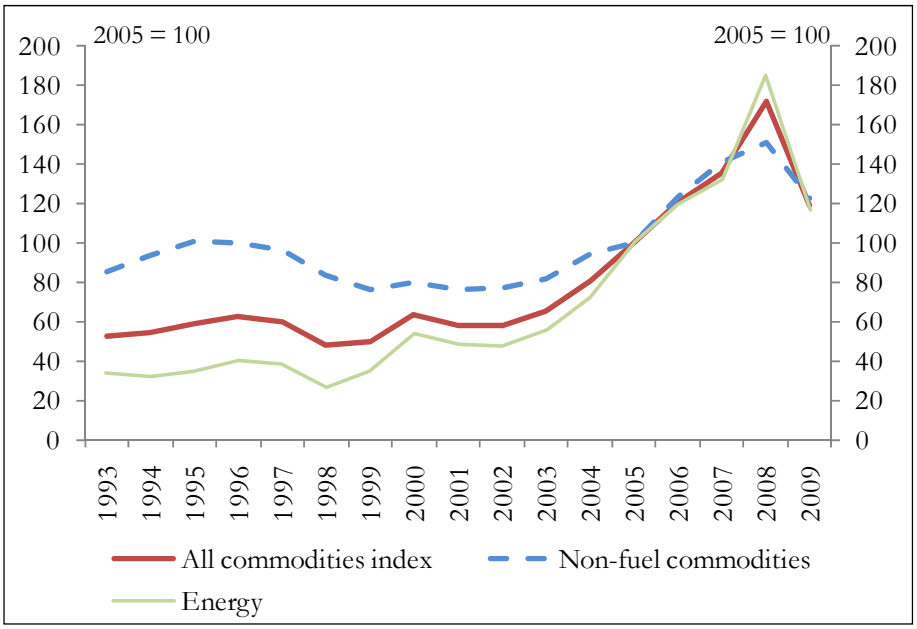
Source: IMF (2009c).

Capital flows on a global scale reached never-before-seen proportions. Aside from the exceptionally high volumes of international capital flows, the direction of these movements was also considered disturbing: on the whole they flowed from less developed countries to the developed countries, and not the other way around (except for Germany and Japan from the developed countries and the Central and Eastern European countries from among the less developed ones).

At the same time, the level of credit risk premium on the global financial markets dropped to historical lows. It was made easier for a great many agents to obtain financing, including some, on occasion, which were never able to obtain any credit before. Lending standards were eased considerably and banks – through structural and financial innovations – managed to find ways to increase their credit portfolios considerably within the existing regulatory framework. House prices and prices of a host of financial instruments increased sharply, for the most part in consequence of the demand driven by the greater availability of credit.

Another sign of overheating in the global economy was the rise in commodity and oil prices to historical highs (Chart 2-5), as these prices became increasingly dependent – aside from the actual supply and demand – on expectations as to future changes in these prices. Growing numbers of investors moved to secure forward prices – anticipating higher prices still – in the various futures markets. While in the process of obtaining insurance against future inflation, these investors themselves contributed strongly to the rise in commodity and oil prices (Wray, 2008, Frankel 2008a and 2008b, Hamilton, 2010). Decision-makers expected the signs of overheating to appear in domestic indicators of inflation, such as nominal wages. But this did not happen due to fierce global competition. Instead, inflationary pressures appeared in the prices of financial assets, real estates, commodities and energy, which were traditionally regarded as volatile indicators, not reliable enough to inform decision-makers about the state of the business cycle.

Chart 2-5: Commodity and energy price indices



Source: IFS.

2. 3. Reasons for the "great moderation" and global imbalances

Most studies cite the combined effect of several events as the reason for the global imbalances, which separately would not necessarily led to a financial crisis. One such possible reason is the unusually high level of global savings ("*global saving glut*"). Such a high level is the result of the strategy adopted by the emerging regions, accompanied by some developed countries such as Germany and Japan. Taking into consideration the conclusions of deep crisis situations of previous decades, Southeast Asian and Latin American countries changed their development policies. Instead of a policy based on the availability of external financing, they proceeded in a direction to accumulate export surplus, and consequently to accumulate international reserves. During the years immediately prior to the crisis, China became the leader in accumulating international reserves and in the placement of such reserves. The third group is represented by oil exporters, for they too managed to build up substantial export surplus and capital

export.[30] The position of South American countries and of oil exporters was enhanced by lasting and rapid global growth through the sharp increase in commodity and energy prices. In spite of the fact that Asian countries get their commodity and energy supplies from imports, they were nevertheless able to accumulate substantial trade surplus by making manufactured products taking advantage of production capacities and moderate domestic demand. Trade surpluses were also enhanced by the policies of emerging countries in a broader sense, such as an export-oriented policy, high savings and self-reliance due to the absence of social policy, including exchange rate policies that prevented the appreciation of their exchange rates. Generally speaking, the central bank moved to sterilise the inflow of extra export revenues (in China for example) or they went directly to the government's asset management bodies (oil exporters) that carried out the exports (Brender–Pisani, 2009).

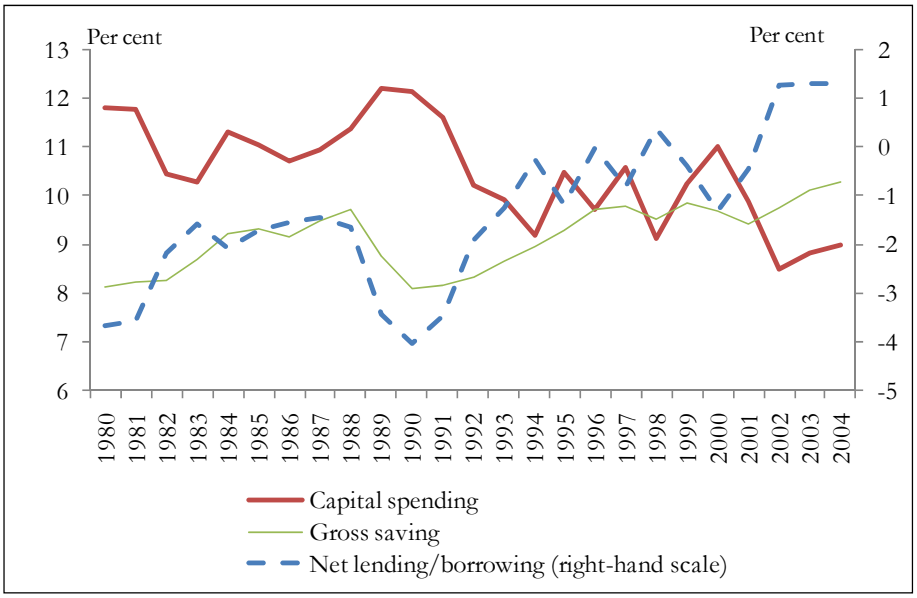
Connected to the above phenomena, long-term interest rates did not rise despite increasingly stricter measures introduced by the Fed, thus there was no decline in the volume of lending, and the rate of increase in asset prices did not falter either. Moreover, American households took advantage of higher house prices, and borrowed more money consistent with the higher collateral values, and hence to further increase their consumption spending. Due to the low interest rates, the volume of car loans and other consumer loans rose rapidly. As a combined result, the volume of borrowings of American households increased progressively relative to their disposable income level, using their houses and holdings in securities as collateral that were increasingly considered to be overpriced. The elevated vulnerability of households in terms of their finances and consumption spending became sensitive to sudden adjustments in house and asset prices, that was otherwise the largest single item of aggregate demand as well as the traditional driving force of growth in the USA.

The most obvious question is why these funds were used by the general public, rather than by the American companies, for example. Up until the stock market crisis of 2001, the investment activity of American companies was considered intense, and they used a great deal of external financing for funding their projects, further increasing their level of indebtedness. However, after the stock market crisis they took a more cautious approach: their profitability was restored quickly and their investments once again reached the usual level, still corporate investments remained relatively subdued in respect of their profitability. In reality, the companies preferred to invest their profits in foreign markets, if they were unable to invest these funds in the USA with prospects of a reasonable return (IMF, 2006 and Moec–Frey, 2006). On the whole corporations in the USA, and also in the G-7 developed countries generally failed to take advantage of low interest rates – with some differences – they did not embark upon massive capital investments and they did not increase their level of indebtedness (Chart 2-6).

[30] These efforts to accumulate international reserves are known as self-insurance. As for the underlying motives, see UNCTAD (2008).

Chart 2-6: G-7 non-financial corporate sector (excluding Germany)

Per cent of total GDP



Source: IMF (2006).

The current account deficit of the USA in international trade was practically offset by the positive side of the income balance by the mid-2000s (Hornok et al., 2006 and Moec–Frey, 2006). In other words, the amount of income shipped home by the foreign subsidiaries of American companies or the profit earned by foreign companies of American interest was higher than the similar income of foreign companies in the USA.[31] As regards global imbalances, the position of the corporate sector carried a certain degree of uncertainty. Finally, the fact that external financing was used not by the corporate sector increased the risk of credit failures, as the disposable income of households did not increase dynamically enough: therefore, the debt servicing of households remained subdued only because and insofar as the yields were also at an all-time low. Any adjustment of interest rates and any non-movement, or decline in the income level of households constituted a risk factor in respect of the financial position of households.

Regions that set their sights on the accumulation of international reserves along export-oriented policies invested their international reserves in developed countries, preferably in risk-free instruments, mostly in US government papers or high quality corporate bonds. As a major factor of global imbalances, the banking systems of developed countries introduced financial innovations for the placement of these funds in developed countries. This way the financial systems of developed countries (the USA mainly) satisfied two criteria: one was the demand of emerging countries for secure investments free of credit risk, and the other being the financing requirement of sectors with high credit risk. Brender–Pisani (2009) offers a detailed and elaborate overview of the process where international reserves held with a view to avoiding risks were transformed into high-risk loans through financial innovations (for more information see Box 2-1). Through the development of structured financial products, agents in the financial sector were able to offer high-risk loans covered by securities free of any credit risk (such as government papers) and by home mortgages, while receiving good rating in terms of credit exposure from the relevant credit rating agencies. The papers issued in this fashion were held also by investment funds that were in need such "credit enhancement" because of the relevant regulatory provisions. The idea was to introduce innovative

[31] We only have estimates in this respect. Moreover, some may argue that these estimates typically undervalue this balance, as they do not include in the value of subsidiaries the value of advanced know-how, design and management methods, which are not readily embodied in physical assets ("dark matter"), Moec–Frey (2006). See also IMF (2005) Box 1.2: "Why is the US International Income Account is in Black, and Will it Last?", page 21.

products to "slice" credit risks up into components better fitted to the risk-bearing ability of investors. Furthermore, plans included distributing these products in a broad spectrum so as to reduce the concentration and correlation of risks.

As we can see, as far as global imbalances are concerned the financial sector played a very important role, and this explains why the crisis broke out in the form of a crisis of confidence – contrary to expectations – toward the financial sector, rather than in the form of currency crises materialising in a depreciation of the dollar.[32]

Box 2-1: Risk chain among countries with net savings and net borrowings positions[33]

The transformation of risks played a key role in the development of global imbalances, which also permitted the placement of funds of investors seeking credit risk-free savings to high-risk borrowers, where credit risk is not borne by the final investor.

Southeast Asian countries and oil exporters aimed to obtain substantial surpluses from export revenues for strategic considerations, and placed their export revenues in international reserve currency denominated, riskless or low risk securities (mostly in US government bonds). Surplus export revenues remain when companies decide not to spend the majority of their export revenues, for investments or wages. For example, if Chinese companies were to use this surplus to purchase renminbi, they would have pushed the price of the renminbi up while increasing imports at the same time, hence effectively depleting the surplus export revenues of China and blocking the international reserves of China from expanding. With a view to maintaining the export-oriented policy, Chinese companies were required to keep the majority of their export revenues in US dollars either directly, or via Chinese banks through the Chinese central bank, and deposit these funds in American banks as secure investments. In the years before the crisis broke out this was accomplished increasingly through the central bank: an appropriate portion of the export revenues was purchased over the Chinese interbank market by the Chinese central bank for renminbi, using certificates of deposit or central bank deposits. This way the Chinese central bank took over the risk in the renminbi-dollar exchange rate from the Chinese companies,[34] but did not run the credit risk, for it was accepted by the American financial system by way of the placement of the funds deposited in dollar accounts. In fact, net investors used these deposits to purchase long-term American government papers for the most part, and short-term treasury bonds for the lesser part. This, however, remains ineffectual as to merits, as the deposits are kept in the banks by the sellers of these papers.

The dollar deposits placed in the American banking system provided additional resources for retail loans. To that end, it was necessary to transform credit risks and distribute them among the final investors in a securitised form. Credit risks were "sliced" up into pieces, repackaged, customised according to risk categories and sold to final lenders in the form of negotiable financial instruments. Banks reduced their role to operate as commission agents of issuers through their special purpose entities; while risks were assumed by insurance companies, pension funds and risk funds, depending on their risk appetite. On account of long lasting stability and rising real estate prices, the risk-pricing models indicated gradually declining market risk, and the issues received good rating in terms of credit exposure from the relevant credit rating agencies interested in increasing turnover to earn more commission.

[32] As regards the increased exposure of banks to risks, see the works of Gambacorta (2009), Disyatat (2010) and Borio–Zhu (2008).

[33] Based on Brender–Pisani (2009), with some changes: instead of Chinese households we used Chinese companies, for it offers a better view of the actual institution/"transaction" realities, however, it has no effect as to the essence of the argument.

[34] If Chinese export companies were to keep their US dollar savings in the American financial system without the involvement of the Chinese banking system and the central bank, the companies themselves would assume the risk in the renminbi-dollar exchange rate.

The institutions showing credit risks in their books typically secured their resources from the interbank market, where supplies increasingly comprised the short-term dollar deposits described in the previous section. And this is the end of the road: dollar savings eventually found their way of investment – through several players – in the form of retail loans in the USA, while in the financial sector leverage and hence vulnerability increased significantly. While the risk in the renminbi-dollar exchange rate was covered by the Chinese central bank (or by the Chinese export companies directly), credit risk was covered by the American financial sector (or generally by the financial sector of developed countries showing a current account deficit).

The process was facilitated by the Fed and other regulatory authorities allowing banks to establish entities formally not operating as banks (conduits, Special Investment Vehicles, etc.) and thus, being exempt from prudential rules, able to float these innovative loans. However, as it became clear during the crisis, they did not ultimately relieve parent banks of the credit risk as, explicitly or implicitly, they assumed a buyback guarantee on the innovative products. The credit risk was thus borne mainly by the financial sector of advanced economies, while less advanced saving economies were exposed primarily to the exchange rate risk of the US dollar.

Central and East European (CEE) countries having joined the EU a few years earlier behaved differently from other emerging regions. Apart from a favourable global investor environment, their extensive use of external financing was facilitated by their financial integration, common economic institutions and their prospect of being integrated into the monetary union in the foreseeable future. As it seemed possible to minimise the most important financial risks, exchange and premium risks within a few years, external financing appeared to be logical from all aspects. During the years immediately preceding the crisis, the volume of outstanding retail loans was fast approaching the level of the most advanced economies, albeit with the important difference that borrowings were mostly denominated in foreign currency (euro or Swiss franc). The rapid rate of indebtedness of households mostly resulted in a similarly rapid increase in house prices and deterioration of the current account due to imports of consumer goods.

The fast increase of foreign currency denominated loans was mediated by the domestic banking systems, mostly consisting of the subsidiaries of Western European banks (primarily Austrian, German, Italian, Belgian, Dutch and French banks in Central and Eastern Europe as opposed to the dominance of the subsidiaries of Northern European parent banks in the Baltic region). Increasingly, loans were financed by the domestic banking systems from foreign sources, replacing domestic savings, denominated in domestic currency.[35]

The risks of loans were borne by the borrowers: contracts enabled banks to pass on the risks of changes of foreign interest rates and exchange rates to customers. Banks are not exposed to such risks to a significant extent as long as customers remain solvent. At the same time, banks were assuming a significant risk as to their ability to rollover their foreign sources. This became a critical issue at the outbreak of the crisis. On the global reassessment of risks, the perspective of future integration lost its importance for investors. Instead, currency exposure and debt became the most important risk factors, i.e. the ones with respect to which our region was in a relatively bad position. Without monetary integration (lender of last resort), the integration of the financial and real economies resulted in an unstable situation. The consequences of the financial crisis were aggravated by the shock in the real economy: CEE countries were hit sensitively by the recession of the EMU, their largest market.

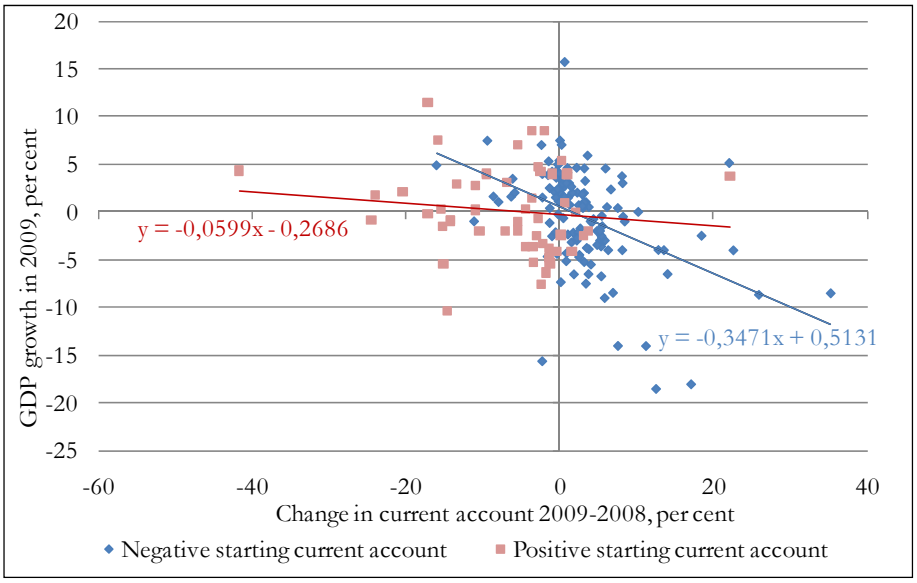
2. 4. The expected future course of imbalances

During the current crisis, growth models based on external funds required a higher-than-average adjustment. The growth of countries with a current account deficit at the outset of the crisis was hit more

[35] Consequences in Hungary are described in more detail in Chapter 3.1.

strongly (Chart 2-7). While the lasting effect of the correction has yet to be seen, part of it must reflect long-term adaptation due to potentially more conservative risk assessment in the future.

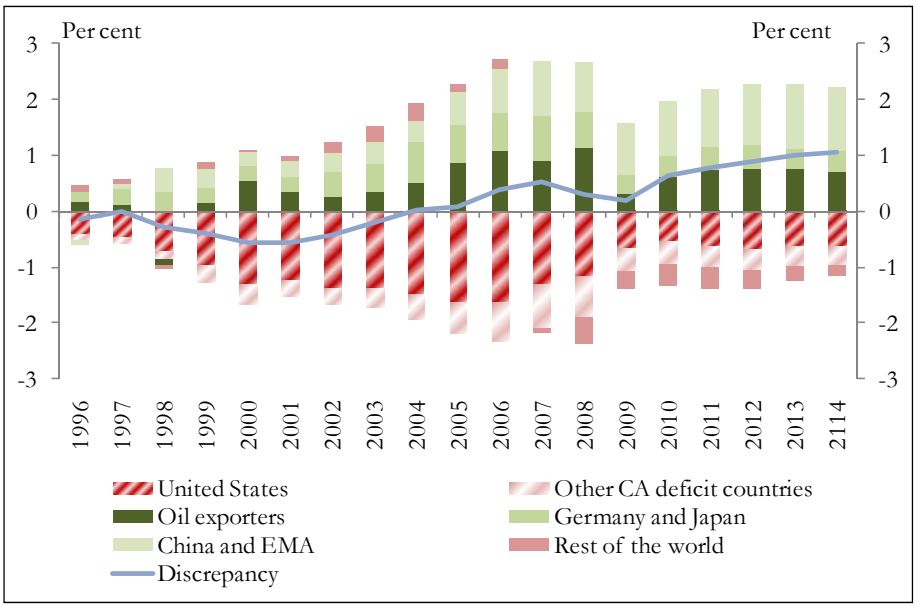
Chart 2-7: Relationship between initial current account and economic growth



Source: IMF WEO Database – October 2009.

The projection of the IMF until 2014 also shows that some of the imbalances will reappear during the years ahead (Chart 2-8). Adjustment can be more significant in countries characterised by a current account deficit, where internal overheating was the underlying cause of external financing. In these countries, the deficit may even be halved compared to the pre-crisis years. In countries with a surplus, however, the imbalances may partly be regenerated as the prices of commodities resume their growth with the increase of global trade. Since, in its projection, the IMF calculated using constant real exchange rates, the presented adjustment may be underestimated. However, it clearly shows that the pre-crisis path of the global economy is no longer sustainable. A more prudential approach to risks will necessitate the lasting adjustment of debt-financed growth models. With the increase in external and public debt, in the future, economies may respond more sensitively over the long term to changes in risk sentiment. A lasting, balanced recovery can only be achieved if the former imbalances are not restored to a significant extent (Blanchard–Milesi-Ferretti, 2009).

Chart 2-8: Current account balances (per cent of world GDP)



Source: IMF (2009c).

In order to achieve a lasting decline in imbalances, a change is required in the behaviour of economic agents. According to macroeconomic theory, the balance of the current account reflects saving and investment decisions. Unless the savings generated in an economy can cover investments, the excess capital has to be drawn into the economy from abroad. Due to the crisis, however, the extent of potential indebtedness has become more limited, increasing the significance of domestic savings. Countries with a low rate of savings should therefore reduce consumption financed from foreign loans and increase their rate of savings. On the other hand, in countries with a high rate of savings, domestic demand should be increased in order to maintain the level of output in the face of the decline of foreign trade surplus (Blanchard–Milesi-Ferretti, 2009). Besides the changed behaviour of the private sector, adjustment may also be encouraged by economic policy. The relative weight of the roles is also affected by the relative indebtedness of the particular sectors before the crisis and the need for significant adjustment in certain sectors. In sectors where the crisis generated substantial fiscal burdens, the withdrawal of economy-stimulating measures may have a considerable role.

Blanchard–Milesi-Ferretti (2009) enumerate several factors that may have a lasting effect instrumental to balance. For example, a sustained increase in savings by the private sector may be justified by the fact that the losses affecting wealth can only be retrieved over longer periods of time. This may be especially true of the USA, where the crisis affected the financial situation of households particularly seriously and therefore the rate of savings is unlikely to revert to the historically rather low level characteristic of the pre-crisis period. Lasting impacts on investments and external financing may also include the effect of the increased cost of capital due to the higher risk premium and stricter financial regulations. Similarly, emerging countries which previously ran current account deficits may also institute long-term changes in their currency reserve strategies, specifying a higher desirable level of reserves as a lesson learnt from the crisis. Meanwhile, the (primarily Asian) countries which accumulated significant reserves prior to the crisis, concerned about the significant amount of capital inflow, may restrict the appreciation of the exchange rate and continue the accumulation of reserves. On the whole, the authors outline a probable scenario of long-term adjustment due primarily to the increasing rate of savings in the United States, whereas the

other two substantial imbalances, i.e. that of the Chinese current account surplus and the deficit of the US budget, still have to be reduced.[36]

2. 5. The effect of debt on growth prospects

While forecasts project the partial levelling of imbalances, it will take longer to reduce the high level of debt. While in countries with a current account deficit prior to the crisis, such as the United States and most European countries, pre-crisis external imbalances resulted in an increase in external debt, as a result of the response to the crisis, countries are required to face a growing burden of public debt in the years to come. Many countries hit by the crisis will be affected by the simultaneous increase of public debt as a consequence of the crisis-related fiscal stimulus and falling tax revenues.[37]

The outlooks for advanced economies are worsened by the increase of welfare expenses due to the ageing of the population (Cecchetti et al., 2010). The crisis saw a dramatic increase in public debt even in countries characterised by a relatively low level of debt during previous years. According to the forecast of the OECD, by 2011, the level of the public debt of advanced economies may exceed 100 percent of GDP, which may raise questions concerning the sustainability of debt dynamics. The debt paths do not appear to be sustainable in any of the advanced economies under review; and in the absence of substantial fiscal measures, public debt may explode. As a result of declining risk appetite, investors will be less likely to tolerate high levels of public debt, which in turn may lead to increasing risk premiums in the future. Increasing bond returns, on the other hand, may jeopardise an already sensitive economic recovery. Considering the increasing real interest rates and an economy slowly recovering, a substantial improvement would be required in the structural primary balance of budgets in order to ensure the sustainability of the debt path.[38]

The debt dynamics taking shape as a result of the crisis and crisis management may have a serious impact on the growth prospects of the countries concerned. On the basis of data covering several decades, Reinhart–Rogoff (2010) concludes that both advanced economies and emerging countries have achieved a lower rate of growth at a level of public debt in excess of 90 percent. For the latter group of countries, external debt appears to be an even stricter constraint. The rate of growth of the economy has slowed down considerably where the external debt has exceeded 60 percent. Unfortunately, for advanced economies, the economic growth accompanying various levels of external debt could not be analysed due to the absence of sufficiently long time series. As far as the member states of the European Union (EU) are concerned, even in the case of the GDP growth expected on the medium run, there seems to be a negative relation between the forecasted performance of the economy and the debt levels burdening the economy (Chart 2-9).

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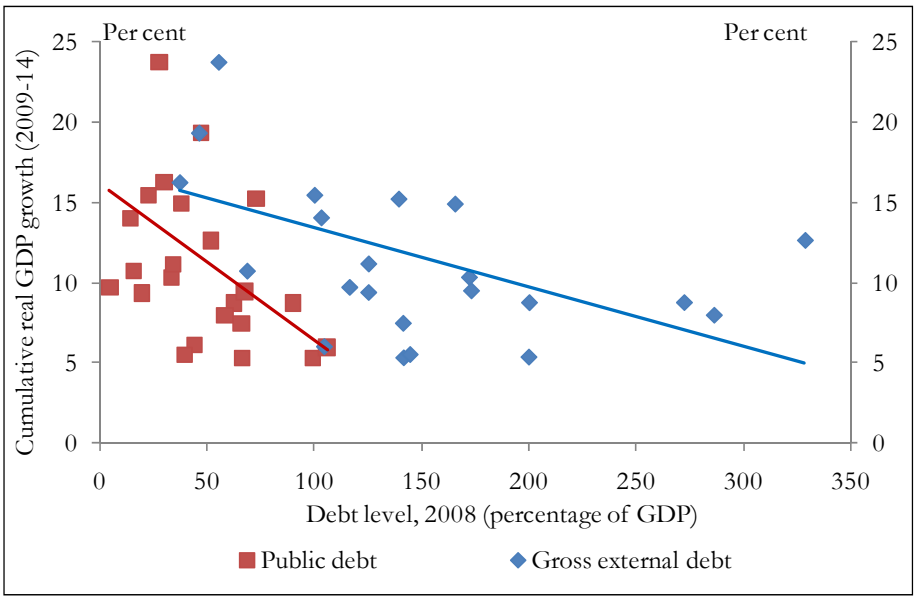
[36] It is important to note, however, that the developments of the latest quarters do not support this projection. While there has been a marked decrease in the net export surplus in China, in the USA the improvement in the external balance has come to a halt with the recovery and the positive correction in household financial wealth.

[37] According to earlier studies, these factors – rather than expenses related to the consolidation of the banking system – were primarily responsible for the growth of public debt during financial crises in the past. According to Reinhart–Rogoff (2009), in total, this increased real public debt by 86 percent on average during the 3 years following the crisis. On the other hand, part of the government expenditure related to the capitalisation of the banking sector may be recovered over time, for example when the value of government interests in the banking sector (the price of bank stocks) begins to increase following the crisis, which can be realised on re-privatisation.

[38] For further discussion of this issue, see Box 1-8.

Chart 2-9: Economic growth forecasts and debt levels, EU-27*



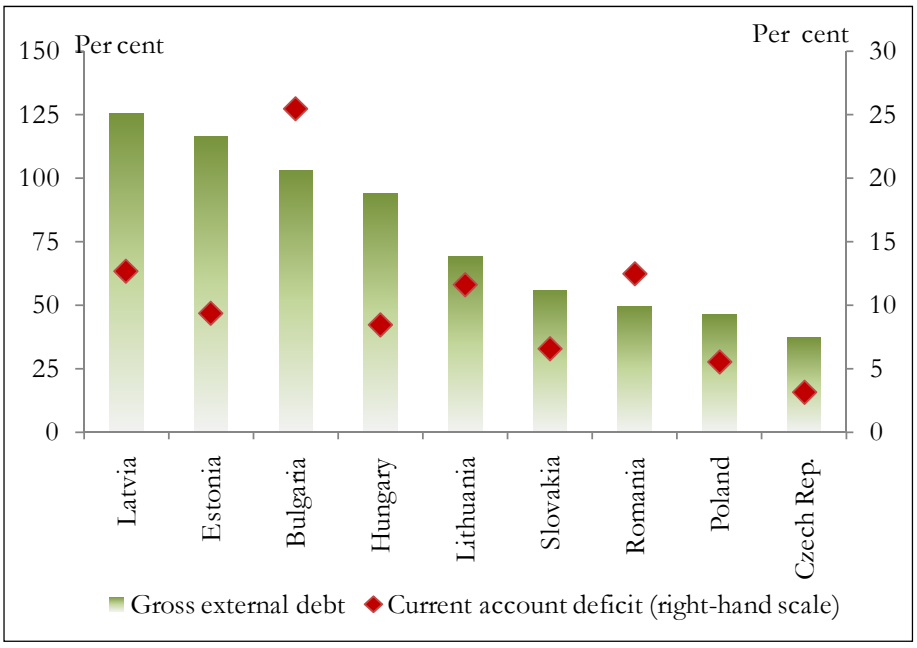
** Excluding Cyprus, Luxembourg and Malta. For Hungary, the gross external debt is shown without special purpose entities (SPE). For the explanation, see Chart 2-10.*

Note: the outlier for Ireland's external debt has been eliminated.

Source: Joint External Debt Hub, Eurostat, IMF WEO Database – October 2009, MNB.

The debt problem is particularly relevant for the countries of the Central and Eastern European region and the other EU members acceding in 2004, which have been financing their rapid economic growth in recent years through current account deficits. That was manifest in the high pre-crisis current accounts deficits, mostly in the range of 5-15 percent of GDP (Chart 2-10). At the same time, the level of external debt was relatively low in half of these countries, which will thus probably be hit less hard by the increasing costs of debt financing. This is not to say that the earlier processes can go on without changes. As sustaining the deficit alone will involve increasing risks, even the countries which currently do not have a debt problem will now be unable to grow with the previous external imbalances. With the exception of Hungary, the Visegrád countries have accumulated relatively low debts in comparison with the other new member states. A more favourable picture can be seen with regard to fiscal positions. While the overwhelming majority of countries had a reasonable debt stock prior to the crisis, in the future, fiscal policies operating with a typical budget deficit of 2.5 to 4.5 per cent can only be maintained with increased tensions (Chart 2-11). The floating exchange rate and monetary policies with an inflation target (Hungary, Romania, Czech Republic and Poland) and the introduction of the euro (Slovakia) may help the region cope with the crisis (Åslund, 2009), but the perception of the vulnerability of the region is likely to be changing.

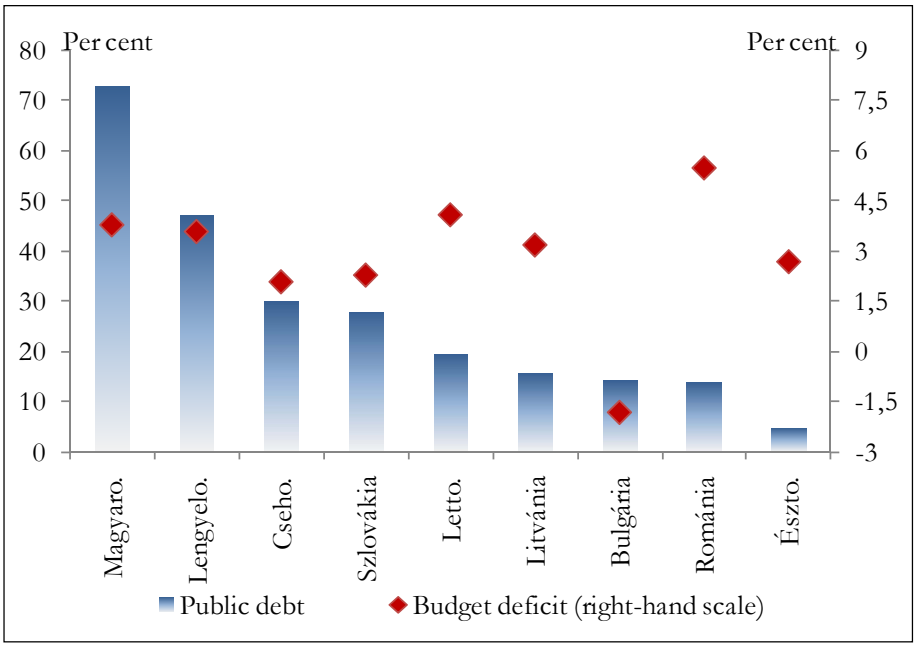
Chart 2-10: External imbalances in the new member states, as a percentage of GDP (2008)



Note: For Hungary, the gross external debt is shown without special purpose entities (SPE). These typically off-shore entities, very active in Hungary, will normally move into a particular country exclusively in order to take advantage of tax benefits. Since SPEs do not engage in production in Hungary or have any connection with the domestic financial intermediary system, in our opinion, their presence does not increase the vulnerability of the Hungarian economy. Few other countries face similar problems (e.g. the Netherlands and Luxembourg).

Source: Joint External Debt Hub, National Bank of Romania, IMF WEO Database – October 2009, MNB.

Chart 2-11: Internal imbalances in the new member states, as a percentage of GDP (2008)

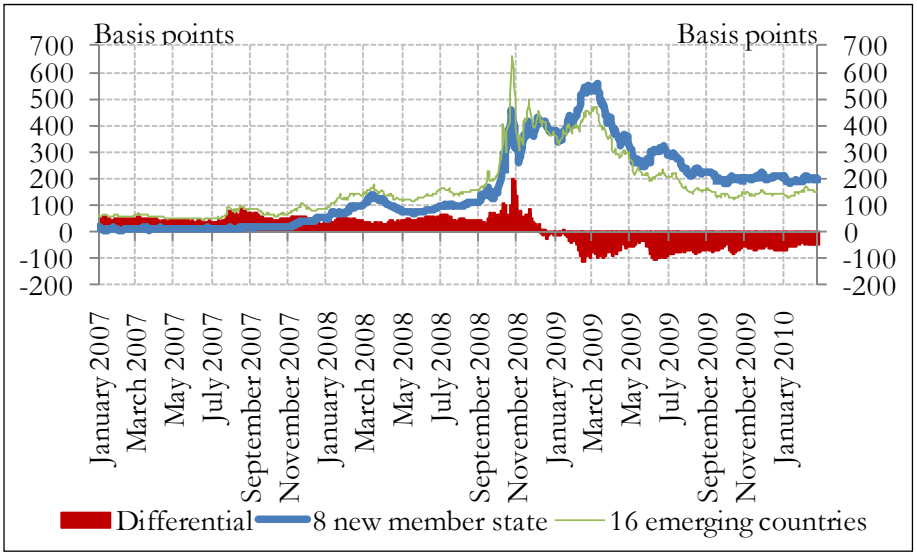


Source: Eurostat.

While in advanced EU countries, the pre-crisis financial or real estate boom may impede the recovery of the economy, in the new member states, the drying up of capital flows may pose a hazard to growth. The complexity of the picture is increased by the fact that the latest findings show signs of excess lending in the household sector during the period immediately preceding the crisis, which raises the possibility of an unfolding pre-crisis credit boom (see Chapter 3.1). Risks are globally repriced in the wake of the crisis,

which may be particularly worrying considering that investors may have underpriced risks in the region compared to other emerging regions (Luengnaruemitchai–Schadler, 2007). It may have been due to confidence in the disciplinary power of the EU on the fiscal policy of the countries of the region or in the imminent introduction of the euro. With the worsening of these outlooks, however, a change may occur in the perception of risks. Its signs can already be seen if one compares the credit default swap (CDS) premium of the 8 new EU member states acceding in 2004[39] and 16 emerging markets[40] (Chart 2-12). While until December 2008, the average premium of the new Central and Eastern European and Baltic member states was below that of the other group, the relationship turned around in early 2009 and for over a year, the average of the new member states has exceeded the average premium level of the other 16 emerging markets.

Chart 2-12: 5-year CDS premiums (January 2007 – February 2010)



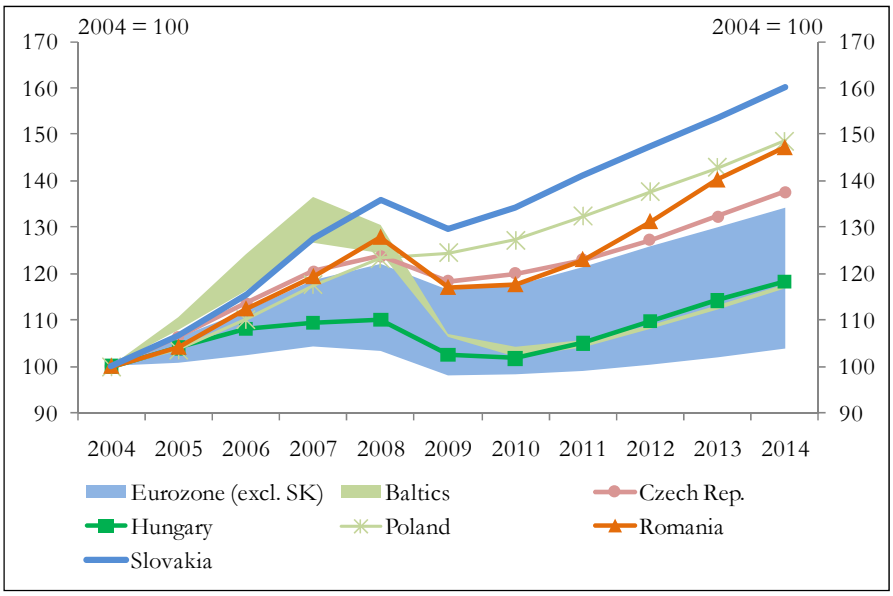
Source: Thomson Datastream.

External vulnerability is reflected in the growth outlook for the region. According to the simulation of the IMF, the crisis may cut back medium-term growth (2008-2014) by 0.6-2.5 percentage points in the new EU member states, which may typically have a harder time recovering from the crisis compared to the older member states (IMF, 2009a). Chart 2-13 shows that output is expected to drop near the 2004 level over the short term in the Baltic states, which were overheated prior to the crisis. Apparently, the region is not homogeneous. Accordingly, the extent of the recession of the Czech, Polish and Slovakian economies, which are considered less vulnerable, may be smaller.

[39] Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia.

[40] Brazil, Chile, China, Colombia, Egypt, Indonesia, Israel, Korea, Malaysia, Mexico, Peru, Russia, South Africa, Thailand, Turkey, Vietnam. These 16 countries were selected primarily on the basis of the availability of data, also taking into account the categorisation of Luengnaruemitchai–Schadler (2007). The group includes mainly Asian and Latin American countries, whereas some countries have been omitted where the premium was extremely high and these were considered outliers (including, for example, Argentina and Pakistan).

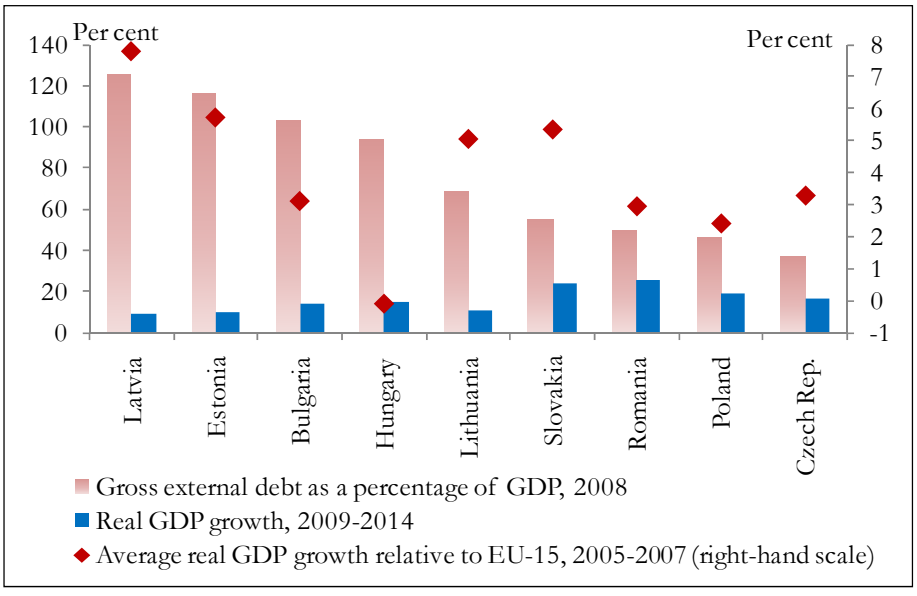
Chart 2-13: GDP forecasts for EU member states



Source: IMF WEO Database – October 2009.

Heterogeneity within the region is well illustrated by the study of external debt, referred to above. Chart 2-14 is in line with the findings of Reinhart–Rogoff (2010), i.e. according to the forecast of the IMF, the cumulated growth of real GDP may be considerably lower over the medium term if gross external debt exceeds 60 per cent. Typically, the level of external debt is in direct proportion to the pre-crisis rate of growth of the economy – financed from external sources at the cost of increasing external vulnerability. Hungary is an exception from that rule, which may partly be explained by the fact that, due to the austerity measures in 2006, the Hungarian economy already began to slow down before the crisis and therefore achieved a slower average rate of growth than the EU-15.

Chart 2-14: External debt and real GDP forecast for new member states



Note: For Hungary, the gross external debt is shown without the special purpose entities (SPE). For the explanation, see Chart 2-10.

Source: Joint External Debt Hub, IMF WEO Database – October 2009, National Bank of Romania, MNB.

For many countries, as a result of the crisis the growth forecasts have worsened considerably, albeit to varying degrees, compared to previous years. As an important lesson, countries which managed to avoid the accumulation of substantial debts before the crisis still have a better growth outlook as opposed to some seriously indebted countries. However, due the collapse of the international financial system and the ensuing global nature of the crisis, even countries with a better debt position have been affected seriously.

2. 6. Lessons from past financial crises

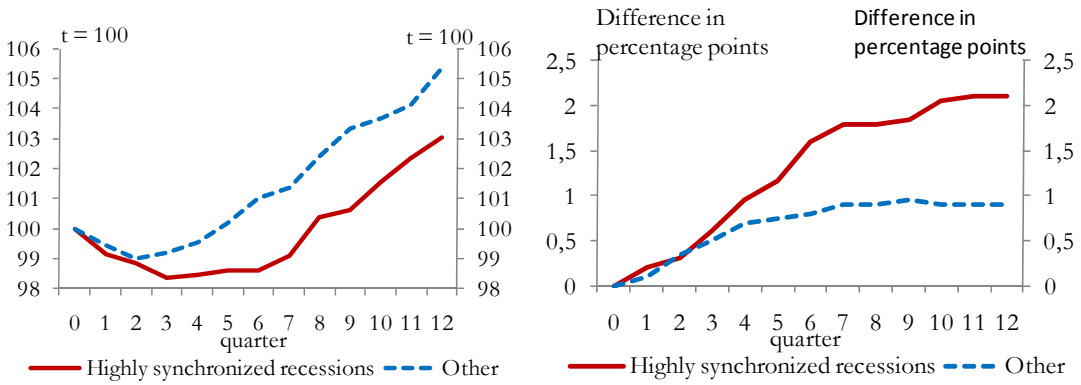
The global crisis has revealed the extent of vulnerability generated by imbalances and set the economies off toward a painful adjustment. The processing of experiences gained in past crises, which may provide an insight into post-crisis economic trends, is a widely used method for calculating the potential real economic costs of the current crisis. Based on 21 earlier crises, Reinhart–Rogoff (2009) demonstrates that a significant decline in both output and employment can be expected. In the past, real GDP dropped, on average, by over 9 per cent from peak to trough, and the recession lasted for 2 years on average. The adjustment of the labour market took even longer: the rate of unemployment was rising for nearly 5 years on average. Asset prices, including house prices, also plummeted on a massive scale and for a long time. This could particularly hit the economies where the financial sector contributed to a larger extent to pre-crisis growth.

It needs to be taken into consideration for the assessment of the results that, due to the nature of the current crisis, potential consequences could be even more serious. According to the literature, if the banking crisis is accompanied by a currency crisis, as in Iceland during recent years, it will substantially increase the crisis-related costs. While there are past experiences concerning the former, uncertainty is high with regard to the other factor, i.e. the challenges due to the global nature of the crisis. Apart from the Great Depression of 1929-1933, even major depression periods have been confined to specific regions (e.g. 1991 in Scandinavia, 1997 in Southeast Asia). While in those cases, economic recovery could be based on the favourable external environment and real depreciation of exchange rates, this option is being curbed by weak export markets. In comparison, highly synchronised recessions[41] are, on average, 45 percent deeper (Chart 2-15) and 40 percent longer than the recessions where the external environment can be relied on to a greater extent for recovery (IMF, 2009b). This may indicate a significant shock to the real economy, especially considering that not even less extensive recessions have been followed by a quick recovery (Cerra–Saxena, 2005).

[41] In the absence of a global financial crisis, in the past, the criterion of synchronicity was fulfilled when a minimum of 10 of the 21 advanced economies studied by the IMF were hit simultaneously by recession. Three such years, 1975, 1980 and 1992, have been identified by that method.

Chart 2-15: Highly synchronised recessions compared to other recessions

(output – left panel, unemployment rate – right panel)



Source: IMF (2009b).

The other plate of the balance holds the coordinated measures of governments and central banks with a view to alleviating the adverse effects of the crisis, an in-depth assessment of which, however, can only be attempted after the crisis. As pointed out above, stimulation of the economy has only been possible at the cost of a significant increase in public debt. Lately, economic policy-makers have been increasingly focusing on identifying the optimal timing for the withdrawal of the stimulating measures, which is affected by any changes in the growth outlook.

As a result of the crisis, our growth outlook may change considerably even looking ahead 5 to 10 years. The central driver of that change is that the current economic recession is likely to be more than a cyclical downturn. A financial crisis may cause both the level of potential output of the economy (whose available resources are completely exploited and provided that it is a longer-term trend) and its growth rate to decrease, which has been confirmed by past crisis experiences (e.g. European Commission, 2009a; Furceri–Mourougane, 2009). As far as the recovery of the economy and future growth outlook are concerned, the influence of the crisis on potential output is therefore of key importance.

2. 7. Scenarios for the development of potential output

In order to identify the channels through which potential output is affected by the crisis, the production function is usually decomposed into factors of production.[42] The production function can be decomposed into four essential factors: labour force participation rate, employment rate, capital-labour ratio and total factor productivity (TFP).[43] The first two are related to the utilisation of labour, while the third and the fourth are linked, respectively, to capital and technology. In the following section, these factors are considered one after the other, illustrating the potential influences expected by the three international institutions (IMF, 2009b and 2009c; European Commission, 2009c; OECD, 2009).

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[42] Since this method breaks down aggregate output to its elements from the point of view of supply, it is less suitable for the illustration of the impacts of the adjustment of the demand side related to global imbalances (e.g. shifts required in terms of consumption and savings). However, since this framework is suitable for the demonstration of the consequences of the damaged financial system, we believe that the decompositions on the basis of past crisis experiences provide a useful indication for the future, while not forgetting their limitations.

[43] According to the IMF (2009b), by decomposing a $Y = AE^{\alpha}K^{1-\alpha}$ Cobb-Douglas production function logarithm to its components, one arrives at $\log\left(\frac{Y}{P}\right) = (1-\alpha)\log\left(\frac{K}{E}\right) + \log\left(\frac{E}{LF}\right) + \log\left(\frac{LF}{P}\right) + \log(A)$, in which the parts on the right side of the equation are, respectively, the capital-labour ratio, the employment rate, the labour force participation rate and TFP.

In a financial crisis, the capital-related effect, exerted through investments, typically appears the most apparently and most rapidly. Investment rates drop already over the short run, due to declining demand and the shortage of available credit. If growing uncertainties are accompanied by an increase in the risk premium, it may have a long-term negative effect on investments and consequently on economic growth.

The uncertainty regarding the labour force participation rate is explained by the contradictory influences on that rate. High unemployment and a lasting recession may discourage those having lost their jobs from seeking a new job, which may cause the rate to drop. On the other hand, the loss of income may encourage formerly inactive members of the households (e.g. women) to take a job. That process would increase activity, which leaves the overall development of the labour force participation rate uncertain.

Due to the erosion of skills, delayed economic recovery and long-term unemployment may gradually worsen the opportunities of jobseekers to find employment, which may in turn lead to a lasting increase in structural unemployment. Due to the sluggish adjustment of prices and wages, a sudden increase in unemployment may be followed by a provisional increase in structural unemployment; if, however, the erosion of human capital (hysteresis) does not occur, structural unemployment is bound to revert to its pre-crisis level over the medium term. If, however, the growth outlook is negative, there is serious risk that this will not happen.[44]

Economic theory does not provide a reliable basis to identify the potential long-term impacts of the crisis on TFP, even though TFP is an important driving force of potential growth. However, past experiences have shown that, without changes in the economic policy, the decline in TFP is to be expected, at least over the short run. Innovative small- and medium-sized companies and start-up businesses facing liquidity constraints but otherwise having favourable profit expectations will not have access to the funds required for their operation. In response to their worsening financial condition, businesses tend to curb R&D spending, with the drop in innovation leading to a lower rate of TFP growth.[45] A few channels, however, add to the complexity of the picture: restructuring the economy to the advantage of high-productivity industries may increase TFP, while the exit from the market of less efficient businesses can also increase productivity.

Table 2-1 sums up the impacts mentioned by the various international institutions, followed by their forecasts on potential output.

[44] In advanced economies, the decline in unemployment is rendered more difficult by the integration of Asian countries into the global labour market and economic growth based on their cheap labour.

[45] Estimates by Estevao–Severo (2010) concerning US and Canadian industries have shown that financial shocks tend to distort the allocation of production factors even within a particular industry, thus reducing TFP.

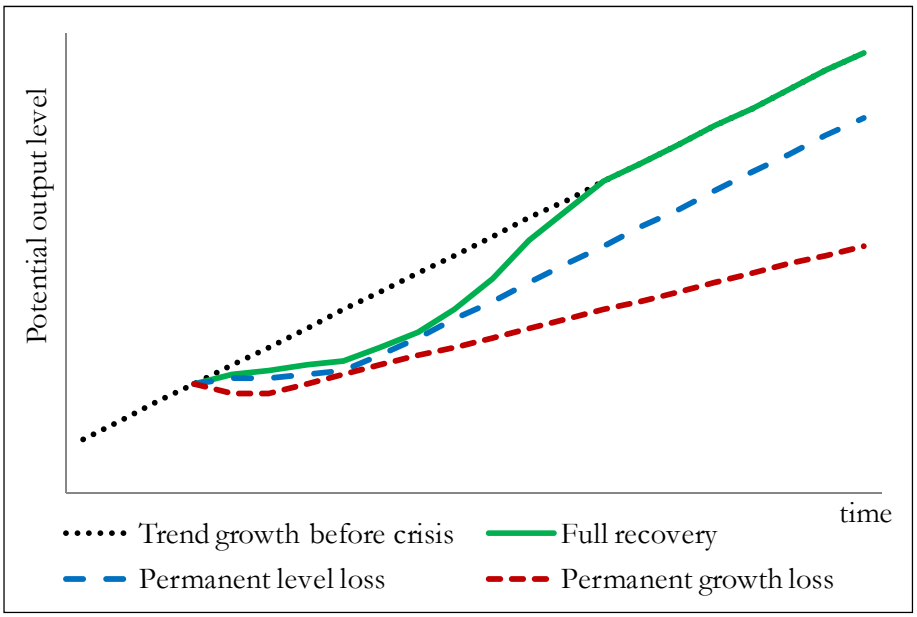
Table 2-1: Main potential impacts of the crisis according to analyses by international institutions

Expected direction of the impact in parentheses

	EC	IMF	OECD
Labour force participation	Discouraged jobseekers due to unfavourable economic environment (-)		
		Entering of second-income earners (+)	
	Regulation (low age of retirement, education) (-)		
Employment	Destruction of human capital (-)		
	Sectoral reallocation, sluggish adjustment in prices and wages (-)		
	Regulation (employment protection law, generous unemployment benefits) (-)		
Capital accumulation		Tighter lending standards (-)	
	Increased uncertainty and risk premiums (-)		
	Eroded capacities (-)	Eroded collateral values (-)	Investments in public infrastructure (+)
TFP	Decreased productivity due to more cautious lending attitudes (-)		
	Back-scaled R&D spending (-)		
	Market cleaning-up effect (+)		
	Industry reallocation (+)		Government measures (?)
	Improving technology (+)		

While the institutions referred to agree on the post-crisis drop in the level of potential output compared to the pre-crisis trend, there is considerable uncertainty concerning the medium- and long-term paths. In certain cases in the past, the initial post-crisis drop in the potential level of output was cut back successfully, while at other times, the decline lasted for a long time. Basically, there are three alternative scenarios worth taking into consideration concerning the post-crisis trends in potential output: according to the first scenario, output will catch-up with its pre-crisis level, while under the second and third respectively, it will remain below the former trend or the decline of its level will be made even worse by the decreasing potential rate of growth (Chart 2-16).

Chart 2-16: Alternative scenarios for potential output



Summing up the scenarios of the international institutions, potential growth is expected to slow down even over the medium run, whereas the level of the potential output may remain at a level lower than before the crisis over the long term. For the sake of comparability, the study of the figures for the euro area indicates that while potential growth is expected to start at the beginning of the next decade, it will still lag behind the pre-crisis rate (Table 2-2).[46] This is in line with the finding that, in the financial crises of the 1980s and 1990s, seven years after the outbreak of the crisis, potential growth was, on average, 1 percentage point lower than the pre-crisis level (IMF, 2009c). The difference may partly be explained by the overheating of the economies prior to the crisis, which may have resulted in exaggerated estimates of potential growth. Thus, to a certain extent, the reduced rate of growth following the crisis only represented a return to the actual growth level. Signs of the same are currently to be observed: each institution has reviewed its potential growth estimates, which is an indication to the pre-crisis overheating of the economy (Chart 2-17).[47]

Rather than the crisis, the remaining difference is due to demographic reasons, i.e. the decline in the working-age population as a result of ageing. Similarly, one should not be forget that the forecasts are made for the medium term and therefore, as far as longer-term effects are concerned, one must rely on the estimations of the institutions, according to which the potential rate of growth is likely to revert to the pre-crisis level over the long run.

[46] New EU member states may grow at a faster rate than the euro area, reflecting their convergence to the advanced economies. However, even their rate of growth during the post-crisis period is expected to fall short of the growth rates before the crisis. Therefore, whereas the potential growth rates of the euro area are expected to revert to around the pre-crisis level, the same cannot be said of the new EU member states, since neither their TFP nor their capital contribution will return to their pre-crisis levels while the labour contribution is expected to deteriorate even further, due to the slowdown in the growth of working-age population (European Commission, 2009b).

[47] Since the difference between the forecasts by the various institutions may partly be due to different assumptions as well as minor methodological differences, a strict comparison would not be practical.

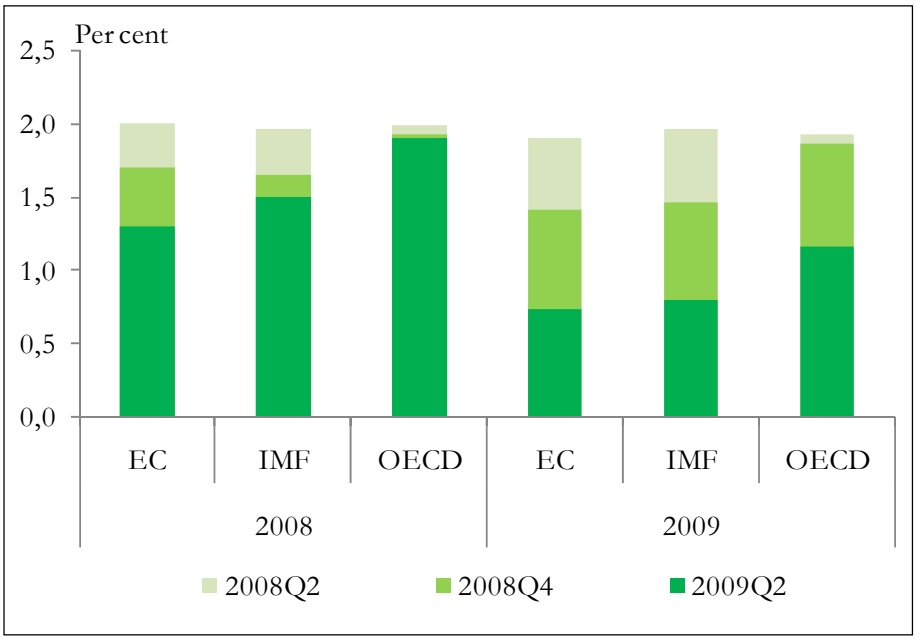
Table 2-2: Potential growth forecasts for the euro area

	EC	IMF	OECD
Previous trend (2000-2006)	1.8%	2.0%	1.9%
Short run (2009-2011)	0.9%	0.3%	1.0%
Medium run (2012-)	1.6% (-2013)	1.1% (-2014)	1.4% (-2017)

Note: Cyprus, Malta and Slovenia are not included in the OECD figures.

Source: Calculation by the authors on the basis of the IMF WEO Database, October 2009, EB (2009b); OECD Economic Outlook No. 86 Database and OECD (2009).

Chart 2-17: Revisions of potential growth in light of the crisis (Eurozone)



Source: EB Economic Forecasts, IMF WEO, OECD Economic Outlook.

References

Åslund, Anders (2009): "The East European Financial Crisis" CASE Network Studies & Analyses No. 395

Bernanke, Ben S. (2004): "Remarks by Governor Ben S. Bernanke At the meetings of the Eastern Economic Association" Washington DC, 20 February 2004 http://www.federalreserve.gov/boarddocs/speeches/2004/20040220/default.htm

Blanchard, Olivier – Milesi-Ferretti, Gian Maria (2009): "Global Imbalances: In Midstream?" IMF Staff Position Note 09/29, International Monetary Fund

Brender, Anton – Pisani, Florence (2009): "Globalised finance and its collapse" Dexia Asset Management, https://www.dexia-am.com/globalisedfinance/

Borio, Claudio – Zhu, Haibin (2008): "Capital regulation, risk-taking and monetary policy: a missing link in the transmission mechanism?" BIS working paper No. 268, Bank for International Settlements

Cecchetti, Stephen G. – Mohanty, M. S. – Zampolli, Fabrizio (2010): "The future of public debt: prospects and implications" BIS Working Papers No. 300, Bank for International Settlements

Cerra, Valerie – Saxena, Sweta C. (2005): "Growth Dynamics: The Myth of Economic Recovery" IMF Working Paper No. 05/147, International Monetary Fund

Disyatat, Piti (2010): "The bank lending channel revisited" BIS Working Papers No. 297, Bank for International Settlements
Estevão, Marcello – Severo, Tiago (2010): "Financial Shocks and TFP Growth" IMF Working Paper No. 10/23, International Monetary Fund
European Commission (2009a): "European Economic Forecast - autumn 2009" Directorate-General for Economic and Financial Affairs
European Commission (2009b): "Impact of the current economic and financial crisis on potential output" Occasional Paper No. 49, Directorate-General for Economic and Financial Affairs
Frankel, Jeffrey (2008a): "An Explanation for Soaring Commodity Prices" 25 March 2008, http://voxeu.org/index.php?q=node/1002
Frankel, Jeffrey (2008b): "Monetary policy and commodity prices" 29 May 2008, http://voxeu.org/index.php?q=node/1178
Furceri, Davide – Mourougane, Annabelle (2009): "The effect of financial crises on potential output: New empirical evidence from OECD countries" OECD Economic Department Working Paper No. 699, Organisation for Economic Co-operation and Development
Gambacorta, Leonardo (2009): "Monetary policy and the risk-taking channel" in: BIS Quarterly Review, December 2009, Special Feature, Bank for International Settlements
Hamilton, James D. (2010): "Commodity Prices Are Rising Despite Weak Economy" Nov 15, 2009, http://wallstreetpit.com/12128-commodity-inflation-in-a-weak-economy
Hornok Cecília – Jakab M. Zoltán – Tóth Máté Barnabás (2006): "Globális egyensúlyhiányok korrekciója: illusztratív szcenáriók Magyarországra" MNB-tanulmányok No. 59, Magyar Nemzeti Bank
IMF (2005): "World Economic Outlook, September 2005: Building Institutions" International Monetary Fund
IMF (2006): "Awash with cash: Why are corporate savings so high?" in: World Economic Outlook, April 2006: Globalization and Inflation, International Monetary Fund
IMF (2007): "World Economic Outlook, October 2007: Globalization and Inequality" Chapter 5, International Monetary Fund
IMF (2009a): "Regional Economic Outlook: Europe – Securing Recovery" October 2009, chapter 2, International Monetary Fund
IMF (2009b): "World Economic Outlook, April 2009: Crisis and Recovery" Chapter 3, International Monetary Fund
IMF (2009c): "World Economic Outlook, October 2009: Sustaining the Recovery" Chapter 1 és 4, International Monetary Fund
Luengnaruemitchai, Pipat – Schadler, Susan (2007): "Do Economists' and Financial Markets' Perspectives on the New Members of the EU differ?" IMF Working Paper No. 07/65, International Monetary Fund
Moec, Gilles – Frey, Laure (2006): "Global imbalances, savings glut and investment strike" Banque de France, Occasional Papers No. 1
OECD (2009): "Economic Outlook No. 86" Organisation for Economic Co-operation and Development
Reinhart, Carmen – Rogoff, Kenneth (2009): "The Aftermath of Financial Crises" CEPR Discussion Paper No. 7209
Reinhart, Carmen – Rogoff, Kenneth (2010): "Growth in a Time of Debt" NBER Working Paper No. 15639
Stock, James H. – Watson, Mark. W. (2003): "Has the Business Cycle Changed and Why?" in: Monetary Policy and Uncertainty: Adapting to a Changing Economy, A symposium sponsored by the Federal Reserve Bank of Kansas City, Jackson Hole, Wyoming, August http://www.kc.frb.org/Publicat/sympos/2003/pdf/Stock-Watson.0902.2003.pdf
UNCTAD (2008): "International Capital Flows, Current-Account Balances and Development Finance" Chapter III., in Trade and Development Report, Geneva, United Nations Conference on Trade and Development
White, William (2008): "Globalisation and the determinants of domestic inflation" BIS Working Papers No. 250, Bank for International Settlements
Wray, Randall L. (2008). "The Commodities Market Bubble: Money Manager Capitalism and the Financialization of Commodities" Public Policy Brief 96, The Levy Economics Institute of Bard College

3. Major determining factors of the vulnerability of the Hungarian economy

The Hungarian economy was hit particularly hard by the crisis, because the increase in external and government debt was rapid in the years before the crisis, whilst economic growth gradually decelerated and lagged behind Hungary's competitors in the region. First, this chapter provides an overview of the factors that determined the process of indebtedness prior to the crisis, the sectors can be considered especially vulnerable, and where adjustment is necessary. The second part of this chapter focuses on possible underlying reasons for the deceleration in real economic performance observed since the turn of the millennium.

According to our analysis, Hungary's external indebtedness and – compared to the level of development of the economy – general government debt are high by international standards, and these factors add to the country's financial vulnerability. Excessive indebtedness resulted mainly from persistently loose fiscal policy, but in the years preceding the crisis loans to households may have also already exceeded the amount justified by the country's level of development. The high fiscal deficit absorbed a considerable portion of domestic savings, which increased the private sector's dependency on external funds. On the one hand, this is reflected in the financing structure of the banking sector, and on the other hand this greatly contributed to the lending in foreign currency. The vulnerability of the country may be reduced if government debt gradually declines over the medium term. Reducing the financing requirement of the state is justified from the aspect of the continuously meeting the private sector's financing requirement as well, because presumably the private sector will have less access to finance from foreign sources in the future than in the pre-crisis period. As a result of households' rapid indebtedness and easing lending standards, many households may have taken excessive risks in the years preceding the crisis, which justifies a tightening of the regulations of lending to households.

As far as the gradual deterioration in economic performance observed before the crisis is concerned, we can only confirm most of our conclusions from our earlier convergence reports. We believe that although GDP growth declined markedly only following the fiscal adjustment in 2006, the unfavourable developments observed in the capital and labour markets had already indicated the slowdown in trend growth much earlier. At the same time, aggregate developments in productivity seem to have been unbroken during the whole period under review. Therefore, this factor did not contribute to the deceleration of the economy, although the growth rate of productivity cannot be considered high in international comparison. It is unfavourable, however, that there is a significant difference in productivity between domestic and foreign-owned companies, i.e. a kind of dual economic structure is typical.

The fiscal measures adopted in the past one year as well as the steps taken in the direction of labour market efficiency and increasing macro stability may support medium-term growth from the side of labour demand and supply and investment as well. However, in international comparison further significant steps forward seem necessary in terms of improving growth incentives. Although our marginal tax wedge surplus on labour declined substantially as a result of the measures affecting the labour market, it is still 5–6 percentage points higher than the average of the Visegrád countries. In addition, the surplus is even larger at above-average income levels, which creates incentives for tax evasion. Although the tightening of social transfers may lead to growth in activity, as Hungary's international backwardness in employment is mostly typical in the case of unskilled labour, the question remains as to what extent those entering the labour market will increase the number of employed and the number of unemployed.

3. 1. Assessment of Hungary's indebtedness

Hungary had become highly indebted prior to the outbreak of the crisis. The international financial crisis revealed that the earlier growth model relying on external financing cannot be continued. Moreover, in order to mitigate the vulnerability of the country, it is expedient to reduce the high amount of external debt accumulated earlier. The adjustment may substantially reduce the growth rate of the economy over the medium term as well.

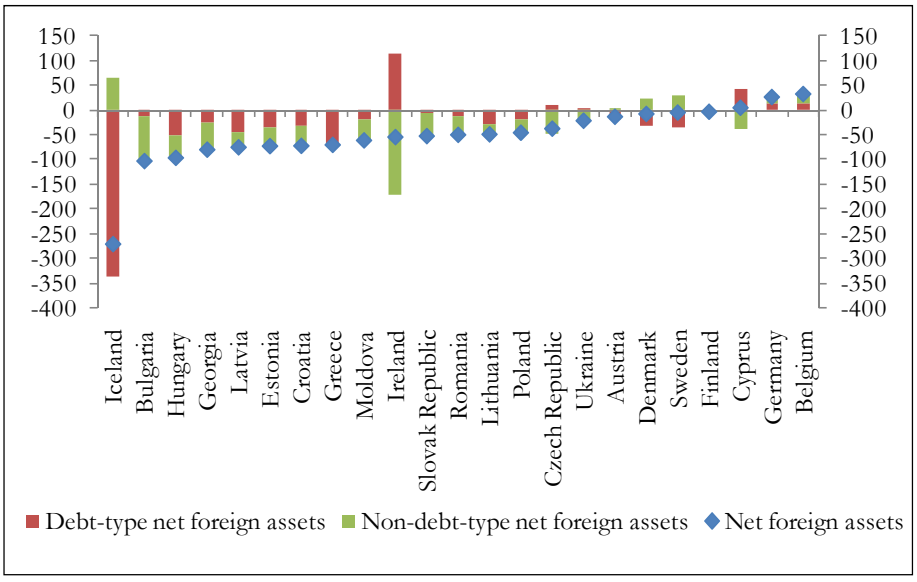
Significant external financing and the related balance of payments deficit was typical of each country in the region before the crisis, but there were significant differences in the structure of financing. While in some of these countries the deficit of the balance of payments was basically financed from non-debt-generating sources, debt-generating ones played a greater role in other countries. The differences between the

countries are partly explained by the proportions of external financing of investment, household consumption and the fiscal deficit. Where external funds were mainly used for financing private and government consumption, debt-generating financing was of higher importance.

Over the longer term, both forms of financing may result in a deterioration in the income balance and the balance of payments. In the case of debt-type financing the interest paid to abroad, while in the case of non-debt-generating financing dividend-type payments to abroad may increase. However, the two types of financing carry different risks. The expected yield on non-debt-generating financing is usually higher than the interest paid on debt-type financing. Consequently, non-debt-generating raising of capital may impair the equilibrium of the balance of payments to a greater extent in the long run. At the same time, if the technology transfer associated with the capital inflow adds to potential GDP and the competitiveness of the economy as well, the unfavourable effect on the balance of payments may be considerably lower. The advantage of non-debt-generating financing is that it typically appears in long-term investments, so the risks associated with the renewal of financing do not arise directly. Besides, dividend-type payments are procyclical; therefore, in parallel with the economic downturn the related financing requirement may decline. By contrast, the renewal of debt-type liabilities may exactly become risky in the event of an economic downturn, and as a result, the interest paid on the outstanding debt may also increase gradually. Owing to financing risks associated with the outstanding debt, in crisis periods primarily the assessment of debt-generating external financing becomes unfavourable.[48]

Even compared with the other countries in the region, Hungary relied on external funds substantially in the pre-crisis period. As a result, the ratio of net financial assets to GDP is low in both international and regional comparisons. The structure of external financing has increasingly shifted towards debt-type financing, and thus the amount of debt-type net liabilities is extremely high among European countries (Chart 1).

Chart 3-1: Net financial assets in European countries
2008; as a percentage of GDP



Source: Eurostat.

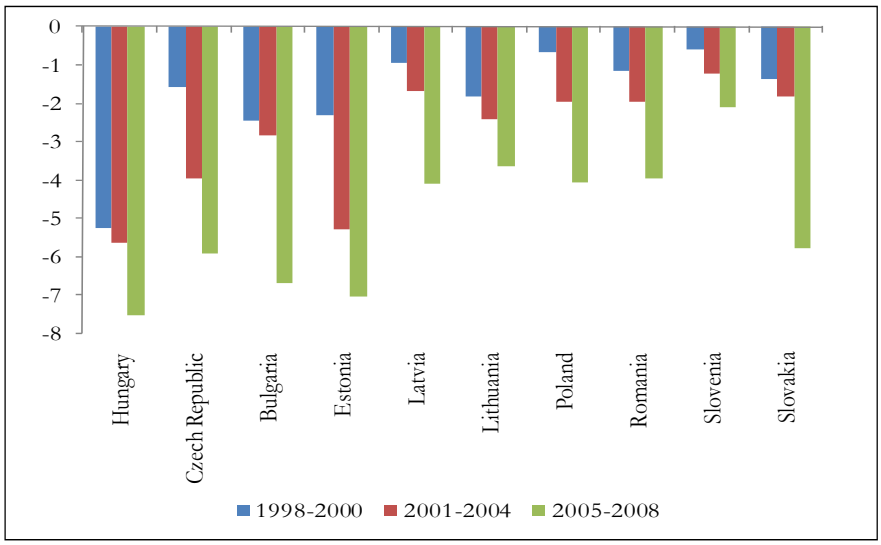
As a result of the substantial external financing typical of the pre-crisis period, compared with other converging European countries interest-type and dividend-type payments to abroad on net financial assets

[48] The advantages and disadvantages of debt-creating and non-debt-creating financing are analysed in more detail by Komáromi (2008).

are quite high; in the period between 2005 and 2008 they already exceeded 7 per cent of GDP on average (Chart 2).[49] The high external debt and the substantial interest-type and dividend-type payments – associated with earlier external financing and impairing the balance of payments – considerably increase the vulnerability of the Hungarian economy.

Chart 3-2: Balance of income realised on investments in Central and Eastern European countries

As a percentage of GDP



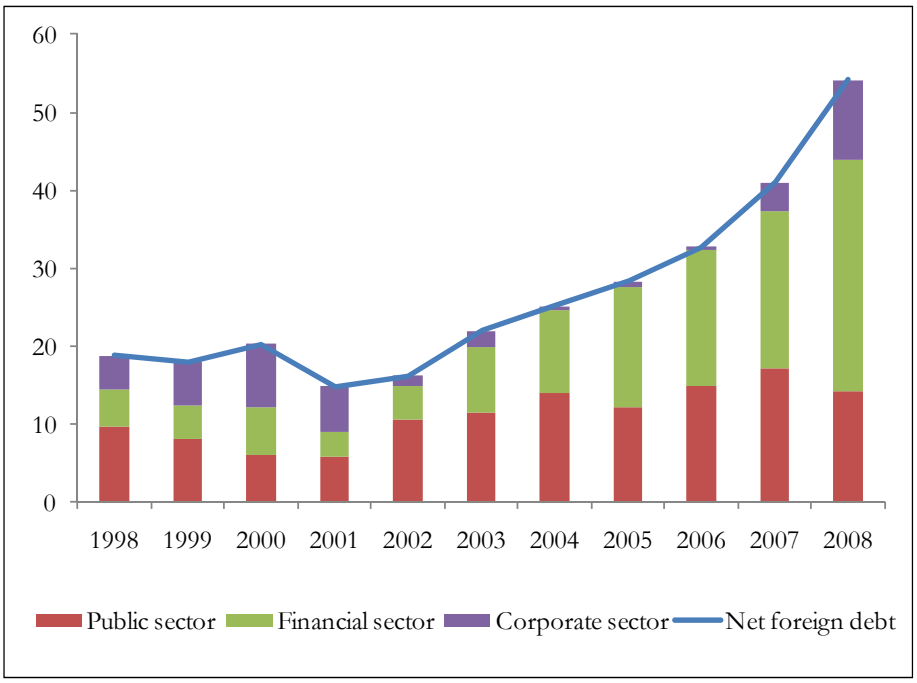
Source: Eurostat.

As far as the distribution of external debt among the main sectors of the economy is concerned, the state, the banking sector and non-financial corporations both account for a significant share in the external debt. The magnitude of external debt of the individual sectors by itself reveals little about which sectors may be excessively indebted and thus responsible for the vulnerability of the country. For example, between 2002 and 2006, external government debt increased only moderately, while fiscal deficits were high. At the same time, the financing of fiscal deficits absorbed a significant portion of domestic savings, directing the other sectors towards external financing. Therefore, the increase in the indebtedness of the state may have played an important role in the increase in external indebtedness in this period as well.[50]

[49] The external liabilities of Hungary and the related financing burden are analysed by Koroknai (2008).

[50] See also Chart 1-7 on this issue.

Chart 3-3: External debt of individual economic sectors (as a percentage of GDP)



Source: Eurostat.

In this chapter, we discuss how excessive the indebtedness of the main sectors of the Hungarian economy (general government, households, non-financial corporations and the banking sector) can be considered on the basis of various indicators, i.e. where a significant adjustment may be justified. The analysis of indebtedness at the sector level may help in mapping out Hungary's growth prospects and provide guidance in terms of what economic policy and regulatory changes are required to reduce vulnerability.

3. 1. 1. Real convergence and debt dynamics

In order to identify the excessive indebtedness it is inevitably necessary to determine some benchmark for comparison. The following presents an overview of the starting points which are provided by theoretical models and empirical estimates.

At least two important factors must be taken into account in assessing the debt dynamics of the Hungarian economy. First, the correlation between the development of a country and the depth of the financial intermediary system is positive. The more developed a country is, the more opportunities there are to smooth income fluctuations. Accordingly, in parallel with economic development, loans to the private sector may increase continuously. It is important to emphasise that deepening of the financial intermediary system means an increase in gross outstanding debt, i.e. the process does not necessarily entail external indebtedness of the economy. Analysing the relationship between the development of the economy and the depth of financial intermediation, Kiss et al. (2006) estimated equilibrium credit stocks for the region's countries. One of the main conclusions of the study was that even in the early 2000s the depth of financial intermediation in the countries of the region was typically considerably lower than the level justified by their development, and thus the dynamic increase in the private sector's outstanding debt can be considered as a natural process.

The other important aspect is that Hungary is converging to the more developed European countries. The literature on the convergence of less developed countries argues that converging countries do not have sufficient funds compared to their investment opportunities. Consequently, the process of catching up can be accelerated by increasing external indebtedness. Therefore, maintaining a significant balance of payments deficit may be optimal for converging countries even over a longer period of time. Despite the

intuitive theoretical argumentation, the empirical relationship observed between external indebtedness and the speed of convergence is not unequivocal. Numerous groups of countries have converged in parallel with an improvement in external indebtedness indicators. Its main underlying reason is that convergence which also relies on an increase in indebtedness entails serious risks. A country that becomes indebted also becomes more vulnerable to exogenous shocks which influence the willingness to take risks, while it is also difficult to determine the level of optimal indebtedness, so that indebtedness can easily become excessive. While experience disproves the theory in many countries, the experience of European converging countries is broadly in line with it. This is basically explained by the fact that the political, legal and trade integration of the converging countries created an opportunity for relatively fast convergence, while the integrated European financial markets provided the funds necessary for the increasing indebtedness of these countries in the pre-crisis period.[51]

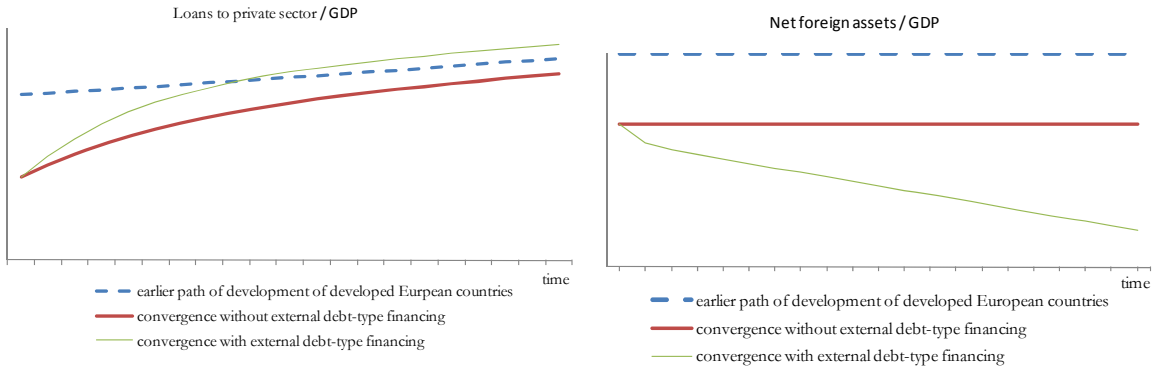
It is important to emphasise that the deficit on the balance of payments and the magnitude of indebtedness are also considerably influenced by the economic policy decisions of the catching-up countries. First, the size of the fiscal deficit is typically closely correlated with the deficit on the balance of payments, and thus a permanently loose fiscal policy may add significantly to external debt. Second, it can also accelerate the process of indebtedness if a country's banking sector is integrated into the European financial system to a considerable extent. As the integration of the Hungarian banking sector is already at a very advanced stage, domestic economic policy can only have a limited effect on this latter factor.

Bussiere et al. (2004), Vamvadikis (2008) and Ca' Zorzi et al. (2009) attempt to quantify the optimal balance of payments deficit for converging European countries. Based on their findings, even a significant balance of payments deficit may be justified in some countries. According to the results for Hungary, a 4–6 per cent balance of payments deficit would have been justified around the mid-2000s. The actual data permanently exceeded this value by several percentage points. In addition, the use of external funds was not favourable either, because these funds financed public and private consumption to a great extent, and thus they did not facilitate the sustainability of convergence for a longer term.

Based on the above, there are two kinds of approaches to the assessment of the indebtedness of economic sectors. The first approach assumes that the optimal indebtedness of individual sectors in the converging countries can be determined on the basis of the earlier development path of the more developed countries. The second approach also takes into account that convergence can be accelerated by using external funds. These two approaches are illustrated in Chart 3 through the changes in two indicators measuring indebtedness. In the course of the convergence process, the initially underdeveloped financial intermediary system is deepening continuously. In the event that the convergence process is accelerated by the use of external funds as well, the increase in loans to the private sector is faster, and during convergence – compared to the GDP – it may even exceed the values typical of the earlier, similar level of development of the more developed countries. Convergence relying upon external funds is, of course, also reflected in the changes in net external assets of the converging country. The more external funds are used, the more different the ratio of net external assets to GDP is from the values that were typical of the more developed countries in the past.

[51] Hungary's external financing requirement and the related debt path are analysed in detail in Chapter 1.

Chart 3-4: Changes in optimal debt paths belonging to alternative convergence paths



An obvious question that arises is which of the two approaches deserves more attention when assessing the Hungarian debt path. The second approach is more appropriate if convergence of the economy is progressing on a safe path, and the increasing external debt can be financed with negligible risks. However, the convergence of the Hungarian economy has slowed down considerably. Additionally, the global financial crisis also revealed that high external debt entails considerable risks within the European Union as well, resulting in a significant decline in the attractiveness of growth built on external financing. Based on all the above, if an indicator of indebtedness is notably worse than the European average, it is considered a risk in the analysis. At the same time, worse indicators can partly be justified with the convergence process; therefore, great emphasis is also laid upon regional comparison when the risks are assessed.[52]

Analysis of the indebtedness of the main sectors

The risks related to the outstanding debt of the government, households and non-financial corporations are evaluated below. The assessment of the debt stock is carried out with an international comparison of various indicators of vulnerability. The debt indicators examined can basically be classified into three types: stock-type, flow-type and structure-type indicators. In addition to the above three sectors, the main risks related to the banking sector are also reviewed. The indicators used in the analysis are summarised in the table below. The comparison of debt indicators mainly uses 2008 data, in which the effect of the crisis is reflected only moderately.

Table 3-1: Indicators used for the analysis of risks related to debt stocks

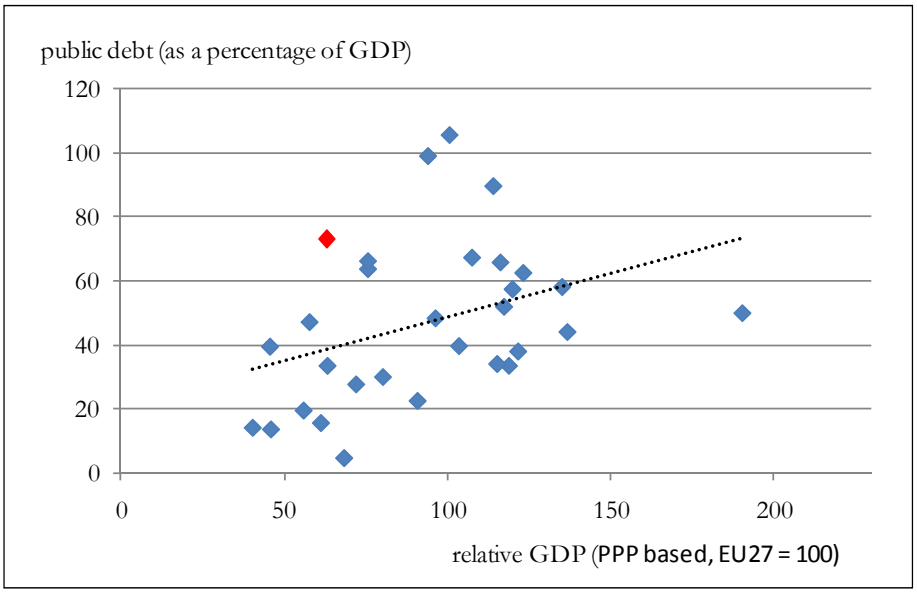
Government	Households	Non-financial corporations	Financial system
Debt / GDP	Debt / GDP	Debt / GDP	Capital adequacy ratio
Interest payments / GDP	Net financial assets / GDP	Net financial assets / GDP	Loans / Deposit
Foreign debt /GDP	Debt service burden / GDP	Interest payments / GDP	External funds / GDP
FX debt / GDP	FX loans/ Total loans	FX loans/ Total loans	FX exposure
FX exposure / GDP	FX exposure / GDP	FX exposure / GDP	

[52] Some indicators for assessing the indebtedness of households and non-financial corporations were calculated by Gergely Fábián and Péter Koroknai.

3. 1. 2. General government

It is not possible to determine the optimal size of government debt only on the basis of international comparison.[53] The optimal size of government debt in a given period can be significantly affected by economic policy preferences and the total debt accumulated prior to that period. At the same time, several arguments may be brought up that for less developed countries it may be more advantageous to aim at a lower level of government debt. The less developed an economy is, the scarcer the sources of financing are for it in the international money market. The underlying reason is that development may be an indicator of the size of taxable incomes, the efficiency of tax collection and the quality of economic policy in general. However, it is also true that with high government debt less developed countries need external funds, as households' financial wealth is also lower, due to which domestic savings are typically unable to finance the rapid increase in government debt. External indebtedness, in turn, further increases the risks of higher government debt. The negative relationship between the development of the economy and the size of government debt can be proven empirically as well in European countries.

Chart 3-5: Gross government debt and economic development in European countries (2008)

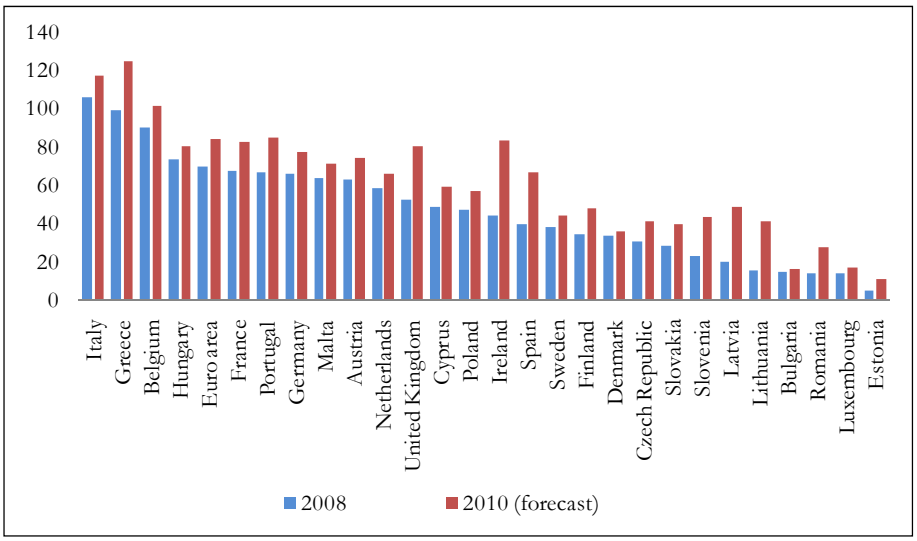


Source: Eurostat.

Although the Hungarian economy is still much less developed than the economies of the more developed European countries, before the crisis the public indebtedness was high by European standards. Compared with the countries of the region, public debt was extremely high; in 2008, average government debt in the region did not reach 40 per cent of GDP, whereas the Hungarian debt level was around 70 per cent. During the crisis, European countries used the tool of fiscal easing to various extents, and the relative position of Hungary improved. European countries, however, presumably intend to reduce their government debt levels over the medium term, and so a gradual debt reduction is justified for Hungary in any case.

[53] For more details, see P. Kiss et al. (2005).

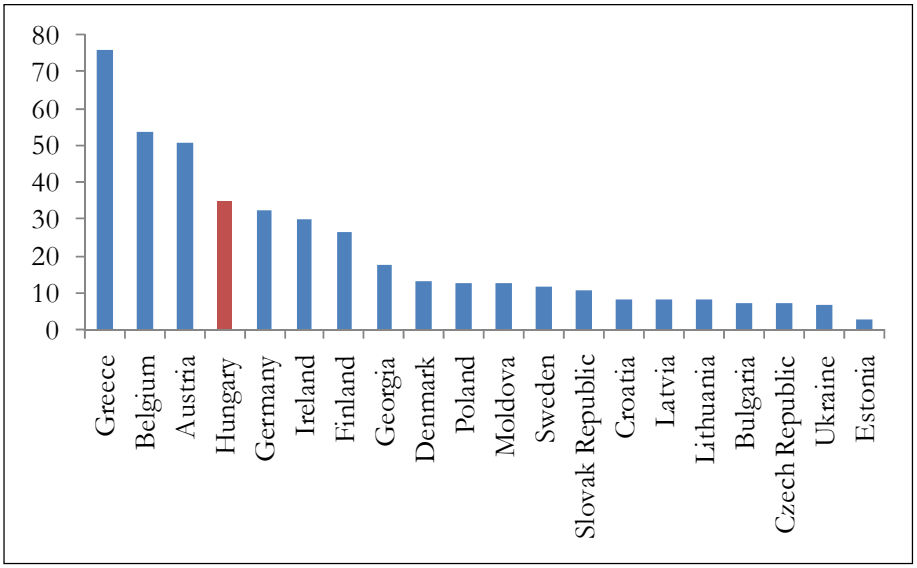
Chart 3-6: Gross government debt in European countries (as a percentage of GDP)



Source: Eurostat.

In the pre-crisis period, the state financed itself directly from abroad to a significant extent by taking loans and issuing bonds abroad. Foreign investors hold a substantial share in the forint government securities market as well, and thus, overall, a considerable portion of the government debt is financed by external sources. Therefore, in terms of the continuous financeability of the general government, global shocks may represent a serious risk even if they do not affect the Hungarian economy directly.[54]

Chart 3-7: External debt of the general government in European countries (2008, as a percentage of GDP)



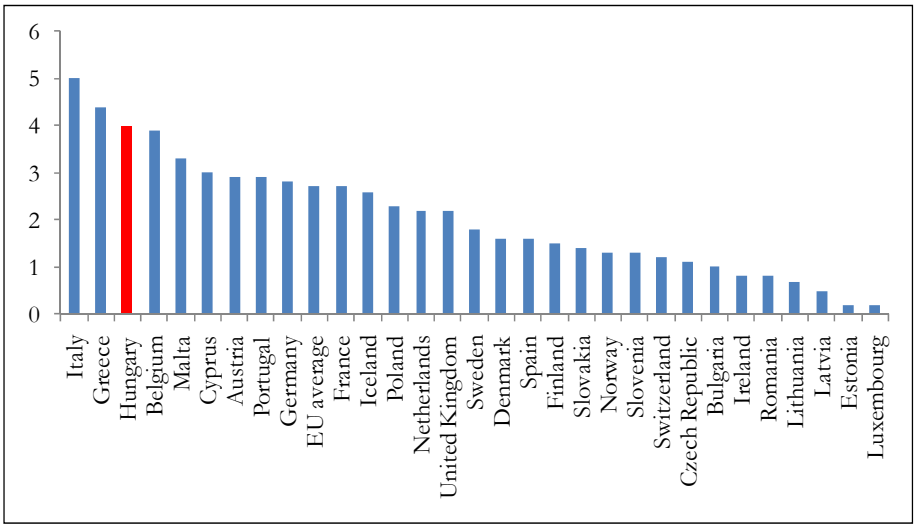
Source: BIS.

Excessive indebtedness is also shown by the ratio of the government's interest expenditures to GDP. It is important to emphasise that the interest burden on the government debt was already heavy in the relatively benign international financial environment as well, which was caused by the high total debt and

[54] Investors strive to diversify their portfolios. Therefore, the share of non-residents in government debt financing may be high even if the given country is not indebted to the rest of the world in net terms. In this case, the external debt of the general government carries a smaller risk. In Belgium, for example, the net stock of debt-type assets of the country is positive, so the high share of non-residents in government debt financing is mainly attributable to diversification.

the risk premium of the Hungarian government securities, which was relatively high in European comparison. In terms of the interest burden on government debt, two factors may pose risks in the coming years. First, in parallel with the turnaround in the international interest rate cycle, the interest burden may continue to grow even without an increase in the debt stock. In addition, as a result of the crisis, willingness to take risks may have continued to decline over the longer term as well. Consequently, compared to the pre-crisis period the risk premium of government securities may react to the changes in the opinion formed of the domestic economic policy, including fiscal policy in particular, in a more sensitive manner.

Chart 3-8: Interest expenditure of the general government in European countries (2007, as a percentage of GDP)

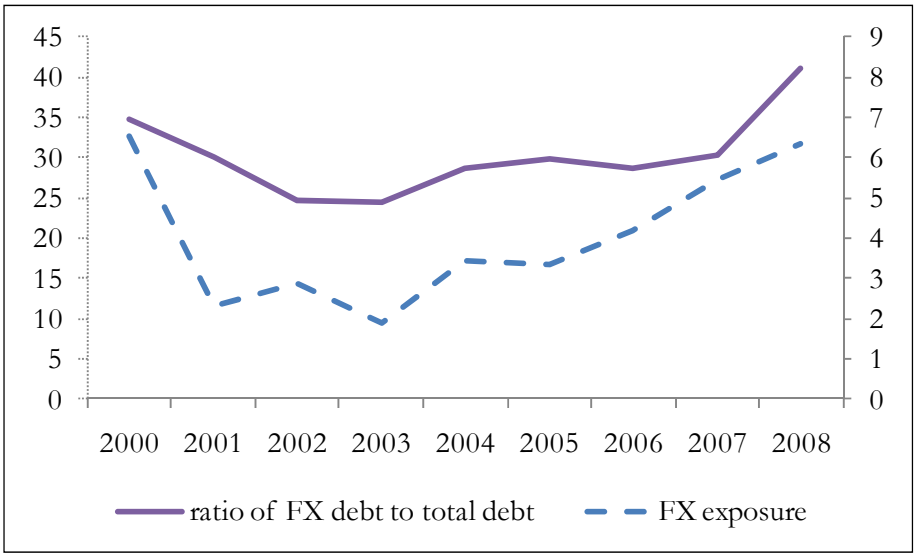


Source: Eurostat.

In terms of general government financing, another problem may be that a portion of the debt is denominated in foreign currency. Therefore, changes in the exchange rate of the forint may result in significant fluctuations in the gross debt-to-GDP ratio frequently monitored by investors. However, basically owing to the foreign exchange reserves, the foreign exchange exposure of the general government consolidated with the MNB is not that significant. Accordingly, the effect of possible depreciation on the financing burden of the debt stock of the consolidated general government is relatively moderate.[55]

[55] Foreign exchange exposure is defined as the net of foreign exchange liabilities and assets as a percentage of GDP.

Chart 3-9: Foreign exchange exposure of the general government (as a percentage of GDP) and the share of its foreign exchange debt within total debt



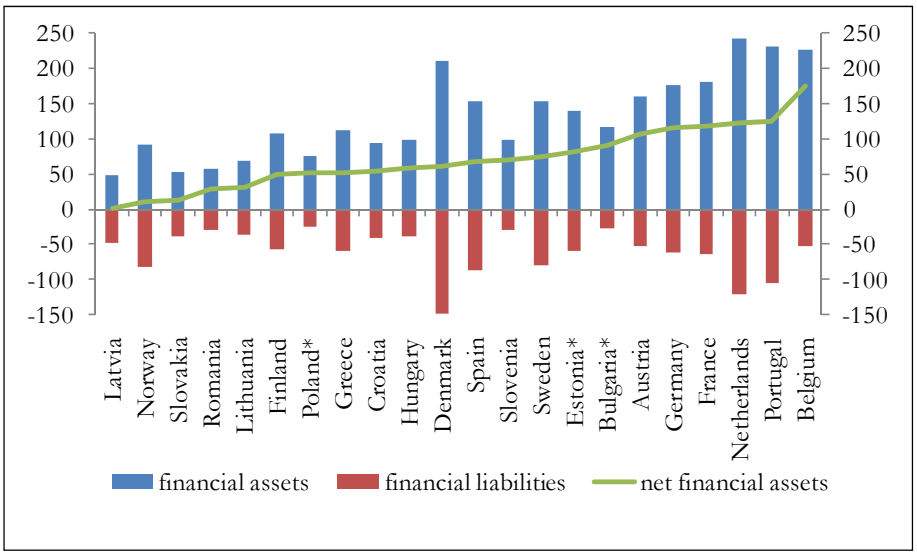
Sources: Government Debt Management Agency (ÁKK), MNB calculations.

Based on the above indicators, compared to the level of development of the country the indebtedness of the general government can be considered excessive in any case. The high interest expenditures of the government represent a permanent burden on the budget, while the high total debt carries an important renewal risk. In order to reduce risks, it is justified to gradually reduce government debt over the medium term.

3. 1. 3. Households

There is a positive correlation between the development of the economy and the depth of the financial intermediary system and households' net financial wealth. A more developed financial intermediary system allows households to invest or consume to the debit of their future income, so total loans to households are higher. However, a concomitant aspect of development is that the stock of accumulated capital is high as a result of earlier investment. Most of this capital accumulation is financed by households directly or indirectly. Accordingly, households' net financial wealth is higher in developed countries than in converging countries.

Chart 3-10: Financial assets, liabilities and net financial assets of households (2008, as a percentage of GDP)



Source: Eurostat.

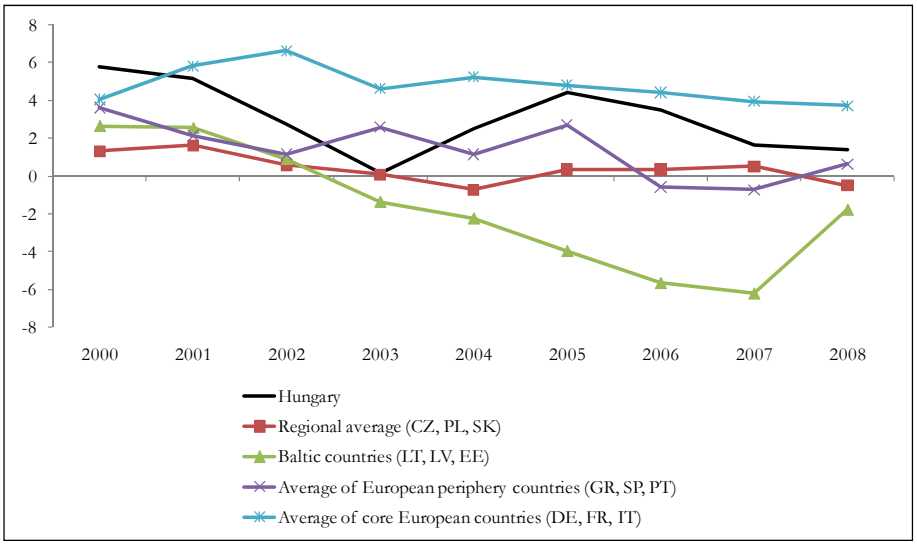
*Note: Only 2007 data are available for countries marked with *.*

In international comparison, the net financial assets of Hungarian households are in conformity with the level of development of the country and the catching-up character of the economy. Compared with the countries of the region, the financial wealth of Hungarian households is relatively high (Chart 8). At the same time, reviewing the pre-crisis period, net financial wealth as a proportion of GDP declined slightly in parallel with convergence, amounting to 65 per cent of GDP in 2001 and only to 59 per cent in 2008. This raises the question to what extent the savings level of households preceding the crisis was a cause of the external indebtedness. Households' net financial savings are analysed in detail in an international comparison in the box below.

Box 3-1: Size of the household sector's net financial savings

In the years prior to the crisis, net financial savings of Hungarian households were relatively high in international comparison. Financing capacity, which declined as a result of extensive lending to households preceding the crisis, suggested that the low level of households' financial savings also significantly contributed to the external imbalance. However, international comparison shows that the relatively low Hungarian figure of the pre-crisis years exceeds not only that of the Baltic countries which experienced a much greater increase in loans than Hungary, but also the average of the countries in the region and of the peripheral countries of the euro area. The financing capacity of the Hungarian households was typically exceeded by only the financial savings of the most developed countries, where borrowing was lower than in Hungary as liquidity constraints had eased much earlier and the already existing high amount of household loans. Therefore, the international comparison suggests that although households' financial savings declined in the pre-crisis years, their level continued to be relatively high, and thus the high external imbalance is not primarily attributable to insufficient household savings.

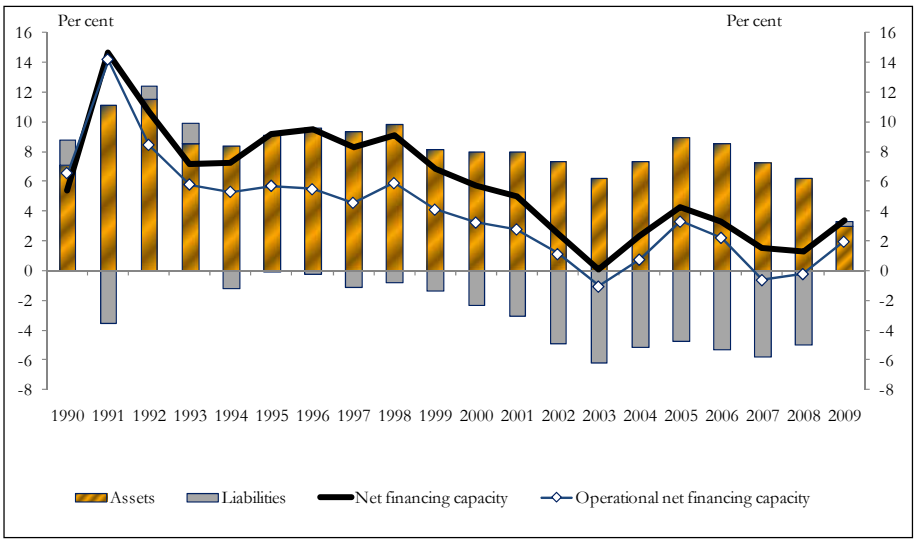
Chart 3-11: Net financial savings of the household sector as a proportion of GDP in international comparison



Source: MNB.

The financial savings of the Hungarian households increased following the crisis, but there are still many questions in connection with their future development. Developments in households' financial savings after the change of political regime were basically influenced by the easing of liquidity constraints. Until 1998, households' net financing capacity reached a relatively high level, partly as a result of the high inflation and partly as a result of limited lending by banks. The low in 2003 is mainly attributable to lending that was strengthening because of the housing subsidy scheme and after the termination of this scheme financial savings increased slightly. With the increase in foreign exchange lending, however, financial savings started to decline again, and were further reduced by the consumption smoothing response to the government's tightening measures of 2006. As a consequence of the crisis, borrowing fell, and thus the net financial savings of the household sector increased markedly, despite the decline in financial assets. In the period since the restart of bank lending to households in the late 1990s, the operational net financing capacity (excluding the effect of inflation) was around 2–4 per cent of GDP at the time free from extreme surges in loans, and it is not expected to be permanently higher than that in the future either.

Chart 3-12: GDP-proportionate net financing capacity of the household sector

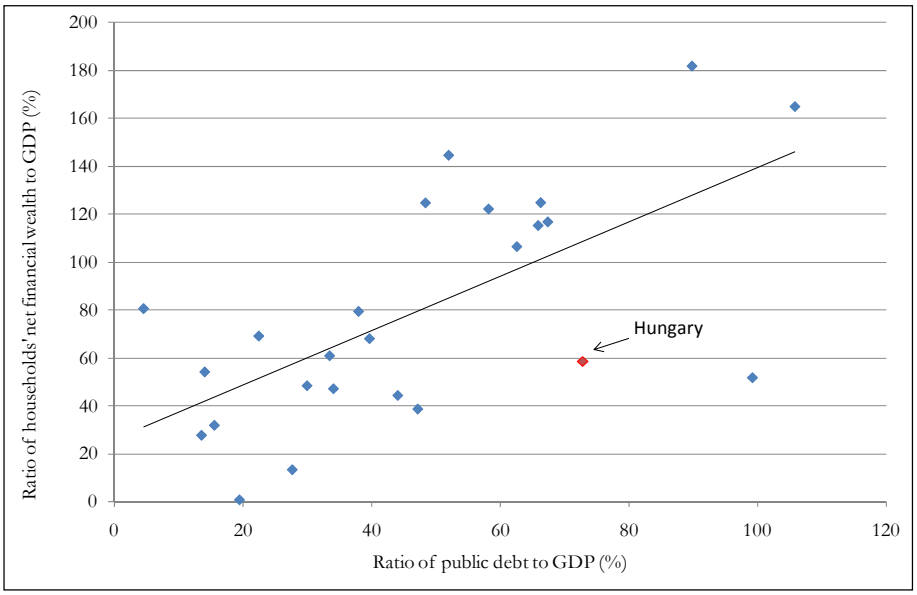


Source: MNB.

Although the financial savings of the Hungarian households are high in international comparison, it is also worth taking into account the indebtedness of the state in the evaluation of households' financial wealth. The burden of financing government debt is mainly borne by the households indirectly, so the vulnerability of the country is mostly determined by the net position of these two sectors. From this aspect, it is desirable that the net financing capacity of Hungarian households exceed the values typical in the region. In the chart below it is apparent that comparing households' wealth to government indebtedness, the financial wealth of Hungarian households seems to be rather low, and thus from the aspect of the vulnerability of the overall economy the picture is not favourable.

It also worth mentioning that the trend of net financing capacity is slightly decreasing from the second half of the 1990s, in parallel with increasing lending to households. To gradually decrease the vulnerability of the economy, it is essential that these tendencies do not continue.

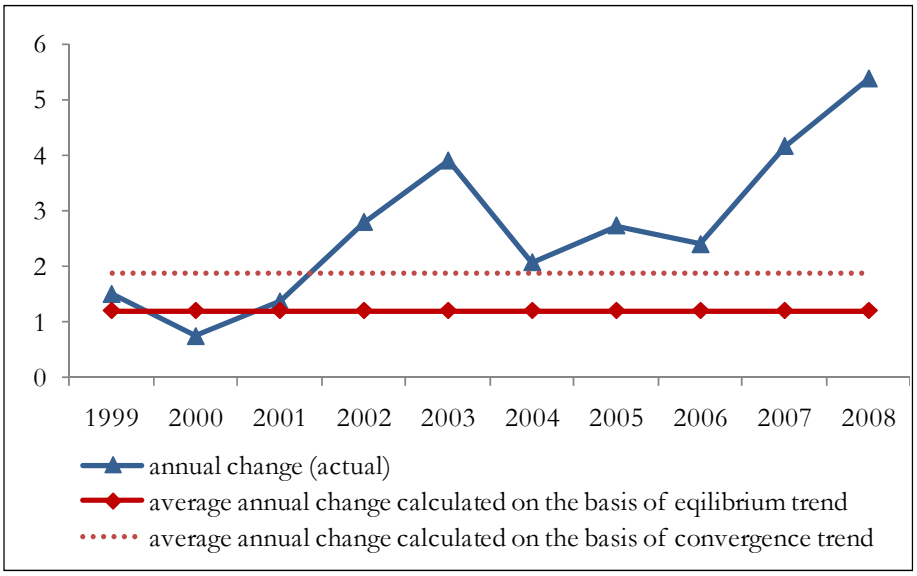
Chart 3-13: Households' net financial wealth and government debt in Europe in 2008



Source: Eurostat.

The indebtedness of Hungarian households was examined by Kiss et al. (2006) as well. The study compared the increase in loans to households to the equilibrium credit growth paths estimated for more developed countries and – taking account of the initial underdevelopment of the Hungarian financial intermediary system – to an equilibrium converging credit growth path. Complementing the estimates of the study with the data for recent years, 2003, 2007 and 2008 were the years when actual dynamics significantly exceeded both equilibrium growth and convergence dynamics.[56] Lending surged in 2003 and in the preceding years on account of the government subsidy for housing loans. Borrowing in this period was motivated by interest rate conditions that were considerably more favourable than what could be achieved in the market. The favourable interest rate conditions resulted in a rapid increase in fiscal expenditures related to the interest subsidies, and at the same time significantly reduced the risks associated with outstanding loans to households through the low interest cost and the typically fixed interest rates on mortgage loans. Later, owing to the tightening of the conditions of the subsidy, the weight of foreign exchange based lending increased steadily. Compared to the equilibrium paths the increase in total loans in 2007 and 2008 was already so high that in these years a lending boom could be considered a fact.

Chart 3-14: Annual change in the loan-to-GDP ratio of Hungarian households (percentage points)[57]



Source: Own calculations based on Kiss et al. (2006).

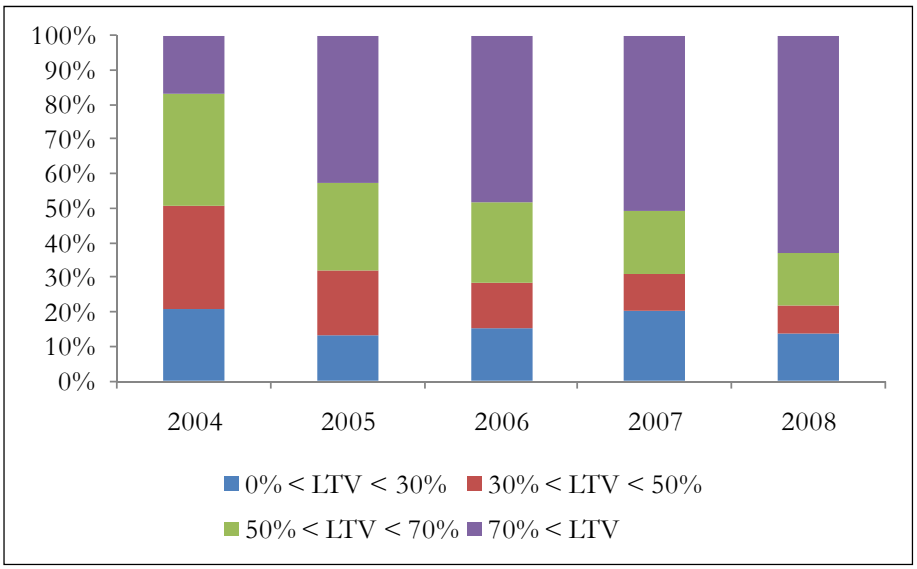
In these years, total household debt presumably already exceeded the level justified by the country's stage of development. There may have been several underlying reasons for the surge in lending to households in the years preceding the crisis. It is possible that households considered the income-reducing effect of the fiscal adjustment to be temporary, so their demand for loans increased. In this case, the increase in lending can mainly be considered a cyclical phenomenon, and in terms of longer-term household indebtedness it does not carry any significant risks. However, lending standards also eased steadily in this period, i.e. the upturn in lending was supported by increasing supply as well. As a consequence of the loose lending

[56] The picture is very similar if we look at the household savings rate. See also the previous box.

[57] Two kinds of benchmarks were used for the assessment of the growth rate of actual total loans. The annual change calculated on the basis of the equilibrium trend shows the magnitude of expansion of total loans that would be justified by the increase in the economic development of Hungary in the period under review. The annual change calculated on the basis of convergence also takes into consideration that at the beginning of the period the depth of the Hungarian financial intermediary system was significantly below the level justified by the level of development, and we assume that this gap is gradually narrowing.

standards, presumably many households took overly high risks, which entails a risk over the longer term as well, and also justifies the tightening of regulations related to lending.

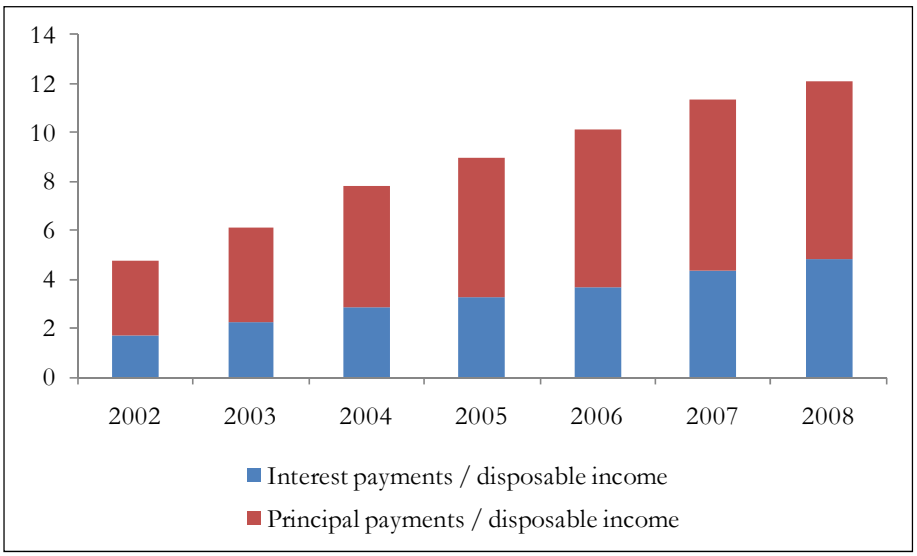
Chart 3-15: Distribution of new housing loans to households by loan-to-value ratio (LTV)



Source: MNB.

With the surge in lending to households, the debt service burden on loans to households also increased steadily. The ratio of the repayment burden to income reached the value typical of more developed countries (in 2006, for example, this value was 10 per cent in the euro area and 14 per cent in the USA). With a lower level of income, households spend a smaller portion of their income on goods and services that they can give up relatively more easily without any significant deterioration in their living conditions. Therefore, compared to more developed countries, Hungarian households are less able to tolerate the fluctuations in the debt service burden, and so the current value of the debt service burden can already carry risks.

Chart 3-16: Households' debt service burden

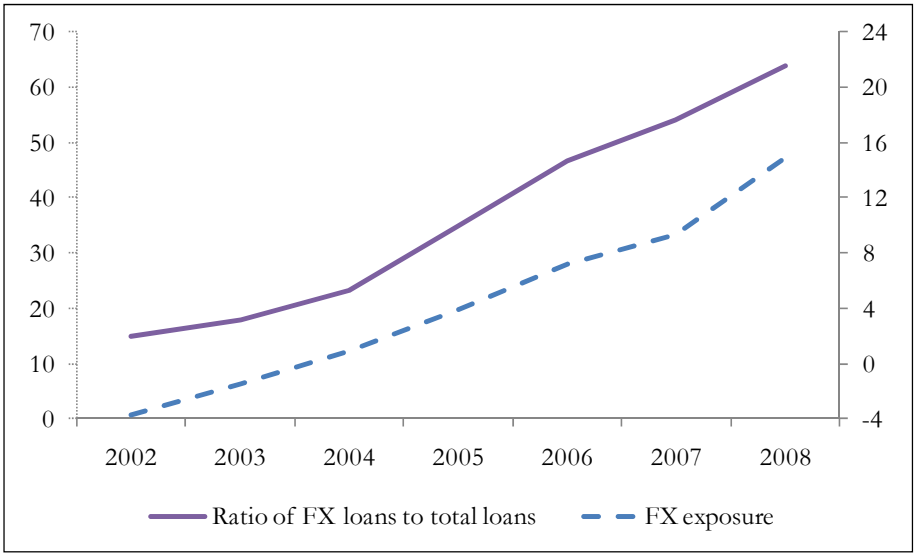


Source: MNB.

The debt stock of the household sector can be considered risky mainly because of its currency structure. Foreign exchange loans provided by commercial banks carry risks for borrowers basically from two

aspects. First, changes in the exchange rate of the forint quickly reprice loans denominated in foreign currency, and may significantly alter the size of the debt service burden. Second, commercial banks determine the interest rate on foreign exchange loans primarily on the basis of the cost of their foreign exchange sources, which may change considerably even over the short term. The significance of the above two risks is increased by the fact that based on the conditions of foreign exchange loans commercial banks are allowed to quickly modify the instalments after changes in both the exchange rate and the financing cost. Consequently, the financing burden of foreign exchange loans may increase considerably even in a few months' time. Owing to the significant risks related to foreign exchange loans, it is important that both lenders and borrowers be aware of the magnitude of the risks taken. Over the longer term, risks related to household loans may decline if forint-based loans come to the fore. At the same time, interest risk may be significant also in the case of forint-based loans; therefore, the spread of fixed-rate products may be justified in the case of longer-term loans as well.[58]

Chart 3-17: Share of foreign exchange debt and foreign exchange exposure of households (as a percentage of GDP)



Source: MNB.

Based on the above indicators, prior to the crisis households became indebted too quickly, and total debt already exceeded the level justified by the stage of development of the country. Indebtedness is expected to be corrected in the coming few years. Considering that excessive indebtedness relates to a few years, households' total loans as a proportion of GDP are expected to decline only moderately, but the high loan dynamics typical of the pre-crisis period will not continue. However, in order to reduce the risk of the debt stock it is important that the share of foreign exchange lending decline.

3. 1. 4. Non-financial corporations

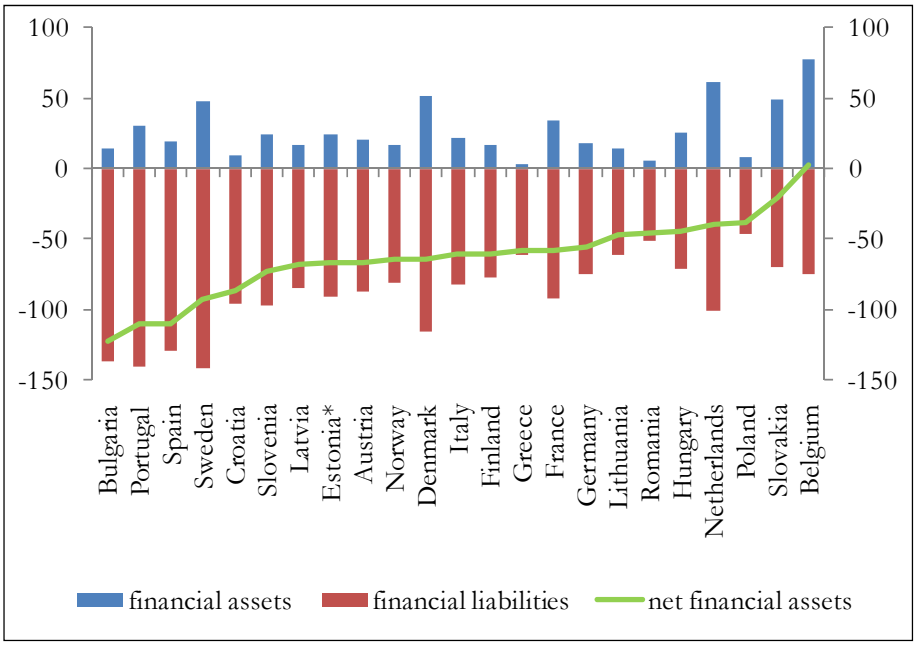
Theoretically, the relationship between the development of the economy and the debt stock of corporations is positive. In parallel with the development of the intermediary system, companies have easier access to external funds, which may result in higher indebtedness. This may happen through the banking sector as well, but raising funds on the bond market may also be significant in more developed countries.

[58] The denomination of household loans is risky not only because the quality of the loan portfolio may quickly change. If the stock of foreign exchange loans is high, the central bank is less able to perform its lender of last resort function, and monetary transmission may also weaken. These aspects are not analysed in this study.

At the same time, a convergence path relying on the use of external funds may also appear primarily in the increase in corporations' debt stock. In a converging country, there may be many investment opportunities promising good returns, but not all of these can be financed from the companies' own resources. In European comparison, numerous converging countries are found among those with the most indebted corporate sectors. However, the indebtedness of Hungarian companies cannot be considered high, and by regional standards it is actually regarded as low.

Chart 3-18: Debt-type financial receivables and payables of non-financial corporations

2008; as a percentage of GDP

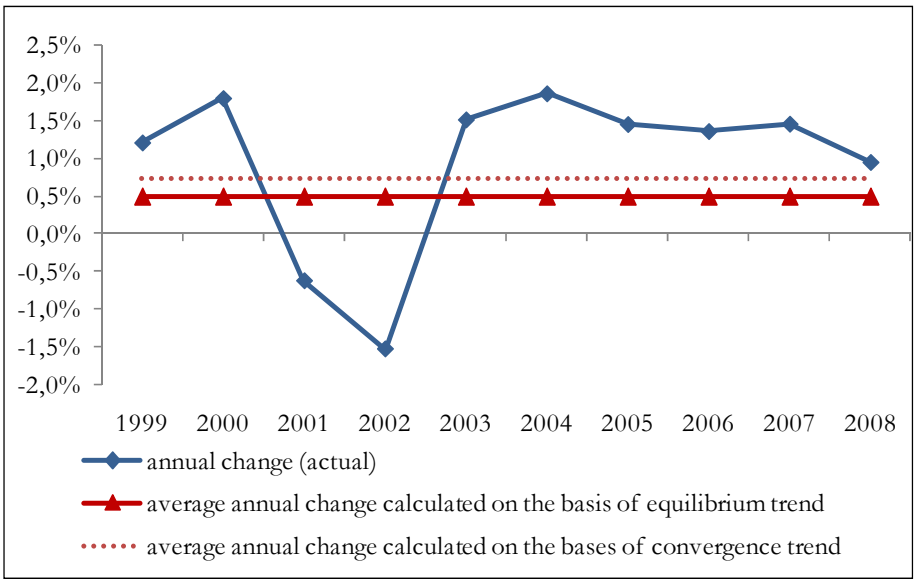


Source: Eurostat.

*Note: Only 2007 data are available for countries marked with *.*

In evaluating the pre-crisis period, it is worthwhile to examine developments in corporate loans. Using the estimates of Kiss et al. (2006) and complementing them with new data, we can conclude that the increase in corporate loans in the pre-crisis period cannot be considered to have been excessively rapid. On average, the increase in total loans was in line with the equilibrium growth rate. This is in accordance with the fact that the investment activity of corporations was subdued in this period.

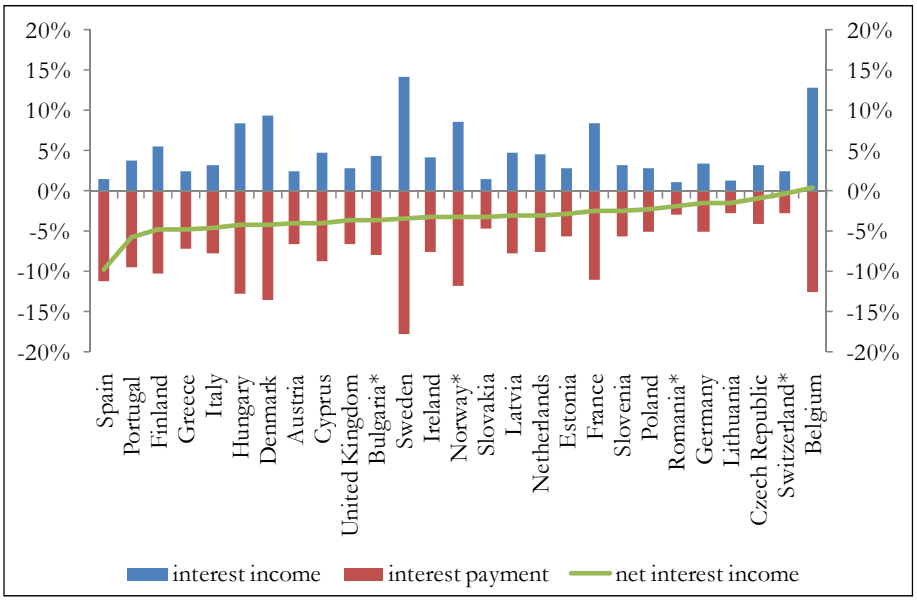
Chart 3-19: Annual change in the loan-to-GDP ratio of Hungarian non-financial corporations[59]



Source: Own calculations based on Kiss et al. (2006).

Although the indebtedness of non-financial corporations is relatively moderate in Hungary, when assessing the interest burden related to the debt stock it must also be taken into account that the financing cost of the sources of Hungarian companies is high in European comparison. This is also reflected in non-financial corporations' net interest expenditures; interest expenditures of Hungarian enterprises are relatively high in European comparison. This is presumable due to the high country risk premium.

Chart 3-20: Interest-type incomes and expenditures of non-financial corporations
2008; as a percentage of gross value added



Source: Eurostat.

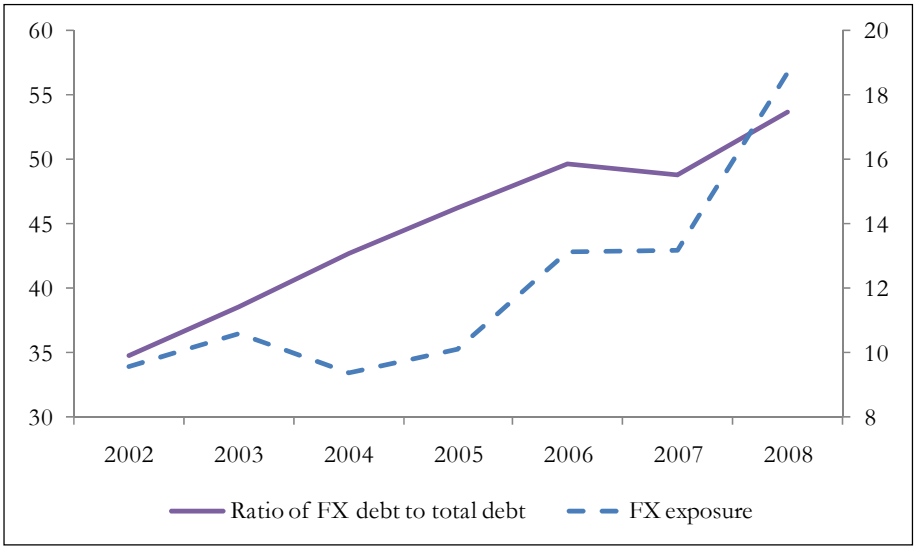
*Note: Only 2007 data are available for countries marked with *.*

[59] See footnote 7.

Companies producing for export may use the indebtedness in foreign exchange to hedge their open foreign exchange position; in this case foreign exchange borrowing does not imply taking exchange rate risk. At the same time, a significant number of companies undertook uncovered foreign exchange positions in the pre-crisis period. This is confirmed by Krekó et al. (2010), which showed that foreign exchange borrowing became popular even in sectors that generally do not produce for exports. According to survey evidence (Bodnár (2009)), uncovered foreign exchange exposure is also significant in the corporate sector. On the basis of the sample comprising hundreds of small and large enterprises, there is no natural hedge for approximately half of the foreign exchange loans to the non-financial corporate sector. In the years preceding the crisis, the exchange rate exposure of the sector increased rapidly, which presumably also indicates uncovered exchange rate positions.

Chart 3-21: Ratio of foreign exchange debt to total debt and foreign exchange exposure of non-financial corporations

As a percentage of GDP



Source: MNB.

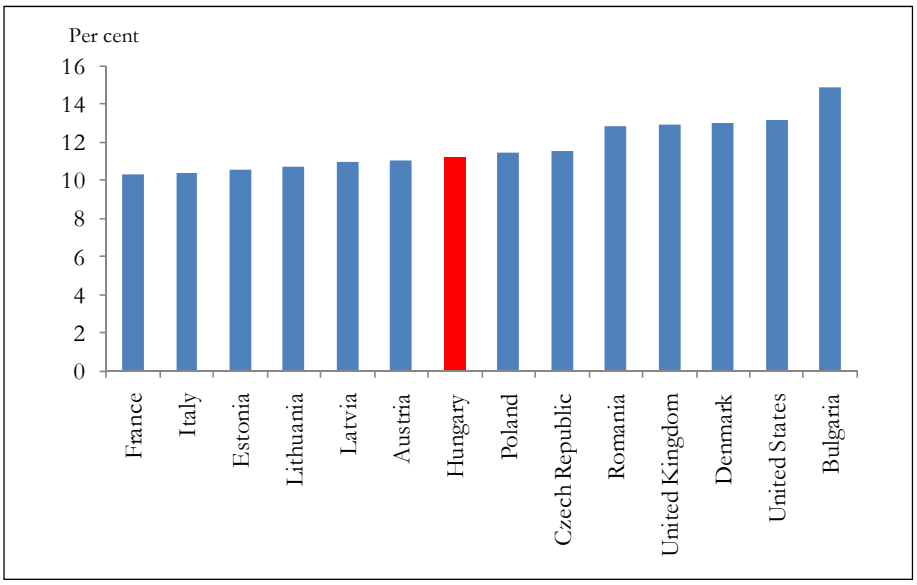
Based on the aforementioned indicators, domestic non-financial corporations did not become excessively indebted prior to the crisis. However, as a result of the high financing costs, interest expenditures of companies are high in international comparison. As in the case of households, the foreign currency structure of the debt stock represents a risk in the case of non-financial corporations as well, because many companies without natural hedge have also become indebted in foreign exchange.

3. 1. 5. Banking sector

The basic task of the banking sector is to intermediate between creditors and borrowers. Therefore, the net debt position of the banking sector is small. However, the risks related to the debt stock of other sectors may be considerably influenced by the balance sheet structure of commercial banks.

The banking sector is able to perform its task properly if its capital adequacy is satisfactory, so that possible negative shocks do not force it to reduce its lending activity. The capital adequacy of the domestic banking sector is considered good in international comparison.

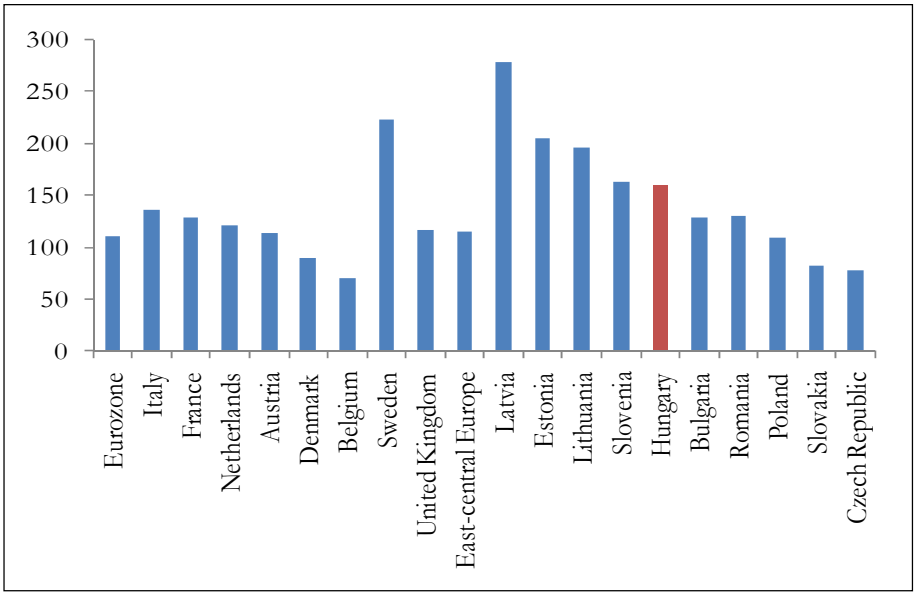
Chart 3-22: Capital adequacy ratio of the domestic banking sector in international comparison (2008)[60]



Source: MNB.

At the same time, the structure of the banking sector's liabilities carries risks. In the pre-crisis period, domestic savings were insufficient to finance the dynamically growing debt of the state and the private sector, which is reflected in the balance sheets of commercial banks as well. The loan-to-deposit ratio is high in international comparison.

Chart 3-23: Loan-to-deposit ratios in international comparison (2008)



Source: MNB.

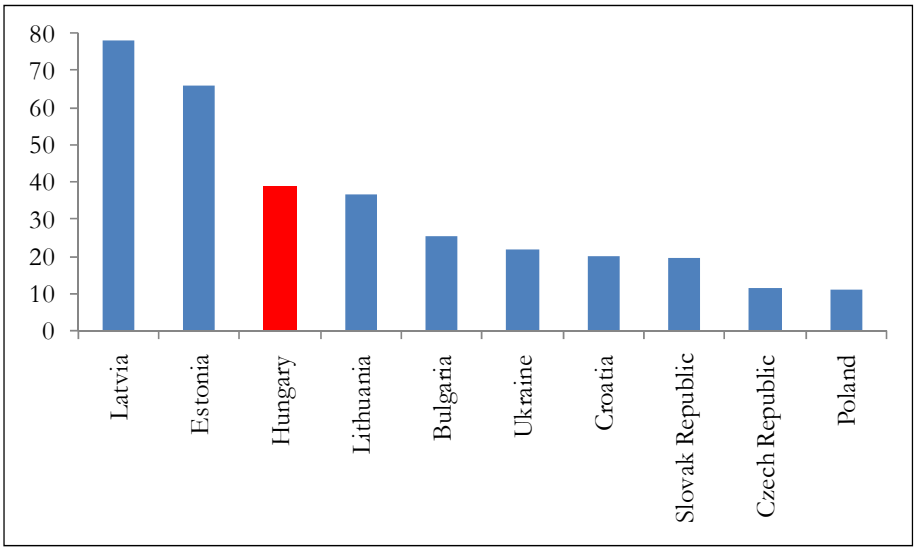
The banking sector financed a significant portion of lending from abroad. The renewal risk related to the high proportion of external funds is mitigated by the fact that a considerable part of funds is from parent banks. In parallel with the adjustment of the economy, the share of the banking sector's foreign funds may

[60] Regulatory capital adequacy ratio = (regulatory capital which can be taken into account for risk coverage / capital requirement) * 8 per cent. Banks' lending activity has declined since the onset of the crisis, and they have typically used their profits as well to increasing their capital, which resulted in a further improvement in their capital adequacy.

decline. Owing to the stable financing background, no rapid adjustment of banks' balance sheets is necessary, which may somewhat reduce the costs of the adjustment of the economy.[61] Should the situation of the European banking system deteriorate substantially, however, the domestic banking sector would also presumably have to adjust in an active manner because of the financing structure. In this case, the adjustment of banks' balance sheets may accelerate, which may force economic agents to adjust themselves faster than intended.

Chart 3-24: Gross external debt of banking sectors in the region

2008; as a percentage of GDP



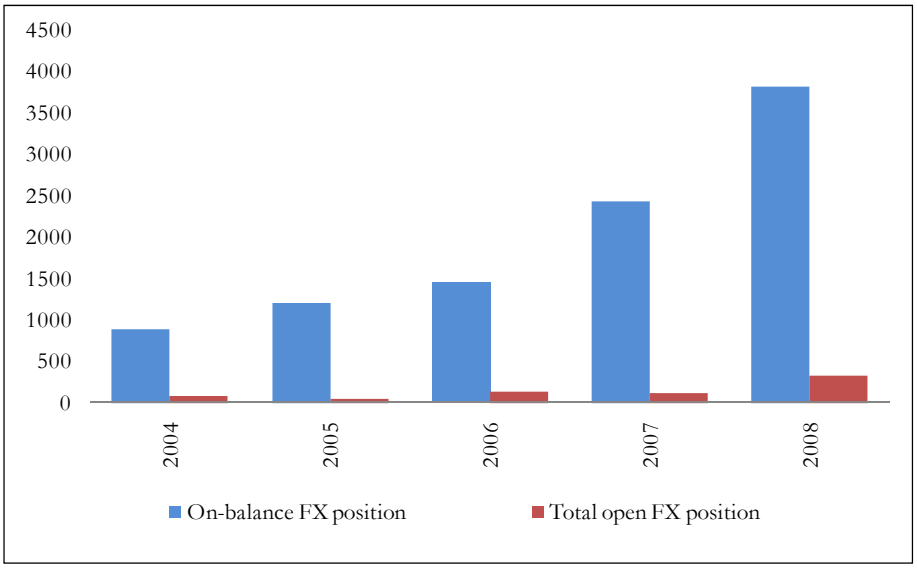
Source: BIS.

The structure of banks' balance sheets carries risks because of the significant on-balance sheet foreign currency position and maturity mismatch as well. The accumulation of risk is attributable to the fact that in a later period of foreign exchange lending banks already provided foreign exchange loans from forint funds as well. They covered their exchange rate risk arising upon lending with short-term transactions. Consequently, banks' total exchange rate exposure was continuously low, but at the same time they were increasingly exposed to the FX swap market and the maturity mismatch between foreign assets and liabilities increased. After the crisis erupted, it became obvious that market turmoil may occur in this market as well, which meant renewal risk for banks. Over the longer term, it is desirable for risks related to the functioning of FX swap markets to decline gradually. This can basically be attained through an increase in forint lending, in parallel with which banks' FX swap market exposure could also decline.

[61] Although a rapid adjustment of banks' balance sheets is not inevitable, the speed of adjustment is also significantly influenced by banks' willingness to take risks. In the event that banks consider economic prospects to be unfavourable over the longer term as well, they may restrain their lending permanently, so their balance sheets may adjust rapidly.

Chart 3-25: Open FX position of the domestic banking sector

End-of-year figures, HUF billion



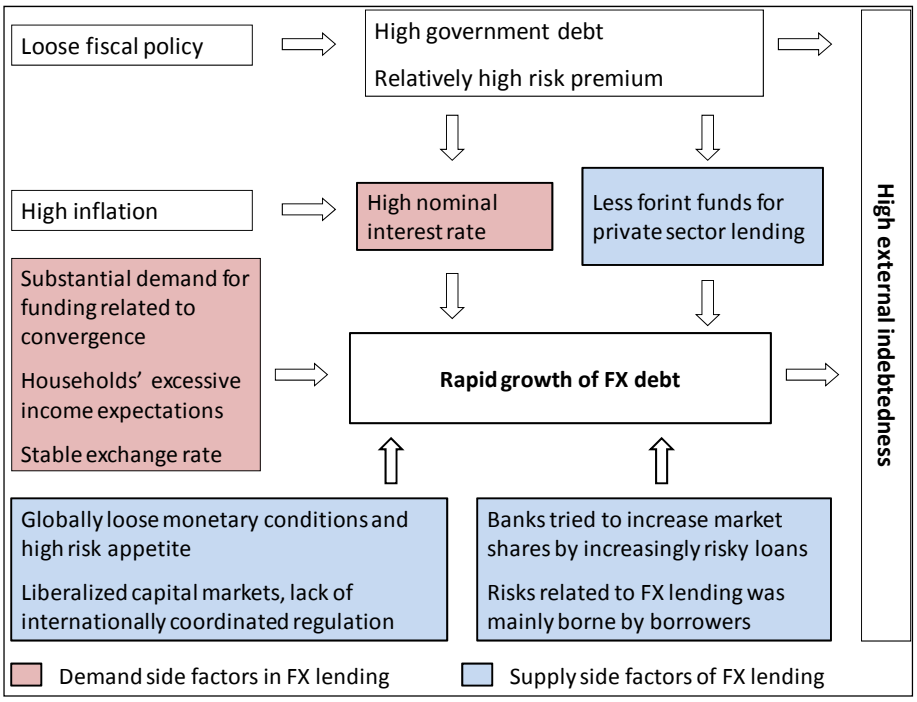
Source: MNB.

Although – based on the above indicators – the capital adequacy and financing structure of the banking sector carry some risks, the banking sector is basically able to resist major shocks as well. Therefore, it is not inevitable that the costs of economic adjustment are further exacerbated by a rapid adjustment of the banking sector's balance sheet. Over the medium term, balance sheet adjustment by commercial banks will rather be a consequence of the adjustment of the main economic sectors to the changed economic environment.

3. 1. 6. Underlying reasons for the accumulation of the high foreign exchange debt

It was described above that in parallel with convergence, the Hungarian economy has become significantly indebted. A considerable portion of debt is denominated in foreign currency, which adds to the vulnerability of the country. The chart below illustrates the factors that may have contributed to the accumulation of the substantial foreign exchange debt.

Chart 3-26: Underlying reasons for the development of the high foreign exchange debt

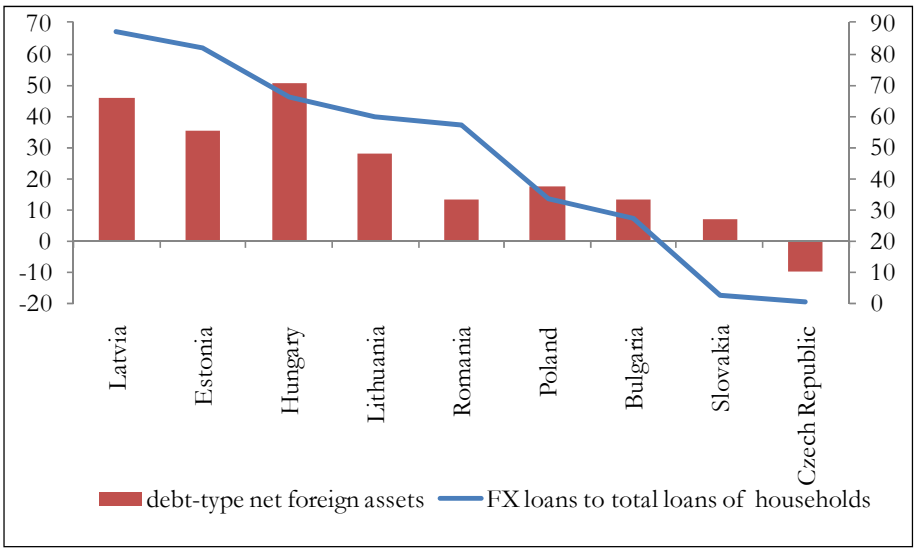


In the event that domestic savings are insufficient to satisfy the financing requirement of economic sectors, the economy needs external financing. The Hungarian economy's convergence with the more developed European countries may justify the external indebtedness of the country. At the same time, as we have already seen, government debt in Hungary considerably exceeds the level justified by the stage of the country's development. The high general government financing requirement deprived the private economy of domestic funds, increasingly directing the private sector towards external financing.

External financing of outstanding debt can only be implemented if one of the economic agents undertakes an uncovered exchange rate position. International data show that typically it was not the non-residents who took the exchange rate risk; in the case of high indebtedness the exchange rate risk mainly appeared with domestic agents. Accordingly, the scarcity of domestic financing sources can be considered one of the most important supply factors in the spread of foreign exchange lending.[62]

[62] The reasons for indebtedness in foreign exchange are analysed by Eichengreen et al. (2003) and Hausman et al. (2003). Their findings suggest that in emerging countries it is a general phenomenon that external indebtedness takes place in foreign exchange, despite the different characteristics of emerging countries. One possible explanation is that commitment to price stability is not guaranteed in the case of emerging countries, and thus foreign creditors do not take the risk that their assets become inflated through the weakening of the exchange rate. It may also be an important factor that global financial markets price the assets issued in major currencies in a more favourable manner.

Chart 3-27: External indebtedness and the share of foreign exchange loans (2008)



Sources: Csajbók et al. (2009), Eurostat.

The persistently loose monetary policy at the global level and high willingness to take risks were also important supply factors. Although the risk premium expected by investors in the case of Hungary was relatively high in the pre-crisis period, the cost of foreign exchange funds was still low, which is well-illustrated by the fact that the real interest rate on foreign exchange loans was sometimes negative.

Another factor facilitating the inflow of foreign exchange funds was that while banks in individual countries in the European Union became integrated in the European financial intermediary system, the regulation of bank lending was not adequately harmonised at the international level. Only national-level regulations could be applied against the excessive spread of lending in foreign exchange. At the same time, national-level regulation is typically not efficient in an integrated financial system. The experience of countries experimenting with restrictions on foreign exchange lending (Tirpák et al. (2008)) showed that the steps taken in order to stop the spread of foreign exchange lending only led to limited results. Of course, another explanation may be that the restriction was not sufficiently strict in these countries. However, there are also signs that some economic agents already attempted to evade even these constraints (Ranciere et al. (2009)).

It may also have contributed to the popularity of foreign exchange lending that commercial banks tried to increase their market shares by extending increasingly risky loans. This was primarily reflected in the easing of lending standards, making foreign exchange loans available for more and more, increasingly risky households. In addition, borrowers were presumably not aware of all the risks associated with foreign exchange loans. The conditions of lending to households allowed commercial banks to shift a significant portion of risks to their clients. Households bore not only the risks stemming from the fluctuations in the exchange rate and foreign exchange interest rates, but banks could also shift the changes in their financing costs that were independent of FX interest rates to their clients. Presumably, the conditions that were essentially favourable for creditors may also have added to the supply of loans.[63]

In addition to the supply factors, several demand factors also contributed to FX lending gaining ground. As a result of the relatively high risk premium expected of forint investments and inflation rates steadily higher than those typical in the euro area, nominal forint interest rates significantly exceeded FX interest rates, which added to the attractiveness of foreign exchange loans. The stability of the exchange rate of the

[63] The code of conduct for banks effective from 1 December 2009 is aimed at increasing the transparency of borrowing by households.

forint observed over a longer period of time may also have resulted in a possible underestimation of the exchange rate risk related to foreign exchange loans by economic agents. The spread of foreign currency lending was also facilitated by the fact that domestic economic policy continuously emphasised its commitment to quick adoption of the euro. This may have fed excessive income expectations by some households, and may have also mitigated the perceived exchange rate risk of foreign currency loans.

Overall, we can say that both demand and supply factors supported the spread of foreign exchange lending in Hungary. Based on international experience to date, at best this trend could only have been slowed down by restricting foreign exchange lending. As non-residents are willing to take the exchange rate risk only to a limited extent, major tightening would have resulted not only in a larger share of forint loans, but also in a significant fall in lending. The indebtedness of the private sector until 2006 cannot be considered excessive, so stricter regulations would have had positive and negative consequences as well. Although it could have alleviated the vulnerability of the country, at the same time it would have reduced the growth rate of the economy by narrowing financing possibilities. After 2006, however, households were becoming indebted too fast, which may justify tightening regulations on lending to households.[64]

3. 1. 7. Conclusions

The risks related to the indebtedness of individual sectors are illustrated in the table below. The different colours illustrate the sectors and groups of indicators in which we believe significant corrections are required to alleviate the vulnerability of the country. In the assessment of risks, it must be taken into account that the risks related to the various sectors are not independent of one another and may even amplify each other.

Table 3-2: Summary of the risks related to the main economic sectors

Government	Households	Non-financial corporations	Financial system
Debt	Debt	Debt	Capital adequacy
Debt service burden	Debt service burden	Debt service burden	
Decomposition of debt	Decomposition of debt	Decomposition of debt	Stucture of liabilities

high risk medium risk low risk

The most important risk is related to the general government. General government debt is considered high in European comparison. It is particularly true compared to the stage of development of the economy and in a regional comparison. In the private sector sufficient financial savings have not yet accumulated to be

[64] The government decree on the conditions of prudent, responsible lending to households and the examination of creditworthiness, which has been effective since March 2010, intends to limit the risks related to household loans.

able to finance the current level of government debt. Therefore, external government debt is also high, which poses a major risk in terms of the continuous financing of government debt. Another risk is the debt-related interest burden, which is high in international comparison. If the central banks of developed countries begin monetary tightening, this burden may even increase further.

Although the debt stock of the private sector is not extremely high in international comparison, households' indebtedness in the pre-crisis years may already have exceeded the level justified by the development of the country. In respect of the private sector, the highest risk is related to the currency composition of the debt. Owing to the high share of foreign exchange loans, repayment burdens, which are already considered significant in international comparison, may continue to grow if the cost of banks' foreign exchange sources increase or if the exchange rate of the forint weakens. Households' rapid indebtedness seen in the years prior to the crisis and the easing of lending standards justify tightening the regulations on lending to households.

The financing of government debt absorbed a considerable portion of domestic savings, which increased the use of foreign funds by the private sector. This is reflected in the financing structure of the banking sector as well. The financial intermediary system provided significant amounts of loans from foreign sources, which makes the financing of the private sector sensitive to external shocks which do not directly affect the Hungarian economy. The risk is somewhat mitigated by the fact that a significant portion of external funds originates from parent banks, and thus the risk of a rapid, major withdrawal of funds is low. At the same time, this does not exclude the possibility of a significant change in the financing structure of commercial banks over the medium term. However, this will rather be a consequence of the adjustment to the changed economic environment by the main sectors of the economy.

Over the medium term, reducing the indebtedness of the state is of crucial importance in terms of lowering the financing risks of the general government. The indebtedness of the private sector will probably be less finanaceable from external funds in the future, and thus a gradual reduction of government debt and the financing requirement of the state may also be necessary from the aspect of continuously meeting the financing requirement of the private sector.

For creditors, government debt can be considered less risky than the debt of the private sector. Since in Hungary – unlike in some Central and Eastern European countries – it is primarily the state and not the private sector that has become excessively indebted, the theoretical possibility of a gradual, and therefore less painful, reduction of external debt is given.

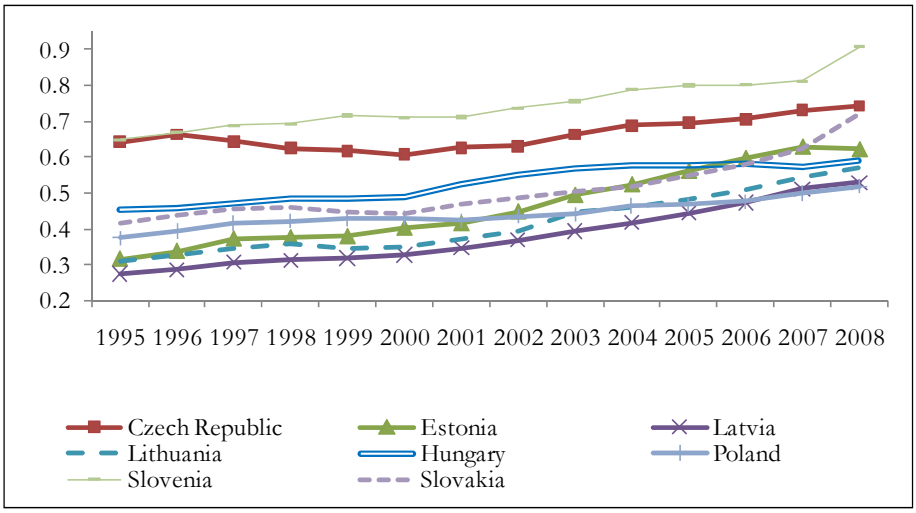
3. 2. Factors underlying the slowdown in convergence in the pre-crisis period

3. 2. 1. The standstill in real convergence

According to developments in per capita real GDP, until 2004 the pace of convergence corresponded to the CEE average, but since 2004 Hungary has practically been unable to reduce the gap relative to the average of the EURO-16.

Chart 3-28: Per capita GDP in the CEE countries

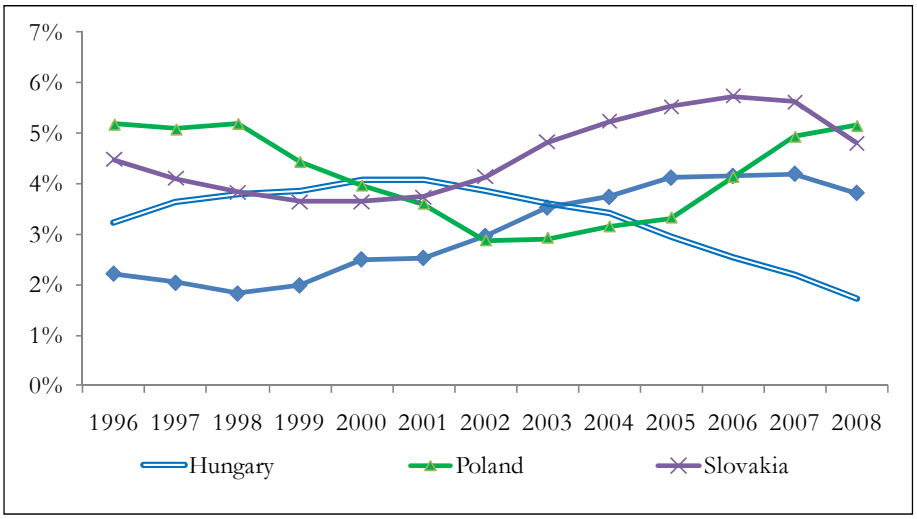
on PPS basis; EU16 =100



Source: Eurostat.

The slowdown in convergence is reflected in Hungary's growth rate relative to its peers as well. According to the potential GDP growth estimates (see Chart 3–29), whilst an increasing trend is observed for the other countries in the region after 2000, there has been a gradual decline in trend growth in Hungary since 2001. However, until the fiscal adjustment the deterioration in Hungary's potential growth rate was concealed by fiscal overspending and a surge in consumption. The actual growth rate fluctuated around 4 per cent, but it took place along an unsustainable path with increasing indebtedness, a current account deficit and a fiscal deficit. The inevitable correction, i.e. the fiscal adjustment in 2006 restrained the growth of the country considerably.

Chart 3-29: Potential GDP growth rates in Central European countries

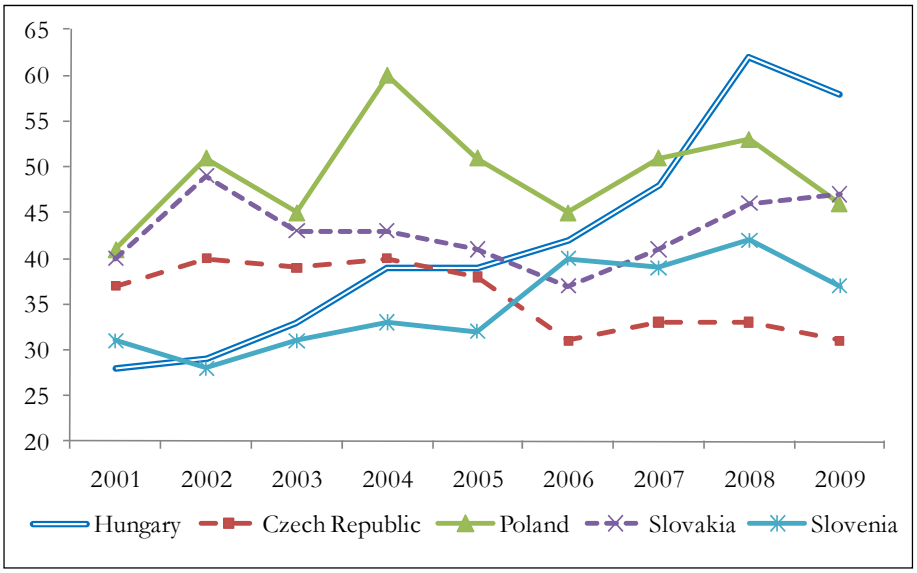


Sources: OECD estimate.

The gradual deterioration in the longer-term (5-year) growth prospects is also shown by the Global Competitiveness Index of the World Economic Forum, which has reflected a considerable decline since 2001. While in 2001 Hungary took 28th place, ahead of all the CE countries, by the end of 2008 it fell to 62nd place, coming in last in the region. Among the sub-indices, the indicator of macroeconomic stability – fiscal deficit and indebtedness in particular – is extremely bad and deteriorated considerably in this period (Hungary slipped from 38th to 115th place). In 2009, the trend of earlier deterioration slightly

turned, primarily as a result of an improvement in macroeconomic stability and labour market efficiency. But for the time being the change is not significant, and stems from an improving trend compared to other countries rather than from absolute improvement.

Chart 3-30: Long-term growth prospects – GCI (ranking)



Source: Word Economic Forum.

3. 2. 2. Factors behind the slowdown

In the following, the reasons for the slowdown in growth and real convergence are examined from the aspect of factors of production: capital accumulation (investment) and labour as well as productivity. An interesting contribution to this is found in the following box, which summarises the findings of Kónya (2010).

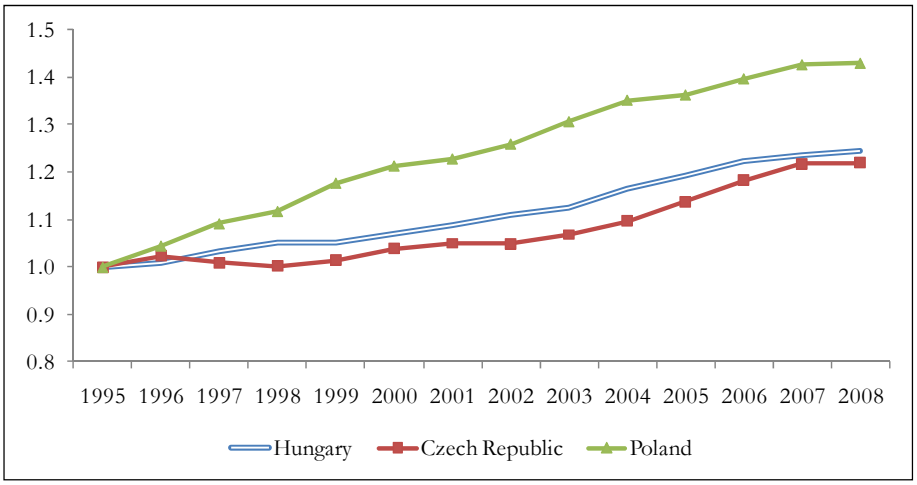
Box 3-2: Growth in Hungary (Kónya 2010)

In this analysis, we examine the growth performance of the Hungarian economy between 1995 and 2008. We are looking for an answer whether the slowdown in productivity growth or other developments distorting the consumption–saving decision were behind the decline in investment following 2000. For the examination of these questions, we use the methodology of Chari–Kehoe–McGrattan (2007), adapted to a converging economy. The essence of the method is that in an otherwise standard dynamic general equilibrium model it allows 'wedges'[65] in the main household and corporate decisions. The presence of 'wedges' indicates that real or nominal rigidities, distortions caused by the tax system or economic policy measures divert the decisions of economic agents from the decisions assumed to be efficient by the model. As a result, e.g. households consume too much, save little, and labour supply or investment will be lower than it would be in the absence of those distortions. We calibrate the model on the basis of Hungarian, Czech and Polish data, and then solve it and calculate the time series of the directly unobservable wedges and TFP.

[65] The key equations of calculating the deviations are as follows: (1) production function: $GDP_t = TFP_t (z_t K_t)^{\alpha} N^{1-\alpha}$, (2) labour market equilibrium: $e^{\tau_{N,t}} \frac{MU_{C,t+1}}{MU_{C,t}} = MP_{L,t}$; (3) the intertemporal Euler equation of consumption–investment: $\frac{e^{\tau_{K,t}}}{\beta} = E_t\left(1 - \delta_{t+1} + MP_{K,t+1}\right)\frac{MU_{C,t+1}}{MU_{C,t}}$. Where $\tau_{N,t}$ és $\tau_{K,t}$ are the labour and capital market distortions.

According to our findings, in the period under review Hungarian TFP growth was similar to that of the Czech Republic, but was remarkably lower than the Polish one. No break is seen in the time series after 2000; accordingly, the slowdown in the Hungarian economy cannot be considered a productivity problem, at least not at the aggregate level. The rate of trend growth is relatively low, however, which may indicate longer-term convergence problems.

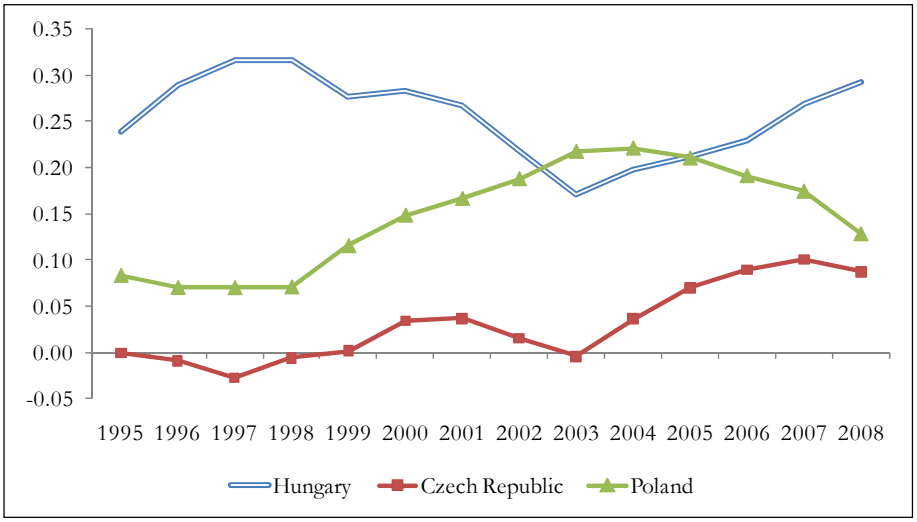
Chart 3-31: Changes in TFP



** TFP is interpreted as the Solow residual of the production function.*

Based on chart 3-32, the Czech labour market was considerably more efficient than those of the other two countries. This result mainly follows from the much higher Czech employment rate. The average of the Polish and Hungarian wedges is similar, but its evolution over time was very different. The increasing inefficiency in the Hungarian labour market is observable well ahead of the economic slowdown that started in 2006. The underlying reason is that consumption expenditures grew faster than GDP after 2003, which would entail an increase in labour supply in an efficient labour market. However, this did not occur in Hungary.

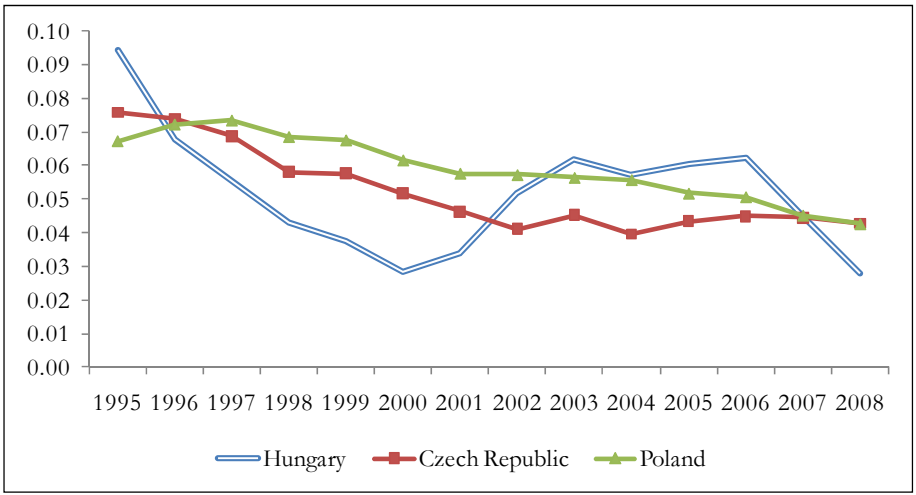
Chart 3-32: Labour market wedges



Capital market distortion started from a similar, positive level in all three countries in 1995, indicating that the level of investment was too low. The Hungarian wedge had declined significantly by 2000, then turned around and stabilised at a higher level by 2006. However, the wedge in the Czech Republic and Poland declined for the whole period, but did not reach the lowest value for Hungary. Accordingly, on average,

the efficiency of the Hungarian consumption–investment decision was not worse than that of the other two countries, but in the period between 2003 and 2006 the longer-term positive trend turned around. As this did not happen in the Czech Republic and Poland, the phenomenon was most probably the result of Hungarian economic policy mistakes, rather than a consequence of regional or global market developments.

Chart 3-33: Capital market wedge



In summary, based on the analysis we did not find any aggregate TFP slowdown in the period under review, but the trend productivity growth rate was rather low. The labour and capital market wedges clearly indicate that after 2000 Hungarian economic policy departed from the regional developments and the direction of the change was clearly negative.

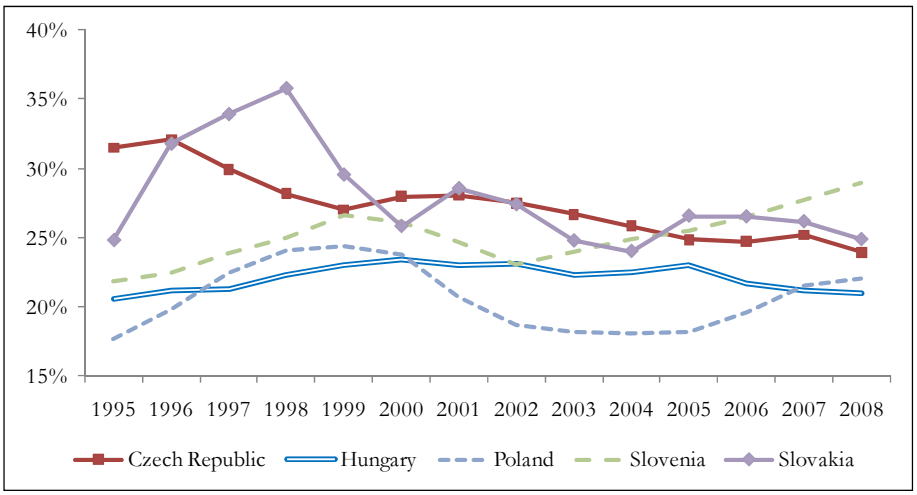
Capital accumulation

In accordance with the convergence process, the **real investment rate** is higher in Hungary than in developed European countries, but is low compared to other converging CEE countries.[66] The investment rate is affected by numerous factors: the initial level of capital stock, user cost, the structure of the economy (importance of capital-intensive sectors), financial imperfections as well as uncertainties stemming from the regulatory system and economic policy. Some of these cannot be measured or compared between countries, or only with difficulties. Considering that the per capita GDP in Hungary starts from a relatively low level, this low investment rate may represent a too low level even compared to the 'optimum' convergence path. In our opinion, in the 2000s the lack of macro stability and the risk premium – which was higher than in the neighbouring countries – may have played a role in this regard.

Fiscal adjustment caused a marked decline in investment in 2007 and 2008. Tax measures increased the user cost of capital, and expectations regarding economic activity deteriorated, while companies (in manufacturing) postponed their investment despite the good external demand conditions, instead increased capacity utilisation. Investment had already declined in 2006, prior to the adjustment, presumably because the adjustment expected but not yet known by economic agents added to the uncertainty (see Gál (2007)).

[66] The nominal investment rate shows a similar picture of the differences among countries and developments over time as well.

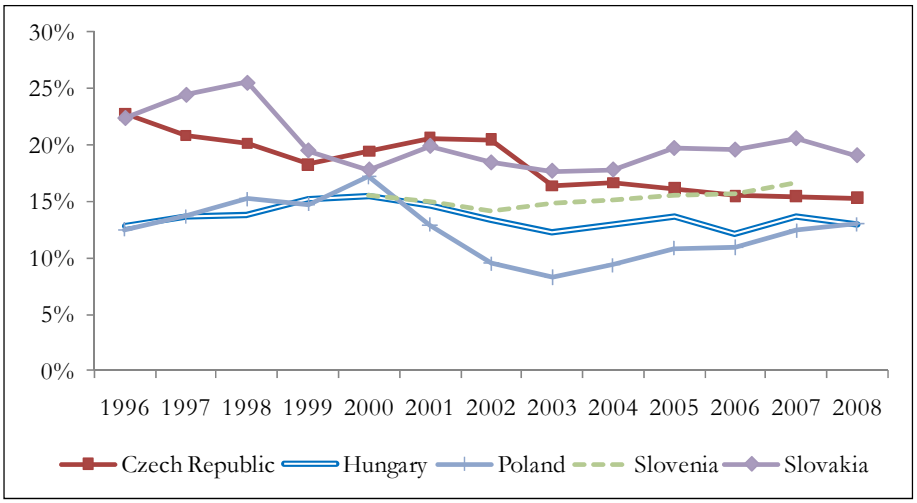
Chart 3-34: Investment rate in CE countries (calculated on PPS basis)



Source: Eurostat.

Although government investment can also contribute to growth through the development of infrastructure, in terms of long-term growth the **investment of the corporate sector is** of special importance. Hungary's private sector investment rate falls behind that of other CE countries. Moreover, it has shown a declining trend since 2001.

Chart 3-35: Investment rate of the non-financial corporate sector



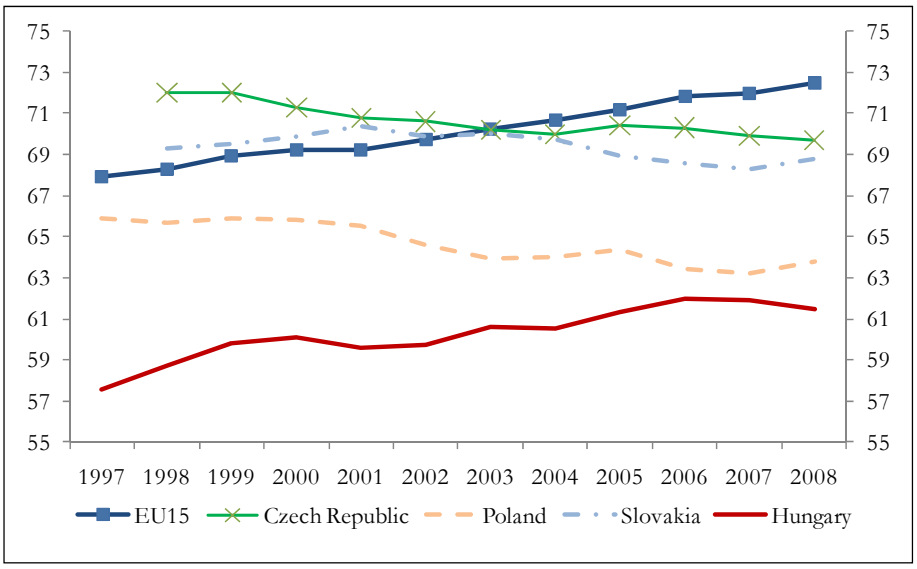
Source: Eurostat.

Labour as a factor of production

The contribution of labour market developments to the growth of the Hungarian economy was rather low in the period under review. We have identified two main problems: the low participation rate, even in regional comparison, (resulting in a difference in income level) and the subdued developments in employment in the private sector. Labour market problems were recently examined in detail by Kátay (2009), on the findings of whom we rely strongly.

Despite some increase over time, the **participation rate** in the age group between 15 and 64 years in Hungary is much lower than in the other countries of the region and the average of the European Union.

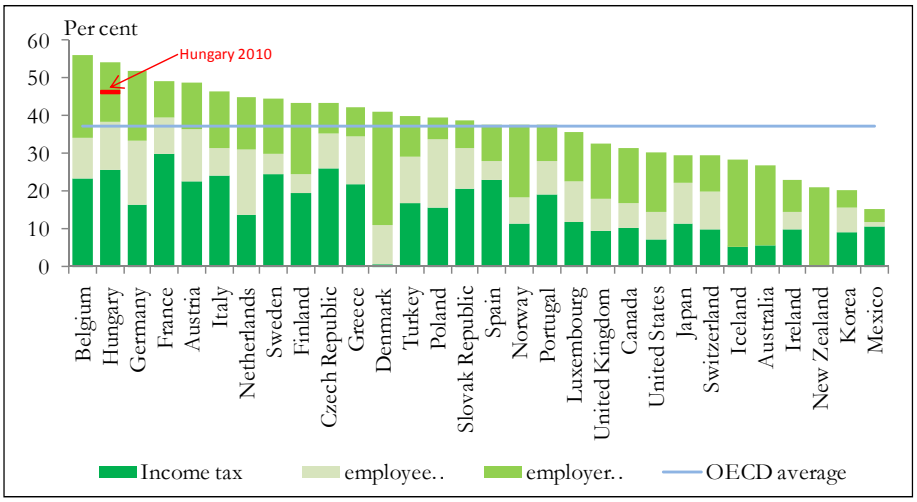
Chart 3-36: Changes in the participation rate (%)



Source: Eurostat.

Both demand and supply factors may play a role in this. Labour supply was primarily reduced by incentives such as the high ratio of pension compared to the wage earned before retirement, disability benefits and the generous child support system. On the labour demand side, in turn, the main underlying reason for the low activity is the total tax burden on labour income, which is high in international and regional comparison as well.

Chart 3-37: Total tax burden (tax wedge) of a single employee with average earning in 2008 As a proportion of total labour cost



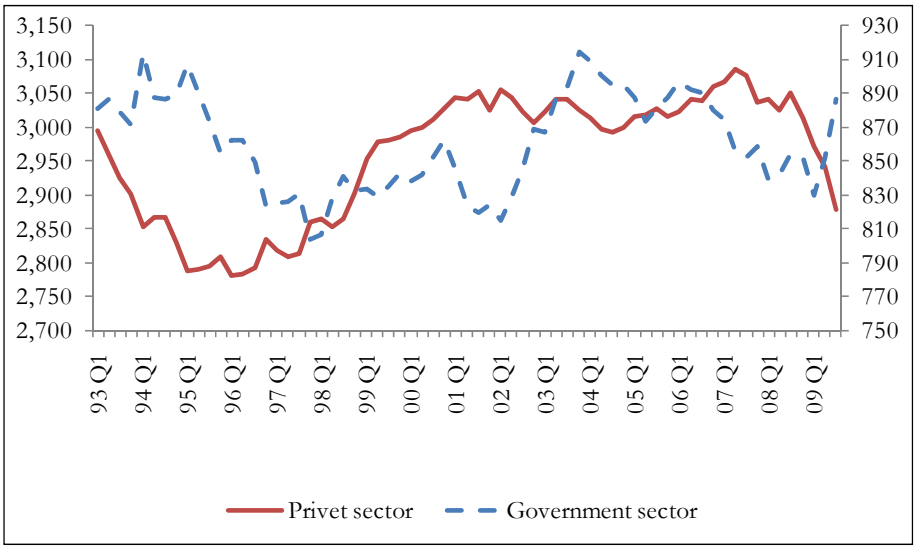
Sources: OECD and MNB.

The recently adopted government measures influences the participation rate in a favourable manner. The gradual raising of the retirement age to 65 years as well as the tightening of disability retirement and the child support system work as incentives for larger labour force participation. According to our calculations, as a result of the government measures, the participation rate in Hungary may increase by as much as 5 percentage points in the next 10 years. In 2009, the government also announced the reduction of labour income taxes, which was offset by raising consumption-type taxes, thus maintaining fiscal discipline. This step can also be considered as favourable restructuring, as the distorting effect of consumption taxes is typically lower than that of income taxes (Johansson et al., 2008). The reduction of

labour income taxes has a favourable effect both on labour demand and labour supply. Chart 3–37 shows that the tax wedge projected for 2010 indicates significant convergence with the other countries of the region and the OECD average as well, although it is still larger. Moreover, the gap in tax wedge at higher income groups remains significant, which acts against expanding labor supply.[67] Based on the calculations presented in our May 2009 *Quarterly Report on Inflation*, assuming an even effect of the measures for a period of 10 years, the potential growth rate of the Hungarian economy may even increase by as much as an annual 0.3 per cent as a result of the measures related to the labour market.[68]

The problems of the labour market are also reflected in the fact that in net terms no **new jobs** have been created in the private sector since 2000–2001. While in the other Visegrád countries employment expanded significantly after 2005, employment in Hungary has practically been stagnating since 2000. Hungary missed out on the cyclical expansion of labour demand: new jobs have not been created. Low-activity people with basic education were seriously affected, and in their case human capital problems may also have played a role in addition to the demand and supply factors already mentioned. Improving education and further training could help in this respect. In addition, a lower average tax rate for low income employees could also act as an incentive to work.

Chart 3-38: Employment in Hungary (thousand people)



Source: LFS.

Productivity

In the case of catching-up countries, TFP can be considered one of the main driving forces of convergence. TFP growth was facilitated by numerous developments and changes in the period under review: FDI inflow, privatisation, increasing competition, more efficient allocation of resources as a result of financial development, easing of liquidity constraints and the development of institutions in general.

Based on **aggregate** estimates, there was no significant slowdown in TFP (see Box 3-3), but aggregate estimates entail high uncertainty as both the assumptions regarding the initial value of capital stock and the success of controlling for cyclical effects strongly influence TFP estimates.

[67] Results of Bakos et. al (2008) shows that labour supply is most sensitive to changes in the labour wedge for above-average income groups. This is in line with the findings of other international studies.

[68] See Box 3–2 of the *Quarterly Report on Inflation*: Government measures and their macroeconomic effects.

We know from research findings using Hungarian **micro data** (referring only to the manufacturing industry) that TFP originating from technological development was the source of growth especially in the 1990s (Kátay (2006)). In the period after 2000, reallocation played a greater role in productivity growth. Reallocation may have continued in some industries (the paper analysed data up to 2004), and the sources of TFP growth may have been, for example, the widespread use of computers, the easing of liquidity constraints on domestic companies and in general the development of financial markets (primarily the banking sector).

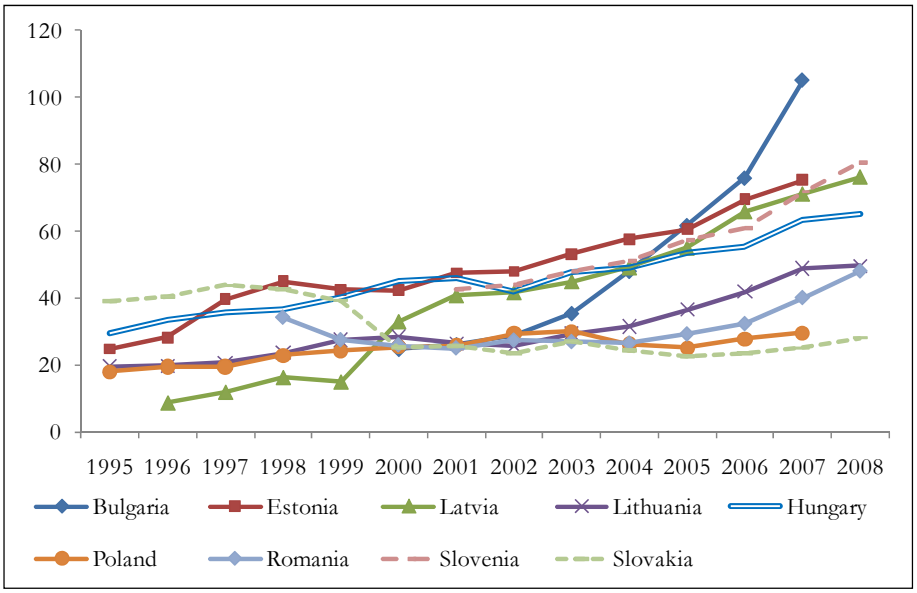
Box 3-3: Financial development and growth

There is a close correlation between financial development and growth. Financial development contributes to higher growth by reducing the cost of external financing, mobilising savings, and better identifying investment opportunities and technological innovation. Its beneficial effect appears in the growth of investment and productivity as well. Aggregate-level productivity growth is generated by Schumpeter's 'creative destruction', where the financial markets provide for the reallocation of capital from declining sectors to ones with good growth prospects. However, several other mechanisms in the relationship between financial development and productivity have been identified in the literature. Correlation was found, for example, between the presence of financial frictions and corporations' innovation activity as well as export orientedness (both have a positive effect on productivity). Less financial frictions implies more innovation and export, which boosts productivity as well. The share of longer-term loans is higher in more developed financial markets, which allows the implementation of investment with a slow return, but a high contribution to productivity growth. In addition, with financial development the proportion of sources allocated to sectors that depend on external funds to a greater extent[69] generally increases; R+D and technological development are usually typical of these sectors. The financing of SMEs and their related faster growth also have a positive effect on productivity.

Loans to the non-financial corporate sector as a proportion of GDP vary greatly across converging European countries, but significant deepening is observed in most of them. This points to a remarkable easing of liquidity constraints. The surge in lending in some countries may even be a sign of overheating, but according to the findings of Chapter 3.1 there was no credit boom in the corporate sector in these countries.

[69] The concept of external finance dependence first appeared in the article by Rajan – Zingales (1997).

Chart 3-39: Loans to the non-financial corporate sector as a percentage of GDP



Sources: Eurostat and MNB (Hungary excluding SPEs).

The change in banks' behaviour and the easing of liquidity constraints is also confirmed by changes in banks' portfolio in Hungary. On the one hand, within corporate loans an increase in the share of longer-term loans was observed, from 55 per cent to 80 per cent, between 1995 and 2008.[70] Availability of long-term finance is necessary for increasing investment and spreading more productive technologies, and thus for growth. Empirical studies find a significant relationship between growth/productivity and long-term loans (see e.g. Tasic and Valev (2008), Demirgüc-Kunt (1997)).

The easing of liquidity constraints is also indicated by the improvement in the SME sector's access to loans. Asymmetric information problems are usually more significant in the case of new and small enterprises, and therefore they are the ones that face stricter liquidity constraints. The share of loans extended to the SME sector in Hungary increased from 40 per cent to 53 per cent between 2001 and 2008.[71] During the same period, the number of SMEs with bank loans grew by two and a half times, i.e. bank loans became available for an increasing number of companies. In addition to the government programmes, the increase in competition among banks, the development in risk management techniques as well as the spread of foreign currency denominated loans may all have contributed to this. Owing to the significant interest rate differential (and relatively stable exchange rate) and the much lower instalments, foreign currency loans expanded the range of creditworthy companies. We know from surveys that almost half of the foreign currency loans is with non-exporting companies (see Bodnár (2009)). The spread of foreign currency lending among clients with no natural hedge added to financial stability risks, but at the same time it contributed to growth by easing liquidity constraints (see Tornell 2009).

Overall, we believe that the easing of liquidity constraints may have had a positive contribution to TFP growth in the pre-crisis period in Hungary as well. In addition to the deepening of bank intermediation, this is confirmed by the lengthening of loan maturities and the improvement in access to loans for SMEs.

In terms of catching-up, another interesting question of micro research on TFP is whether there is any difference in the TFP level of foreign and domestic corporations, and whether FDI has any positive spillover effect. Specifically, this involves the question as to whether the appearance of international firms

[70] This was observed in other transition countries as well; see Tasic (2009).

[71] In the meantime, there was no significant change in the role of SMEs in the economy (based on employment or their contribution to the production of GDP).

has a positive effect on the productivity of domestic companies through the increase in competition, technology transfer, supplier relations and labour flow. According to the findings of Békés et al. (2007) as well as Halpern and Muraközy (2007), FDI caused horizontal spillover in Hungary, but it was more typical in the early stage of transition. The vertical effect is only significant in the case of larger, more productive companies. This is partly contradicted by the findings of Gersl et al. (2007) (international panel), according to which the spillover between foreign and domestic companies is not positive, but negative (owing to knowledge and market drain).

Gersl et al. (2007) suggest that in the CE countries the difference between the productivities of foreign and domestic companies[72] is the greatest in Hungary. The results of this study and Kerekes (2009) also confirm that there is a difference not only in levels, but there is also no catching-up in TFP between foreign- and domestic-owned companies over time. There may be several underlying reasons for the development of the dual economic structure in terms of TFP. Some of these problems are the same as the SME sector's problems, as foreign-owned companies in Hungary generally belong to the category of large corporations. It is typical of the SME sector in Hungary that its share in employment exceeds the EU (and CE) average, but its role in the production of value added is below average, which indicates problems in productivity. In addition, the proportion of medium-sized enterprises is relatively low, and the survival time of SMEs is short (see Eurostat 2009). Few companies grow into[73] medium-sized or large corporations.

Table 3-3: Share of SMEs (non-financial corporate sector)

	Number of firms	Number of employees	Value added
EU27	99.8	67.1	57.6
HU	99.8	70.9	50.2
CE5	99.5	64.4	52.1

Source: Eurostat, 2005 data.

The growth and efficiency problems of the SME sector are partly attributable to tax issues, as small enterprises are unable to legally employ their workers because of the high labour taxes. On the other hand, illegal employment and the application of tax evasion techniques are obstacles to growth (see Oriens (2008)).[74] It is not worth for companies to grow over a limit; consequently, they cannot benefit from the efficiency gains stemming from a larger size. This is confirmed by the results of the SME surveys launched by the Ministry of Economy and Transport in 1997. Upon each questioning, the companies participating in the survey pointed to the high tax and social security burdens as the most important factor hindering growth.

Chances of survival may also be reduced by the fact that the application of the bankruptcy law in Hungary practically means only liquidation proceedings. The number of bankruptcy proceedings aiming at an agreement and the survival of the company is insignificant. Growth may be hindered by human capital problems as well, e.g. the lack of managerial skills (see OECD (2008)). Another factor that may also contribute to the TFP difference between domestic and foreign-owned companies is that these two groups of companies face different credit constraints. Owing to their size, parent company relationships as well as

[72] In an early study, Halpern and Kőrösi (2001) also found a significant difference in efficiency between domestic and foreign-owned companies.

[73] OECD (2008) and Major (2003) also call the attention to the growth problems of the SME sector.

[74] Krekó and Kiss (2007) present the tax evasion techniques applied in Hungary in detail. The various estimates described in their paper regarding the magnitude of the hidden economy range between 20–30 per cent of GDP. This is high in international comparison; among the newly joined countries only the Baltic ones have grey economies of this magnitude.

their access to bank and financial markets abroad, foreign-owned companies have less pressing liquidity constraints.

References

Beck, T. – Levine, R. – Loayza, N. (2000): Finance and the sources of growth, Journal of Financial Economics 58, Elsevier

Békés, G. – Kleinert, J. – Toubal, F. (2006): Spillovers from Multinationals to Heterogenous Domestic Firms; Evidence from Hungary, KTI Discussion Papers 2006/16

Katalin Bodnár (2009): Exchange rate exposure of Hungarian enterprises – results of a survey, MNB Occasional Papers, OP80 (2009)

EC, Eurostat (2009): European Businesses - Facts and Figures, Business Economic Review

Gál, P. (2007): Unfavourable investment data – risks to economic growth? MNB Bulletin, June 2007

Gál, P. (2009): Uncertainties and Expectations: Further Explanations for Capital and Labour Demand in Hungary, manuscript

Gerard, C. – Demirgüc-Kunt, G. (1997): The Role of Long-term Finance, Theory and Evidence, World Bank Policy Research Working Papers 1746

Gersl, A. – Rubene, I. – Zumer, T. (2007): Foreign Direct Investment and Productivity Spillovers: Updated Evidence from Central and Eastern Europe

IMF (2009): Regional Economic Outlook, Europe, Securing Recovery

Johansson, Åsa – Heady, Christopher – Arnold, Jens – Brys, Bert – Vartia, Laura (2008): Tax and Economic Growth, OECD Economics Department Working Papers No. 620

Kátay, G. (ed., 2009): *Az alacsony aktivitás és foglalkoztatottság okai és következményei Magyarországon, MNB-tanulmányok 79*, (The reasons for and consequences of low activity and employment in Hungary, MNB Studies 79), Magyar Nemzeti Bank

Kerekes, M. (2009): The Contribution of Domestic and Foreign Firms to Hungary's Aggregate Productivity Growth, manuscript

Kónya, I. (2010): *Növekedés Magyarországon* (Growth in Hungary), manuscript

The Government of the Republic of Hungary (2010): The Updated Convergence Programme of Hungary 2009–2012

Magyar Nemzeti Bank (2009): Quarterly Report on Inflation, May 2009

Matthieu Bussière - Marcel Fratzscher - Gernot J. Müller (2004): 'Current account dynamics in OECD and EU acceding countries - an intertemporal approach', Working Paper Series 311, European Central Bank

Michele Ca' Zorzi - Alexander Chudik - Alistair Dieppe (2009): 'Current account benchmarks for central and eastern Europe - a desperate search?', Working Paper Series 995, European Central Bank

Attila Csajbók – András Hudecz – Bálint Tamási: 'Foreign currency borrowing of households in New EU Member States', mimeo

Eichengreen, B. - Hausmann, R. - U. Panizza (2003): 'The Mystery of Original Sin', in Eichengreen, B. and R. Hausmann (eds.), Debt Denomination and Financial Instability in Emerging-Market Economies

Hausmann, Ricardo – Panizza, Ugo (2003): 'On the determinants of Original Sin: an empirical investigation,' Journal of International Money and Finance

Gergely Kiss – Márton Nagy – Balázs Vonnák (2006): 'Credit Growth in Central and Eastern Europe: Convergence or Boom?', MNB Working Papers 2006/10

András Komáromi (2008): 'The structure of external financing: Is there a reason to worry about financing through debt?', MNB Bulletin, April 2008

Péter Koroknai (2008): 'Hungary's external liabilities in international comparison', MNB Bulletin, December 2008

Judit Krekó – Marianna Endrész (2010): 'The role of foreign currency lending in the impact of the exchange rate on the real economy', MNB Bulletin, March 2010

OECD (2009): 2009 Economic Review – Hungary

OECD (2008): SME Promotion: Increasing Competitiveness and Fostering Successful Entrepreneurship, in: Reforms for Stability and Sustainable Growth

Oriens (2008): Recovery. A Program for Economic Revival in Hungary

P. Kiss, G. – Karádi, P. – Krekó, J (2005): 'Structural challenges towards the euro: fiscal policy', MNB Background Studies, 2005/1

Rajan, R. – Zingales, L. (1998): Financial Dependence and Growth, American Economic Review

Romain Ranciere – Aaron Tornell – Athanasios Vamvakidis (2009): 'Currency Mismatch and Systemic Risk in Emerging Europe', mimeo
Tasic, N. – Valev, N. (2009): The Provision of Long-term Financing in the Transition Economies, Journal of Comparative Economics
Tirpák, A. – Rosenberg, C. B. (2008): 'Determinants of Foreign Currency Borrowing in the New Member States of the EU', No 08/173, IMF Working Papers, International Monetary Fund
Tornell, A. – Ranciere, R. – Vamvakadis, A. (2009): Currency Mismatch and Systemic Risk in Emerging Europe, Draft Paper for the 51st Panel Meeting of Economic Policy in Madrid
Vamvakidis, A. (2008): 'Convergence in Emerging Europe: Sustainability and Vulnerabilities', IMF Working Papers 08/181, International Monetary Fund

4. Considerations for the euro adoption strategy

The global financial and real economy crisis of recent years has resulted in very many economic policy lessons for Hungary as well. In this chapter, relying on the foregoing conclusions of this report and on our earlier publications, we draw conclusions regarding the euro adoption strategy of Hungary. As a starting point, we take the issues discussed in the above chapters as a basis and discuss two questions: (1) How did the crisis affect the euro area as a whole and the Member States with weaker fundamentals? (2) What effect did the crisis have on Hungary's expected convergence path? Based on the lessons discussed, we draw up an updated picture of the main determining factors of Hungary's euro adoption strategy.

Our major conclusion is that Hungary needs a stability-oriented economic policy following the first stage of crisis management as well. Steps in the direction of equilibrium and a sustainable macroeconomic path also facilitate the meeting of the convergence criteria required for the adoption of the euro. With regard to timing, we think that setting a credible target date for the adoption of the euro may take place based on stable fundamentals, especially on clear results attained in the fields of price stability and fiscal discipline.

The most important conclusion of the first comprehensive analysis, based on optimum currency area criteria, prepared by the MNB (Csajbók – Csermely (ed.) (2002)) in 2002 was that adoption of the euro would entail considerable advantages for Hungary. Therefore, it was worth entering the euro area as soon as possible. Of the advantages, the study highlighted the quantifiable ones stemming from the expansion of foreign trade and the lower interest rate level and, of the ones that are more difficult to quantify, the greater protection against external shocks.

Following EU accession in 2004, several official euro adoption target dates of the government became infeasible – as a result of the extremely loose and unsustainable fiscal policy conducted for years. In this situation, which turned increasingly unfavourable, the chances for adoption of the euro also declined. Although the main message based on the advantages of euro-area membership remained unchanged in the MNB's 2006 and 2008 Analyses of the Convergence Process, more emphasis was put on the conditions necessary for the successful adoption of the euro. One of these is fiscal consolidation. The 2006 analysis dealt with the structure of consolidation, focusing on the correlation between consolidation and long-term growth. An important conclusion in 2008 was that, in addition to the formal convergence criteria (fiscal deficit below 3 per cent, government debt below 60 per cent or declining government debt), consolidation also had to include the achievement of the medium-term fiscal objective (MTO) and the creation of adequate room for fiscal manoeuvre, before euro accession. Moreover, not the least based on euro-area experience, the 2008 analysis also emphasised that the advantages provided by euro area membership can be utilised to a greater extent by increasing product and labour market flexibility. Regarding the timing of the necessary steps, the analysis argued that giving up independent monetary policy would not be a strong counter-incentive to the reforms. Sufficient fiscal room to manoeuvre is also needed for the implementation of these reforms.

We continue to consider these considerations relevant, although the importance of new aspects has also increased during the crisis. The convergence prospects of the euro area and Hungary are presented below focusing on two issues: the sustainability of economic developments and the challenges stemming from the increased volatility of capital flows.

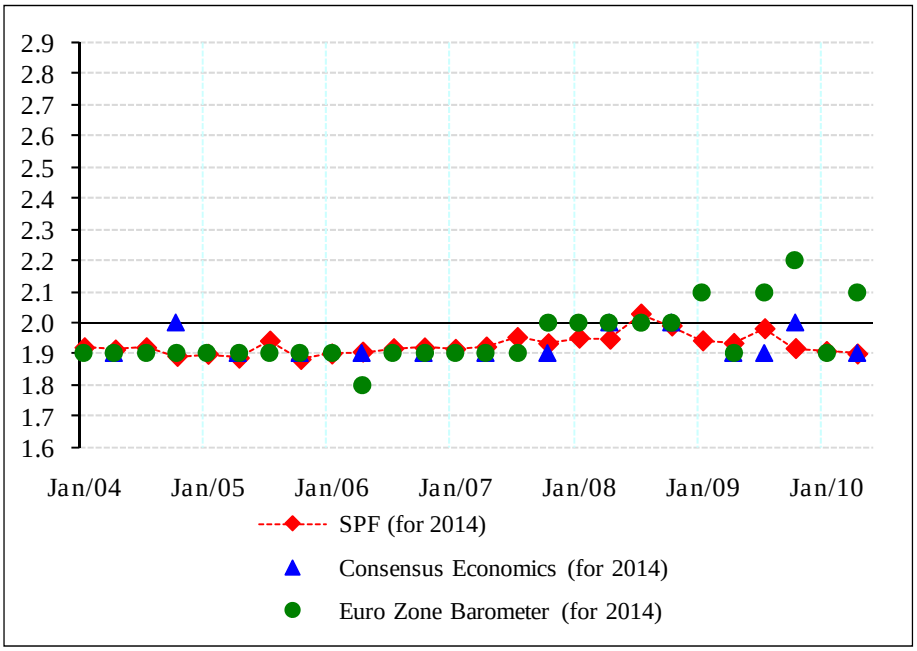
4. 1. The euro area in the crisis

The crisis since the summer of 2007 – including the fiscal risks that have been strengthening recently – can indisputably be considered the greatest shock in the history of the hardly 10-year-old monetary union. Similarly to other countries of the world, the euro area was also hit extremely hard by the crisis: in 2009 the decline reached 4 per cent and unemployment increased by 4 million people in the area as a whole, standing at 9.8 per cent at the end of the year.

Looking from outside – in spite of the deep recession – the euro area as a whole seemed to be a shelter in the crisis. One of the underlying reasons is that global imbalances accumulated mainly outside Europe, and

thus the burden on the euro area is lighter in the adjustment as well; see Chapter 2. In addition, it was possible to successfully preserve long-term stability and credibility in the euro area: monetary policy – and fiscal policy in many member countries – was able to ease, reducing real-economy costs, in a way that long-term interest rates and inflation risks did not increase. Owing to the monetary union, it was also possible to prevent the turbulent exchange rate fluctuations among member countries from further deepening the crisis.

Chart 4-1: Long-term inflation expectations in the euro area



Source: ECB.

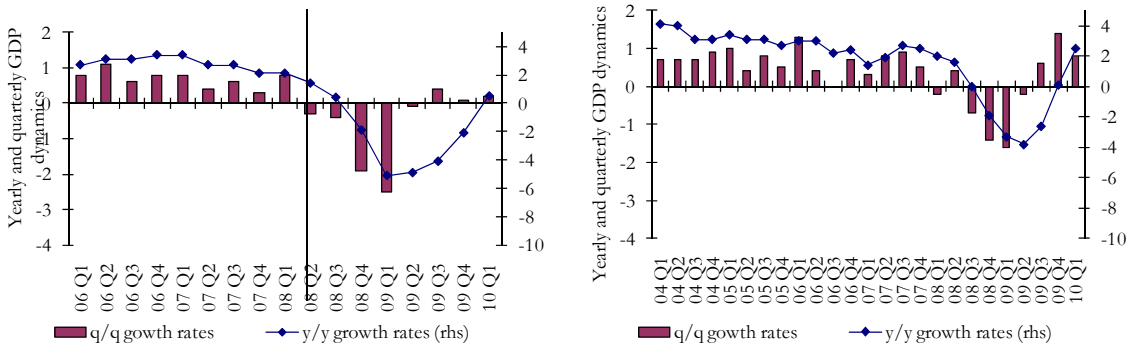
Moreover, the common monetary policy – including liquidity expansion and non-orthodox measures – passed the test on managing financial stability risks as well with a good result. The situation in European interbank markets gradually returned to normal in 2009, and risk premia declined close to pre-crisis level by end-2009. The monetary strategy of the ECB relying on two pillars constitutes a good basis to take financial imbalances into account with greater weight in the future than before in formulating monetary policy.[75]

From outside the euro area, the euro area seemed to be an area of stability especially in the countries without adequate economic policy credibility, and the demand for stability led to reassessment of the advantages represented by euro area membership. However, the most recent developments in early May have revealed the vulnerability of the entire euro area. The Greek crisis, which will be discussed at length later, threatened the stability of the entire euro area by early May 2010. Over the May 8-9 weekend both the Ecofin Council and the ECB's Governing Council made extraordinary decisions and stood firmly behind fiscal consolidation. Member states established a European stabilisation mechanism, which, in case of need, could provide support, together with the IMF, to member states in difficult situation, up to hundreds of billions of euro. In the meantime, the ECB announced its Securities Markets Programme, which includes interventions to address tension in the debt securities markets.

Building on credibility, the short-term economic incentive measures were fruitful in the euro area: starting from 2009 H2, quarter-on-quarter indicators already suggested a gradual upturn in the economy, although in a moderate pace compared to the USA.

[75] See, for example, the speeches of Trichet (2010) and Stark (2010).

Chart 4-2: Economic growth in the euro area and the USA



Source: Eurostat.

However, it is also worth mentioning that recovery does not result in rapid growth in the medium term: according to the forecasts of major institutions, the growth rate in the euro area will not reach the pre-crisis dynamics until 2011.

While the euro area showed stability at aggregate level, the different macroeconomic fundamentals of the countries caused increasingly strong tensions within the area: by the beginning of 2010 significant imbalances had evolved across some of the euro area member countries. The difficulties emerging for the countries participating in the monetary union are partly identical with global problems. While the aggregate balance of payments of the EMU vis-à-vis the rest of the world was roughly balanced, imbalances similarly substantial to those in the global economy accumulated within the monetary union.[76]

The only region in the world economy where capital flowed in the direction of the less developed countries was the EMU and, in a wider sense, the EU. Higher capital flows have been an objective of economic integration and an important mechanism of catching-up from the beginning. Nevertheless, the unsustainably high indebtedness of individual sectors may be dangerous for both the country and the monetary union itself. The divergence within the euro area was most notably reflected in the balance of payments positions. Although this was a global phenomenon in the period of the 'great moderation', the magnitudes evolved in the euro area were much greater than those experienced in other regions.

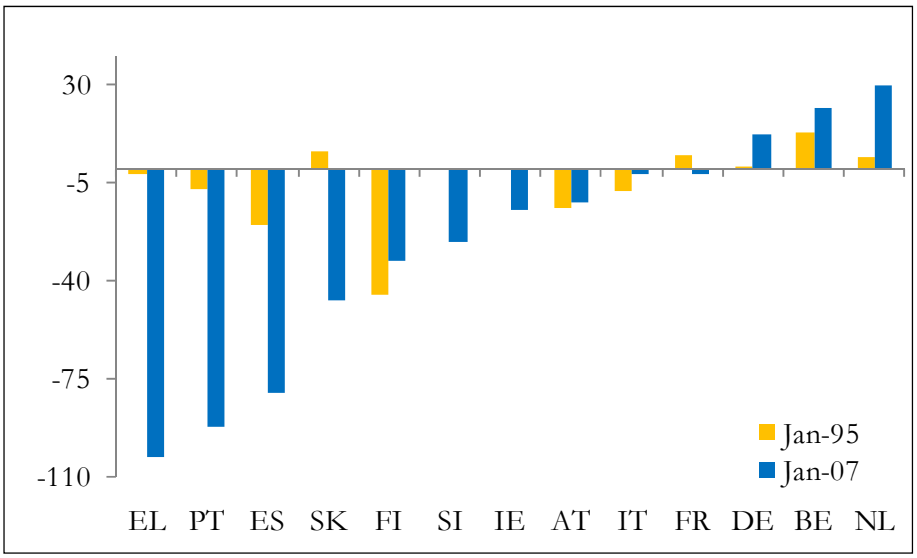
Doubts arose especially in connection with the macroeconomic and financial stability of Portugal, Spain, Ireland, Italy and Greece (EMU-5). Although these countries started to be mentioned together in financial markets, the roots of their macroeconomic problems are not the same.

The participation in the monetary union affected the behaviour of the EMU-5 countries to a significant extent. Owing to the single currency, risk premia were much lower than outside the monetary union: they did not include the exchange rate risk, and until 2009 credit risk was also a negligible premium. This stimulated agents' indebtedness and the unsustainable growth of certain asset prices (e.g. housing prices), and contributed to external imbalances.[77] Accordingly, the EMU-5 countries accumulated significant external vulnerability by the time of the eruption of the crisis. However, in the opinion of the market, sustainability risks were not significant until 2009.

[76] In spite of the fact that the balance of payments of the monetary union as a whole was nearly balanced vis-à-vis the rest of the world, Member States have a significant turnover of goods, services and capital with the rest of the world. It turned out in the crisis that these extensive relations – gross flows and stocks – played an important role in the transmission of the crisis across the great regions of the world, although net values were low.

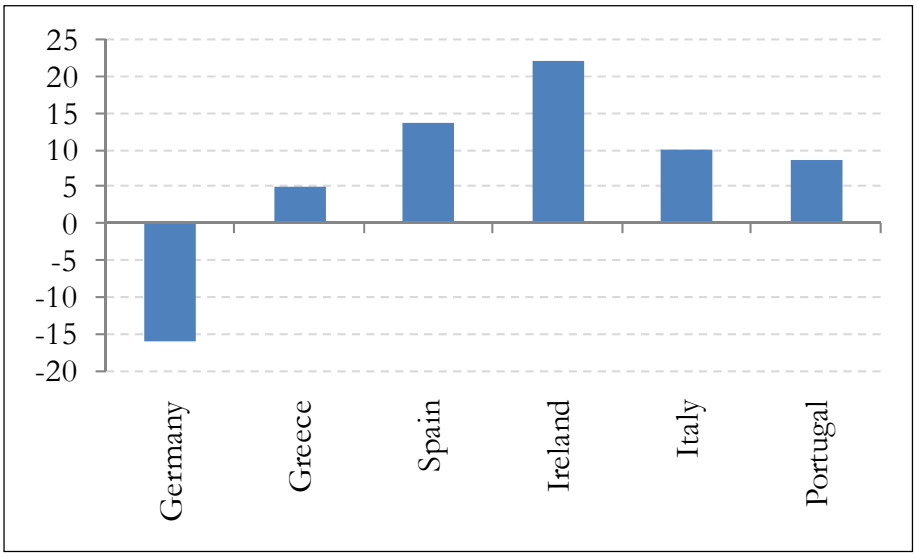
[77] European Commission (2009a): pp. 29–30, Box 3.

Chart 4-3: NFA positions in the euro area



In the case of Greece, financial vulnerability was mainly caused by undisciplined fiscal policy and, similarly to Portugal, continuous external capital inflows owing to low domestic savings, while financial vulnerability in Spain and Ireland was a result of the substantial and steadily increasing weight of the real estate sector and its rapid growth based on loans. None of the aforementioned problems was typical of Italy: markets started to treat Italy together with the other indebted countries because of its slow growth and gradually fading international competitiveness as well as its high government debt coupled with the aforementioned problems. Over the years, significant differences accumulated across countries within the euro area in terms of wage and price competitiveness as well (Chart 4–4). For example, Germany benefited significantly, while the EMU-5 suffered from a deterioration in competitiveness.

Chart 4-4: Cost competitiveness (on unit labour cost basis, whole economy vis-à-vis the EMU-16, change, 1999–2008, in %)



Source: European Commission: Price and Cost Competitiveness Indicators.

In the spring of 2010, Greece is facing serious problems that were previously unimaginable in the euro area. The sustainability of Greek government debt has been fundamentally questioned in financial markets. The period when Greece was able to finance its fiscal deficit of above 10 per cent and the highest government debt in the EU with a few basis point premium came to a sudden end. Greece found itself in

the vicious circle that is well-known in emerging countries, where interest rates that radically increase as a result of the deteriorating perception add to the interest expenditures, but the restoration of market confidence would require a rapid and substantial improvement in the balance of the budget. All this results in fiscal demand reduction – through tax increases and expenditure cuts – of a size that strangles economic growth. And *ceteris paribus* the economic downturn makes the fiscal balance even worse, adding to the magnitude of the necessary adjustment. The situation in Greece is made even more difficult by the fact that it is a part of the euro area, and monetary policy channels of adjustment are unavailable. Owing to the high external debt of Greece, it is not clear at all whether an independent exchange rate and devaluation would facilitate adjustment. However, it is certain that as a part of the euro area, in absence of an independent exchange rate policy, the necessary adjustment and the improvement in competitiveness must be implemented through nominal price and wage adjustment. This will most probably be a protracted process entailing severe social sacrifices.

Accordingly, the latest experiences clearly point out that euro-area membership does not automatically guarantee macroeconomic stability. In summary, we may say that in individual member countries partly different reasons resulted in the evolution of significant and permanent differences in price and cost competitiveness, the large trade and balance of payments deficits and the accumulation of debt stocks. Nevertheless, it can also be established that if significant adjustment becomes unavoidable within the euro area, that will be an inevitably protracted and painful process, irrespective of the reasons. It is an important lesson for prospective members as well that euro-area membership is not a substitute for the creation and maintenance of macroeconomic stability.

According to the Commission's evaluation (European Commission, 2010), the competitiveness of the countries concerned has to be improved considerably in the course of the adjustment. Not only in order to restore external equilibrium, but also in the interest of labour market equilibrium, because without price and wage adjustment unemployment may continue to increase, and the unemployment rate could get stuck at a high level if an upturn in the export sector was unable to offset falling domestic demand.

4. 2. Meeting the convergence criteria

A brief overview of Hungary's progress in meeting the convergence criteria is presented in the following, and then two key areas (macroeconomic sustainability and the role of capital flows) are examined as these have become more important in terms of the adoption of the euro as a result of the crisis.

One of the consequences of the deep economic recession was the rapid decline in inflation all over the world. In 2008 H2 the decline in inflation was mainly the result of the sudden fall in commodity prices. In a few months, oil prices fell by approximately 70 per cent from the historical peak reached in the summer of 2008. This imported disinflationary effect, which appeared in the overall price index quickly through fuel prices, was complemented by price deceleration stemming from the economic downturn. In this macroeconomic environment, both the evaluation of the inflation criterion and the chance of meeting it by Hungary are different than in the past.

The **inflation criterion** is determined by the average of the three best-performing EU countries in terms of inflation. According to the current Convergence Reports of the ECB and the Commission, countries with temporarily negative inflation may also be included in the reference group if the price index becomes negative due to reasons affecting the EU as a whole.[78] Consequently, it is no surprise that the inflation criterion, even excluding the exception country with lowest inflation, sank to its historical low in March 2010, and its value is only 1.0 per cent, even together with the 1.5 per cent tolerance band. Therefore, it is

[78] However, Ireland, where inflation is the lowest (-2.3 per cent), has been classified as an exception, so at present the reference group comprises Portugal (-0.8 per cent), Estonia (-0.7 per cent) and Belgium (-0.1 percent).

much lower than the ECB's objective.[79] It is also worth mentioning in connection with the criterion that it did not happen in the past that negative values were classified as 'best'.

Due to the outliers, analyzing and graphing the inflation criterion is a challenging issue. Previously using a mechanical rule, i.e. taking the average of the three lowest non-negative values, one could easily chart the time series. Determining the outliers, however, is necessarily based on economic assessment; thus, the reference series cannot be prepared automatically. In the future, we should be prepared that, as long as there are negative inflation rates in the EU, only the institutions preparing the convergence report will be in a position to determine the exact value of the inflation criterion.

Looking ahead, the currently extremely strict inflation criterion and in general its reference value determined on the basis of countries with negative inflation implies the risk that the MNB's 3 per cent inflation target may even be farther from the criterion. Accordingly, it cannot be ruled out that considerably lower inflation will be required when attaining the inflation target in order to meet the criterion. Nevertheless, we believe that the most probable scenario is that as the effects of the crisis fade, over the medium term the value of the inflation criterion will be close to the ECB's target.

In the period of the deep and protracted recession Hungary has come closer to price stability and meeting the inflation criterion. Owing to the tax increases, the decline in inflation cannot yet be seen in the headline data, but it is definitely a favourable sign that the rate of price increase of services, which had been consistently high in the past, fell considerably during 2009. Trend indicators calculated from core inflation also point to a low inflation environment over the medium term. As a result of the large negative output gap evolving as a consequence of the economic downturn, according to projections, price indices below the 3 per cent inflation target are expected for 2011.

It is important, however, to make it clear that the below-target 2011 inflation outlook does not automatically guarantee maintaining price stability over the medium term. Price stability means inflation permanently close to 3 per cent, and to attain this, inflation expectations also have to be in line with the target. All of this also means that increased attention is necessary to ensure that the low inflation environment becomes embedded in inflation expectations as well. This requires that economic agents take the inflation target as a reference point when making their wage and pricing decisions. Otherwise, in parallel with the economic recovery, inflation in Hungary may increase again over the medium term, making it more difficult to meet the inflation criterion.

By creating price stability and anchoring expectations at a low level, meeting the inflation criterion of convergence may also become imminent, although two potential risks must also be mentioned in addition to the above.

On the one hand, caution is warranted by the experiences regarding asset price and loan bubbles. One of the main global lessons from the crisis is that price stability and anchored inflation expectations alone do not represent any guarantee for financial and real economic stability. At the same time, according to the experiences of the EMU-5, inadequately anchored inflation expectations may contribute to the development of a future asset price bubble as well, in addition to direct costs caused by inflation and the effect that impairs competitiveness, due to the expected negative real interest rate.

On the other hand, global inflationary pressure may be a source of further risks. Hungary is a small, open economy, and therefore changes in domestic demand are only one of the important factors behind developments in inflation outlook and nominal convergence prospects. Another very important factor is what happens to imported inflation and thus to the global output gap.[80]

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[79] A below, but close to 2 per cent value is considered to be price stability in the euro area.

[80] In recent years numerous studies have focused on the subject that developments in a country's inflation are determined less and less by the domestic output gap and determined more and more by the global output gap. See e.g. Mody – Ohnsorge (2007). This correlation may especially be pertinent in the case of small, open economies such as Hungary.

In connection with the developments in global output gap, we may primarily be interested in those products that react to the changes in external economic conditions in a very sensitive manner. Commodity prices can basically be considered as such products, since processed tradable products have been characterised by rather stable price developments in Europe for a longer period of time. Regarding commodity prices as well, it is worth paying special attention to developments in oil prices, which represent a significant weight in the production of GDP and in consumer prices[81] on the one hand, while on the other hand Hungary (together with the related gas prices) can be considered a net importer to a significant extent, i.e. the economy reacts to the changes in these prices in a sensitive manner through foreign trade as well.[82] In addition, it can be established that the price of oil, as opposed to food prices, is less dependent on non-macroeconomic factors such as the weather.

As was already experienced in 2008 H1, Hungary is very sensitive to oil price increases. The deterioration in the terms of trade impairs *ceteris paribus* the external equilibrium position, and reduces domestic players' disposable income. Increasing inflation resulting from rising oil prices, in turn, may cause accumulated problems in Hungary because inflation expectations are not yet anchored. This means that the economy may simultaneously face growing inflationary pressure and a deterioration in growth and external equilibrium.

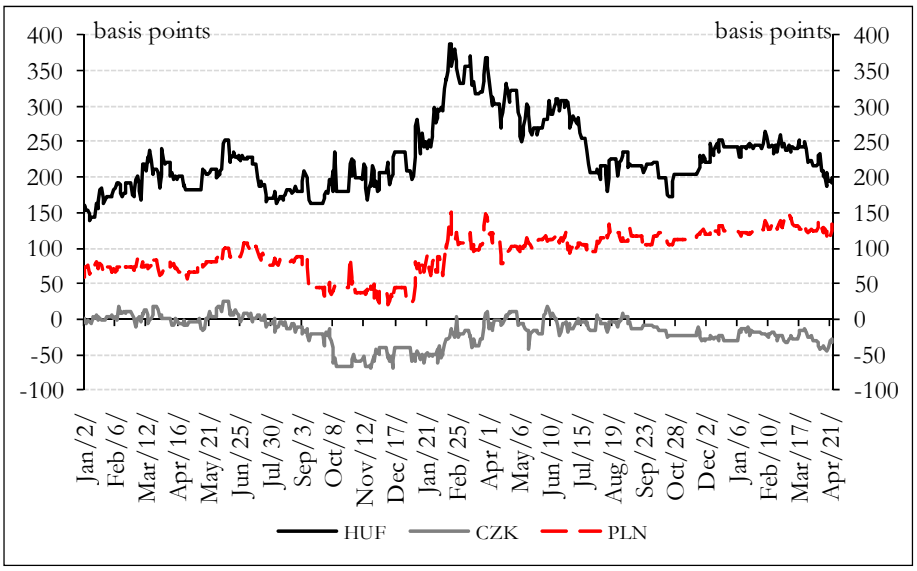
In summary, as inflation expectations are not anchored, the sharp increase in oil prices may result in a more permanent inflationary pressure in Hungary than in the euro area, rendering it more difficult to meet the convergence criterion and impairing external equilibrium and through that sustainability as well at the same time.

As opposed to the inflation criterion, meeting the **long-term yields criterion** clearly became a more remote target during the crisis. The risk premium of forint yields increased considerably in the last two years, making it more difficult to meet this criterion. From the aspect of medium-term prospects it is an unfavourable development that not only the yield premium directly observable in long yields is high, but the forward interest rate spreads (e.g. 5-year premium 5 years ahead, Chart 4-5) are also higher than before the crisis, and have not declined significantly in recent months either, in parallel with the improvement in global risk appetite and a decrease in domestic sustainability risks. All this suggests that market participants' assessment of the situation is improving only slowly due to the high debt stocks. Progress along a sustainable path for a longer period of time and a gradual reduction of debt levels are required to strengthen market confidence.

[81] A 10 per cent oil price shock increases the consumer price index by approximately 0.5 per cent in a year.

[82] According to the calculations of the MNB, a 10 per cent oil price increase results in an approximately 0.3 percentage point deterioration in Hungary's terms of trade.

Chart 4-5: 5-year interest rate spread 5 years ahead in the region



Source: Reuters.

As far as the **exchange rate criterion** is concerned, Hungary is not yet a member of the ERM-II exchange rate mechanism, so formally it cannot even meet this criterion. The timing of entering ERM II within the framework of the convergence process is discussed in more detail below.

It is not clear whether the criteria regarding **fiscal policy** (fiscal deficit and government debt) can be met. On the one hand, the fiscal adjustment definitely improved longer-term fiscal sustainability. According to the balance excluding the effect of the economic cycle, the deficit is already below the 3 per cent criterion. However, based on the only gradually closing output gap this does not mean meeting the deficit criterion: these calculations reveal that – without further measures – the actual deficit will exceed the criterion in the coming years as well. In addition, there are significant structural tensions on the expenditure side of the budget, which were already mentioned in Chapter 1.3.2. A further difficulty is that – despite the substantial adjustment – the level of debt has increased in the last two years. As presented in Chapter 1.3.2, the debt ratio is expected to decline steadily from 2011 on, allowing a formal meeting of the debt criterion. Nevertheless, high indebtedness compared to the level of development of the Hungarian economy will be a source of vulnerability for a longer period of time.

4. 3. Macroeconomic sustainability

Following EU accession, rapid real convergence of the new member countries was financed primarily from external sources. As discussed above, although in terms of its main elements this strategy was in line with the theoretical considerations determined for developed and catching-up countries, looking ahead it needs to be modified. This compulsion to change may be extremely sharp in Hungary due to the high debt levels. Concentrating on sustainability, below we provide an overview of the expected path of three key variables (equilibrium real exchange rate and real interest rate as well as GDP growth), relying on the conclusions of Chapter 1.

From the aspect of the euro adoption strategy, determining the equilibrium real exchange rate is one of the most important issues. The equilibrium real exchange rate plays a prominent role when the euro conversion rate is determined. A real exchange rate level applied upon joining and proving to be wrong subsequently or a major misalignment may result in costly adjustment within the euro area. However, the equilibrium real exchange rate will be relevant well before the adoption of the euro, upon joining the ERM II, since it will serve as a basis for determining the central parity required for entry.

In a theoretical framework, in its steady state the equilibrium real exchange rate simultaneously ensures price stability and growth corresponding to potential and, stemming from this, the sustainable external equilibrium position as well. Of course, in practice definition of the equilibrium real exchange rate is much more uncertain, which is well-reflected by the fact that there are many kinds of methods in economic literature that have been tried in order to capture equilibrium real exchange rate.[83] In addition to this general uncertainty, determining equilibrium in Hungary in the present situation is even more difficult: separating the cyclical, one-off effects from longer-term trend represents an extremely great challenge at the bottom of the cycle. Following the recovery of the economy, we will have a more robust picture of trend developments. In other words: closer to the long-term equilibrium path of the economy, knowing the balance of payments position, the real interest rate and the growth rate belonging to the equilibrium path it will be possible to determine the equilibrium real exchange rate with a smaller degree of error.

Considerations concerning the sustainability of economic processes will become more valuable in the period ahead. In connection with euro adoption, the sustainability of the external and fiscal positions may become a particularly important question, as the possibility of adjustment through the nominal exchange rate will not exist anymore following adoption of the euro. Real interest rate and potential growth play a key role in the assessment of the sustainability of the debt ratios. The real interest rate practically determines the dynamics of the increase in debt, while potential growth indicates the load-bearing capacity of the economy. As described in detail in Chapter 1, in spite of the consolidation that has taken place to date, sustainability risks remain persistently high, owing to the high external and government debt.

4. 4. Capital flows

In the EU, the crisis has cast light upon the asymmetry between financial and monetary integrations and the resulting risks. The principles of the EU include the free movement of people, goods, services and capital as well. New member countries that joined in the 2000s indisputably took great advantage of the absolutely free movement of capital. Starting from a very low level, financial deepening added to the welfare of the countries concerned, and in the single capital market it was easier and cheaper to finance rapid growth and real convergence. Although doubts had been expressed in connection with the rapid credit growth and increase in external debt already prior to the crisis as well (see e.g. Stark, 2008), both market participants and economic policy makers considered the risks basically managable. The financial consequences of the crisis and the sudden drying up of capital flows affected the region in an extremely severe manner; therefore, it is an important economic policy task to draw the adequate lessons and mitigate future risks.

Almost all those concerned agree that the best possible way to handle the asymmetry between financial and monetary integration over the longer term is by the expansion of the euro area. It is well-illustrated by the crisis that in terms of capital flows – as a result of close commercial banking relationships – the whole EU is considered to be an optimum currency area (OCA). Accordingly, an OCA criterion is met in a dimension that received much less attention earlier.

Box 4-1: Capital flows in the OCA theory

The integration of financial markets was taken into account even in the earliest OCA literature. For Ingram (1962), financial market integration meant an alternative adjustment mechanism to asymmetric shocks, instead of the exchange rate adjustment lost because of the monetary integration. Moreover, according to McKinnon's approach two areas may be optimal even if they are subject to asymmetric shocks, but financial integration allows economic agents to diversify their assets in the markets of the participating countries (OCA II). Thus, they practically insure themselves against the fluctuations in the income of their own country.

[83] Bussiére et al. (2010) provide an up-to-date overview of the most frequently applied methods.

However, Buiter (1999) went even further: in his opinion the original OCA theory is incomplete because financial integration itself also has to be considered an OCA criterion. With the level of financial integration reached by modern economies, the ability of individual countries is limited to influencing the financial conditions (interest rates, premia and exchange rate), as – contrary to the apprehension of the traditional OCA and OCA II literature – financial markets are primarily not the mechanisms of adjustment to shocks, but at least as much, or even more, the sources of shocks. In this context, the exchange rate is particularly not an additional monetary policy instrument among the other ones aiming at the creation of macroeconomic stability. For a financially integrated country, participation in the monetary union is the optimum monetary regime.

The crisis also revealed that it is not optimal in the case of financially integrated countries if co-ordination between the prudential supervision and the lender of last resort function is as weak as now, and is basically left in a national sphere of authority. When the stock of foreign currency loans is high, the central bank cannot completely carry out its lender of last resort function, and is able to expand the foreign exchange liquidity of the banking sector only by tapping foreign exchange reserves.

With regard to a shorter-term solution, however, there is no consensus at all. According to one of the opinions, euro-area institutions – particularly the ECB – have nothing extra to do in this matter, as by guaranteeing financial stability in the euro area and meeting parent banks' liquidity requirements they indirectly contribute to the stability of the financial system in the CEE region as well; see e.g. Trichet (2009).

A contrasting opinion emphasises the joint responsibility for financial stability borne in the single financial market; see e.g. Belka (2009). According to this reasoning, as a result of speculation, the volatility of capital flows in the markets may be higher than what is fundamentally justified. In absence of limitations on capital, speculation against individual countries can only be prevented by joint, European-level actions. In the future, the close co-operation of intra and extra euro-area central banks and financial supervisory authorities, which is transparent for the market (e.g. the provision of swap facilities), will be able to successfully stabilise capital flows, even in turbulent times. Setting up the European Systemic Risk Board with the participation of all EU Member States can be considered a step in this direction, and such a step can be the institutionalised form of providing euro and Swiss franc swap facilities within the framework of bilateral agreements between ESCB members during the crisis.

Box 4-2: Convergence prospects in the region

For describing the domestic experiences of the crisis, it is worth taking stock of what the current opinions on the adoption of the euro in the region are.

It is expedient to start this brief summary with the presentation of the experiences of Slovakia and Slovenia, which already underwent the crisis as euro area members. **Slovakia** entered the euro area practically following the early signs of the crisis. The new central rate determined after the 8 per cent revaluation in May 2008 was the accession exchange rate. This also means that throughout the crisis Slovakia had to adjust at this fixed, historically strongest exchange rate. Of course, from the euro-area experiences of hardly more than one year only very limited lessons can be drawn, but data available up to 2009 Q4 suggest that the Slovak economy has already passed the turning point of the economic cycle. According to the quarter-on-quarter indicators, following the extremely deep decline of more than 8 per cent in Q1, starting from Q2 the Slovak economy showed a gradual acceleration. Accordingly, the recovery is not slower than what has been attained by the other Visegrád countries with a weaker nominal exchange rate. As a result of the disciplined developments in wages, the gradual recovery is also shown by

the fact that the unit labour cost based real exchange rate demonstrated strengthening only in the quarter when the downturn was severe, and since then the index has been negative.[84]

As a small, open economy **Slovenia** is one of the euro area countries that was hardest hit by the crisis. In 2009, the Slovenian economy shrank by 7.3 per cent, exceeding the contraction of the Hungarian economy as well. However, recovery from the recession is shown by the quarter-on-quarter indices, which were already positive from 2009 Q2 on. Looking ahead, only moderate, slowly improving growth is expected, inter alia as a result of the consolidation following the fiscal stimulation in 2009. According to the Stability Programme, the crisis did not result in permanent competitiveness problems for the Slovenian economy, and net exports will make a positive contribution to growth in 2010 already.

In the **Czech Republic**, the joint opinion of the government and the central bank is (Assessment December 2009, Convergence Programme 2010) that for the time being they do not intend to determine a date for the adoption of the euro, and consequently the application for joining the ERM II is not on the agenda either. It is not a problem for the Czech Republic to meet the criteria regarding price stability, government debt level and long-term interest rates. Price stability was already attained in the early 2000s; long-term yields are at the same level with euro yields. In spite of the increase expected for the coming years, government debt will not exceed 45 per cent of GDP in 2012. As the Czech Republic is not a member of the ERM-II regime, it cannot meet the exchange rate criterion either, but, based on the low CZK/EUR volatility of recent years, meeting this criterion in the reference period will presumably not cause any serious problem either. In the period between 2005 and 2008, the Czech koruna appreciated by approximately 3 per cent against the euro annually, which also contributed to the low inflation in this period. Looking ahead, they believe that – with the already established credibility – even a stable exchange rate would not jeopardise price stability.

Nevertheless, owing to the fiscal deficit, which is expected to be above 3 per cent over the medium term as well (until 2012), adoption of the euro does not seem to be feasible for the time being. In addition, they also mention that it may pose a risk that – owing to existing difficulties, e.g. the problems of those who have been unemployed for a long time – synchronisation between the Czech Republic and the euro area may even decline in the coming years.

In **Poland**, the earliest possible adoption of the euro was on the agenda already preceding the crisis, and accordingly the country committed itself to joining the ERM II as soon as possible. With the easing of the financial market turbulence caused by the crisis, statements urging the adoption of the euro appeared again. Nevertheless, the official strategy became more refined, in particular concerning the issue of joining ERM II. Even the 2010 Convergence Programme says that safe participation in the ERM II is possible if the criteria of the adoption of the euro have already been met prior to joining the ERM II. Setting a target date for euro adoption can be credible in this case, and this is the way to ensure that only the shortest possible time is spent in the ERM II regime. In spite of the fact that Poland was the only EU Member State where the crisis did not entail recession, the fiscal deficit increased to above 7 per cent of GDP in 2009, and even according to the Convergence Programme the deficit may decline to below 3 per cent only by 2012. Owing to this fiscal path, at present the Polish government does not consider it possible to determine a credible target date for the adoption of the euro.

The euro adoption strategy of **Bulgaria** may be especially interesting for us for two reasons. First, Bulgaria has favoured quick ERM-II membership since its EU accession and, second, it has conducted a very strict fiscal policy for a longer time. However, in respect of the exchange rate regime an important difference is that as opposed to the free-floating forint, Bulgaria has a currency board similar to that of the Baltic countries. European decision-makers – the Commission and the ECB – do not support ERM-II entry despite the remarkably disciplined fiscal policy, exchange rate stability and inflation, which declined to below 2 per cent as a result of the crisis. Most often they refer to the external imbalance and the high

[84] Národná banka Slovenska: Unit labour costs in Slovakia, Monthly Bulletin, November 2009.

current account deficit as counter-arguments. In his speech of December 2009, striving to make economic agents prepared for another refusal, the governor of the central bank highlighted the tension between Bulgaria's efforts to join quickly and the resistance of the European Union (Iskrov, 2009).

The example of **Estonia** as an ERM II member, however, shows that despite the crisis it is not impossible to join the euro area right after the crisis either. All the three Baltic countries, which have their currency board arrangements, were extremely hard hit by the global economic crisis. In spite of the economic downturn in excess of 10 per cent, Estonia was able to adjust– inter alia with a fiscal tightening amounting to nearly 5 per cent of GDP – in a way that there is a good chance of adopting the euro in 2011. Based on the 2010 Convergence Programme of Estonia, a final decision in the EU is expected only in the middle of the year, but the signs – including the assessments in the Convergence Reports of the ECB and the Commission – are rather promising.

In general, both Commission and ECB officials have made very cautious statements regarding the eastern expansion of the euro area since the eruption of the crisis. They emphasised in all their public speeches[85] that the convergence criteria must strictly be observed, and that it is not possible to ease the conditions. In their opinion, adoption of the euro must enjoy very clear political support in the countries intending to join, and the stability of the economy, which can be captured in a less exact manner, must also be demonstrated. In terms of the functioning of the euro area, the rigour against future members is obviously not autotelic: in addition to the heavy burdens caused for the given country, divergence and adjustment problems within the euro area would make conducting the common economic policy more difficult, and eventually it would be costly for each member country. Thus, learning from the example of Bulgaria, the countries that are not ERM-II members yet must be prepared that the EU institutions will be very strict upon the assessment of the less explicit conditions of joining the ERM II.

4. 5. Conclusions

The most important conclusion of our 2008 *Analysis of the Convergence Process* – in line with the MNB's earlier publications based on meeting the criteria of the optimum currency area – was that the advantages of the euro for Hungary were considerable, and thus it was expedient to join the euro area as soon as possible. However, the experiences of earlier years called the attention to numerous risks. In this respect the *Analysis* identified fiscal consolidation over and above meeting the Maastricht criterion and pointing to the medium-term deficit target (MTO) as an important task. Furthermore, it established that product and labour market reforms also play a major role in increasing competitiveness.

The global crisis has highlighted that – in formulating the accession strategy – the free movement of capital must be taken into account with a greater weight than thought earlier. The underlying reason is that the financial integration based on the free flow of capital within the EU warrants the earliest possible adoption of the euro, especially in the countries with high foreign exchange debts.[86] As experienced recently, in turbulent periods non-euro area EU Member States face very volatile capital flows and a number of financial stability challenges stemming from this. Overall, at present we believe that the adoption of the euro is at least as much desirable from the aspect of the Hungarian economy as it was prior to the crisis.

Based on the latest European experiences, it is also clear that the adoption of the euro by itself is not a panacea. The advantages stemming from the adoption of the euro can only be exploited if it is fully supported by a disciplined economic policy. Following the introduction of the single currency fewer

[85] See e.g. Almunia: 'The Euro's Role on the World Stage', Vienna, November 2009; Trichet's hearings before the European Parliament in September and December 2009; Tumpel-Gugerell: 'A Case for Rapid Euro adoption', Vienna, November 2009.

[86] In this respect there is no substantial difference whether the greater part of the foreign exchange debt is in euro or another currency, e.g. Swiss franc, as following the adoption of the euro it will be possible to convert the Swiss franc denominated debt stock to euro at a low cost, proportional to the interest rate differential.

channels of adjustment are available, and so if a member country diverges more permanently from the core with stable fundamentals, the inevitable adjustment may be protracted and painful in the monetary union.

As far as the possibility of the adoption of the euro is concerned, more and more signs indicate that the European institutions will strictly examine compliance with the convergence criteria in two dimensions as well. First, in addition to the well-known nominal convergence criteria defined in the Treaty, they will also thoroughly examine the stability of the economy. Second, the stability of the economy as well as external and fiscal sustainability will have to be demonstrated well before the adoption of the euro, even for joining ERM II.

Consequently, the Hungarian euro adoption strategy must focus on sustainability and on ensuring the stability of the economy. In this respect, several favourable signs are visible. Real economic adjustment, which started as a result of the crisis management steps, has significantly improved the medium-term prospects for external equilibrium. The deep economic recession brought the MNB's inflation target within reach, and may thus make attaining and sustaining price stability easier. Fiscal policy also shifted towards equilibrium; following the initial surge, debt may follow a declining, sustainable path.

Nevertheless, for the time being the favourable developments are very fragile and numerous risks remain. In terms of inflation, the greatest challenge is to ensure consolidation of the low inflation environment in Hungary from 2010 H2 on. Without anchoring inflation expectations there is a strong risk that the expected economic recovery may be coupled with inflationary pressure. Fiscal policy must take further efforts to meet the deficit criterion. In general, it can also be established that markets may consider equilibrium fragile even for a longer time owing to the high external and government debts; therefore, economic policy must continuously prove its commitment to stability.

In the current situation, there is great uncertainty concerning longer-term economic prospects: we cannot see exactly where the level of potential output will be following the crisis, and what the magnitude of its growth dynamics may be in the coming years. Consequently, the assessment of sustainability risks is also uncertain, since we cannot see clearly how the load-bearing capacity of the economy will change. In parallel with the recovery of the economy, we will be able to better capture trend growth as well and determining the optimum fiscal path will also be easier. When defining the fiscal path, attention must be paid not only to making Hungary exit from the excessive deficit procedure, but also that adequate scope for fiscal measures remain, enabling economic policy to react in the event of a negative shock following adoption of the euro, even in absence of independent monetary policy. It should be done similarly to what was observed in euro-area countries with disciplined fiscal positions during the crisis. In a near-equilibrium situation it is also easier to convince European partners of the commitment of the Hungarian economic policy to stability and of the sustainability of outstanding debts.

In summary, we believe that Hungary needs a stability-oriented economic policy following the first stage of crisis management as well. Steps in the direction of equilibrium and a sustainable macroeconomic path also facilitate the meeting of the convergence criteria required for adoption of the euro. With regard to timing, we think that setting a credible target date for the adoption of the euro may take place based on stable fundamentals, especially on clear results attained in the fields of price stability and fiscal discipline. It will be possible to determine the concrete schedule, including the date of ERM-II accession, based on this credible target date.

References

Almunia, J. (2009): 'The Euro's Role on the World Stage', Vienna, November 2009

Belka, M. (2009): 'Five Years after EU Eastward Enlargement', ÖNB, Focus on European Economic Integration, Special issue

Buiter, W. (2000): Optimal currency areas: why does the exchange rate regime matter? (with an application to UK membership in EMU). CEPDP, 462. Centre for Economic Performance, London School of Economics and Political Science, London, UK

Bussière, M., M. Ca' Zorzi, A. Chudík and A. Dieppe (2010): Methodological advances in the assessment of equilibrium exchange rates, ECB Working Paper No. 1151

Csajbók, A. – Csermely, Á. (ed.) (2002): 'Adopting the euro in Hungary: expected costs, benefits and timing', MNB Occasional Papers, OP24

2010 Convergence Programme of the Czech Republic

Czech Republic (2009): Assessment of the fulfilment of the Maastricht convergence criteria and the degree of economic alignment of the Czech Republic with the Euro area, Prague 2009

Analysis of the Convergence Process (2006): MNB

Analysis of the Convergence Process (2008): MNB

European Commission (2009a): Quarterly report on the euro area, No. 1. March http://ec.europa.eu/economy_finance/publications/publication_summary14648_en.htm

---------- (2009b): Economic crisis in Europe: causes, consequences and responses, http://ec.europa.eu/economy_finance/publications/publication_summary15885_en.htm

European Commission (2010): Quarterly report on the euro area, No. 1. March http://ec.europa.eu/economy_finance/publications/publication_summary14648_en.htm

Fatas, Antonio and Ilija Mihov (2010): Maybe the Euro was not such a bad idea, http://fatasmihov.blogspot.com/2010/03/maybe-euro-was-not-such-bad-idea.html

Gros, Daniel (2010): Adjustment Difficulties in the GIPSY Club, CEPS Working Document, March, www.ceps.be/book/adjustment-difficulties-gipsy-club

Gros, Daniel and Thomas Mayer (2010): Towards a Euro(pean) Monetary Fund http://www.ceps.eu/book/towards-european-monetary-fund

Jonung, Lars and Eoin Drea (2009): The euro: It can't happen, It's a bad idea, It won't last. US economists on the EMU, 1989-2002, http://ec.europa.eu/economy_finance/publications/publication_summary16343_en.htm

2010 Convergence Programme of Poland

2010 Stability Programme of Slovakia

2010 Stability Programme of Slovenia

Stark, J (2010): 'Towards a stability-oriented policy framework', speech at the conference entitled 'Reconstructing the world economy – Redesigning the macro-framework' held in Korea

Stark, J (2008): 'The Euro at ten: lessons and challenges', speech at the Fifth ECB Central Banking Conference

Trichet, J-C. (2009): Hearings before the European Parliament's Committee on Economic and Monetary Affairs, September and December 2009

Trichet, J-C. (2010): Commentary on 'Fifty Years of Monetary Policy: What Have We Learned?' Symposium for the 50th anniversary of the Reserve Bank of Australia

Tumpel-Gugerell (2009): 'A Case for Rapid Euro adoption', Vienna, November 2009