

Gergely Baksay, Tamás Berki, Iván Csaba, Emese Hudák, Tamás Kiss, Gergely Lakos, Zsolt Lovas and Gábor P. Kiss: Developments in public debt in Hungary between 1998 and 2012: trends, reasons and effects*, ¹

Over the past decade, increasing public debt has become one of the most important problems for the Hungarian economy, significantly constraining the room for manoeuvre for fiscal policy and in some periods even calling into question its sustainability. As a percentage of GDP, gross public debt increased in the first half of the decade, mostly as a result of the high government deficit, after which economic stagnation and the eventual recession, along with a weakening exchange rate prevented a reduction of the debt ratio with tighter fiscal policy. By the end of the decade, public debt stood at around 80 per cent of GDP, which is very high compared to Hungary's level of economic development and to regional competitors. As a result of tight fiscal policy and the one-off impact of the transformation of the private pension system, the rate of public debt has been declining modestly since 2010, but this has also been offset by the revaluation of FX debt as a result of HUF weakening.

In this paper, we discuss the factors that contributed to the historically high public debt-to-GDP ratio by the end of the 2000s and identify the different subsections of the period between 1998 and 2012 that led to this situation. We treat the consequences of high public debt separately, present a survey of international data to compare debt ratios and note the differences between Hungary and other EU member states in terms of developments in public debt during the crisis.

KEY FACTORS CONTRIBUTING TO CHANGES IN DEBT BETWEEN 1998 AND 2012

Gross public debt is the primary economic indicator reflecting the financial liabilities of a government as inherited from past fiscal policy. Every budgetary policy decision affects the gross debt ratio directly or indirectly, and there are numerous other elements of economic developments which also influence this ratio; nevertheless, most of the reasons for changes in the debt ratio can be grasped by looking at four macroeconomic indicators, which summarise all of these impacts. The ratio of debt to GDP can be broken down into the effects of the following four macroeconomic indicators, in addition to other factors:

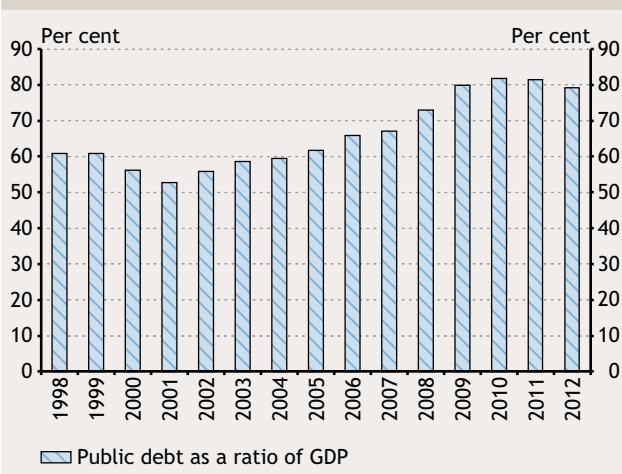
- the primary budget balance (which excludes interest payments),
- the real interest payable on outstanding debt,
- the real exchange rate,
- economic growth, and
- other factors, since the financial claims and debts of a government may also change irrespective of the budget balance.

Once the real interest rate, the real exchange rate and real growth are known, one can determine how the debt ratio would change assuming a balanced primary balance, i.e. purely as the result of the aforementioned macroeconomic factors alone. The result will also be influenced by the size of the outstanding debt, since one unit of impact will reduce or increase a higher debt ratio to a greater degree.

* The views expressed in this article are those of the author(s) and do not necessarily reflect the official view of the Magyar Nemzeti Bank.

¹ The time horizon for this analysis was set out in the call for applications underlying the article. Czeti and Hoffmann (2006) discuss the earlier trends in public debt for the period after the political transition.

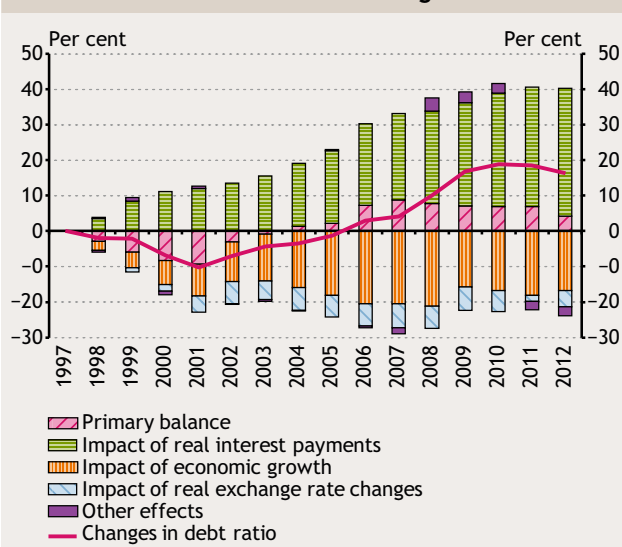
Chart 1
Public debt as a ratio of GDP



In an upward trend scenario, the literature refers to this as the 'snowball effect'.

The real interest rate paid on the debt and the real exchange rate can together be called the real financing cost of the debt and it typically increases the debt, as real interest rates tend to be positive. This effect can be offset, partially or even fully, by economic growth, as long as it is positive: if growth is high, the country can "grow out" of its debt. The combination of financing cost and economic growth determines that level of primary balance (debt stabilising primary balance), which is necessary to reduce the debt ratio.

Chart 2
Cumulative changes in the public debt-to-GDP ratio since 1997 and the reasons for change



A decomposition of the factors influencing public debt reveals the extent to which each of these contributed to the growth of the debt ratio by around 16 percentage points between 1997 and 2012 (Chart 1). First, we look at the overall impact of each factor over the period of 15 years (Chart 2) and then determine the periods of changes in debt over time on the basis of these factors (Chart 3).

Chart 2 shows that debt increased primarily because of the real interest expenditure on the outstanding debt over the period of 15 years from 1997, which indicates that the debt level may 'snowball' unless other factors offset this impact. The debt ratio can be reduced with tight fiscal policy and dynamic economic growth, but the circumstances usually did not favour either of these during the period in question in Hungary.

Throughout most of the 2000s, but primarily in the period between 2002 and 2006, fiscal policy allowed such high deficits that the primary budget balance less interest payments did not mitigate the debt in the 15 years under review; on the contrary, it increased it (the primary balance was negative on average over the entire period).

Until 2006, dynamic economic growth was able to mitigate the impacts of interest payments and, from 2002, the primary deficit, but as real GDP started to stagnate later, this effect disappeared and the recession in 2009 then actually added 5 percentage points to the debt ratio. It should be noted here that economic growth was strongly affected by fiscal policy cycles in Hungary for most of the 2000s. Overall, the fiscal impulse contributed substantially to the dynamic growth of the economy in 2002-2006, after which an impulse in the opposite direction reduced the rate of growth.²

The appreciation trend in the real exchange rate had a smaller effect. This factor was the result of the inflation differential between Hungary and other advanced economies. The nominal exchange rate was relatively stable, starting to weaken after 2008 and significantly impacting the debt only in 2011 and 2012.

There were several one-off factors which influenced gross nominal debt during this period. Of these, the most important ones were the IMF and EU credit facility loans in 2008 and the withdrawal of the government securities transferred from private pension funds to the government in 2011-2012.

² Hornok et al. (2008).

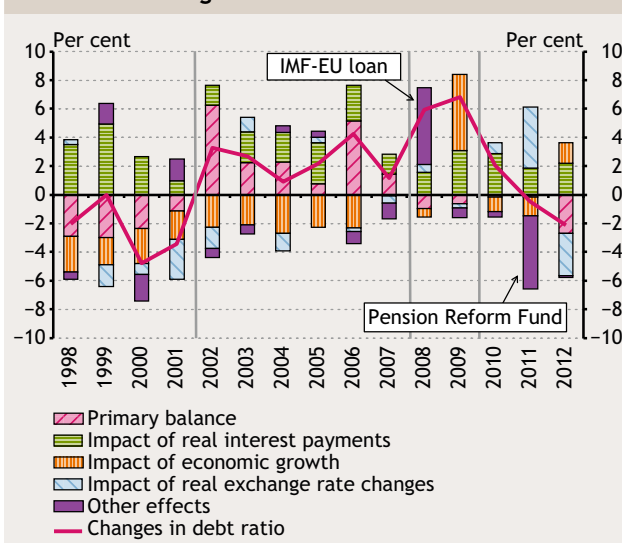
• In 2008, the Hungarian state took loans from the IMF and the European Commission in excess of its current financing needs. The debt management agency placed the surplus in currency deposits at the central bank or temporarily lent it out to domestic commercial banks. The concentrated drawdown of the credit increased gross debt by 5.5 per cent of GDP in 2008 (the net debt ratio, which is not analysed here, increased to a smaller degree since the amount placed as deposits or lent out was netted out). Later, however, this additional debt started to fall because, rather than issuing new debt, the debt manager used some of the FX deposits, which mitigated the debt-increasing impact of the government deficit in 2009–2010. Of the remaining credit, EUR 1.4 billion was used by the state to purchase MOL equities on the stock exchange, while the rest was held in FX deposits at the MNB.

• In 2011–2012, the majority of private pension fund members moved to the state pension system, and the private pension funds transferred to the Pension Reform and Debt Reduction Fund the securities portfolio of the switching members, which amounted to almost 10 per cent of GDP. This portfolio contributed significantly to the reduction of the debt ratio, resulting in a decrease of nearly 8 per cent of GDP. This exercised a debt-reducing effect via three channels (Table 1). At mid-2013, the Fund had additional securities and deposits worth around 2 per cent of GDP; this can be used for reducing gross debt in the future.

MAIN PHASES IN THE DEVELOPMENT OF PUBLIC DEBT

Looking at debt ratio over the years, it is clear that, rather than following a straight path, the debt ratio underwent periods of decrease and increase. Applying the same methodology as before, we divide the 1998–2012 period into phases based on the key trends of changes in public debt and look at the most important macroeconomic

Chart 3
Annual changes in public debt vs. GDP and the reasons for change



factors to establish the main drivers behind the changes in the debt ratio.

- 1. The years of prudent fiscal policy: 1998–2001.** The very high levels of debt in the middle of the 1990s was followed by a gradual decline in debt until 2001 as a result of accelerating economic growth and tighter fiscal policy, which improved the primary balance. As an overall result, gross public debt had fallen to 52.7 per cent of GDP by 2001, from 63 per cent in 1997.
- 2. The years of high public deficit: 2002–2007.** The debt ratio started to increase after 2001, with the substantial deterioration of the primary budget balance as the most important factor between 2002 and 2006, although the relatively high real interest payments also contributed. On the other hand, an average economic growth rate of 4 per cent (some of which, however, was the result of the fiscal impulse) and, to a lesser degree, appreciation of the real exchange rate reduced the growth in debt.

Table 1
The impact on public debt of the portfolio taken over from the private pension funds

(as a percentage of 2012 GDP)

1. Total assets transferred (2+3)	9.8
2. The amount of securities and deposits as of end 2012 (est.)	2.0
3. Amount used for debt reduction (4+5+6)	7.7
4. Direct withdrawal of government securities	4.9
5. Debt repayment and redemption	1.2
6. Payment to the budget in 2011	1.6

Note: Our calculations were based on the assumption that the takeover of the pension fund assets did not influence other decisions and issue processes regarding the budget. On the other hand, we also disregarded the impact of the higher revenues from contributions.

Although consolidation of public finances started in 2006, the year 2007 should nevertheless be included in this period, as the primary balance was negative and the emergence of the crisis in 2008 provides a more marked dividing line. At the end of 2007, public debt stood at 67.1 per cent of GDP.

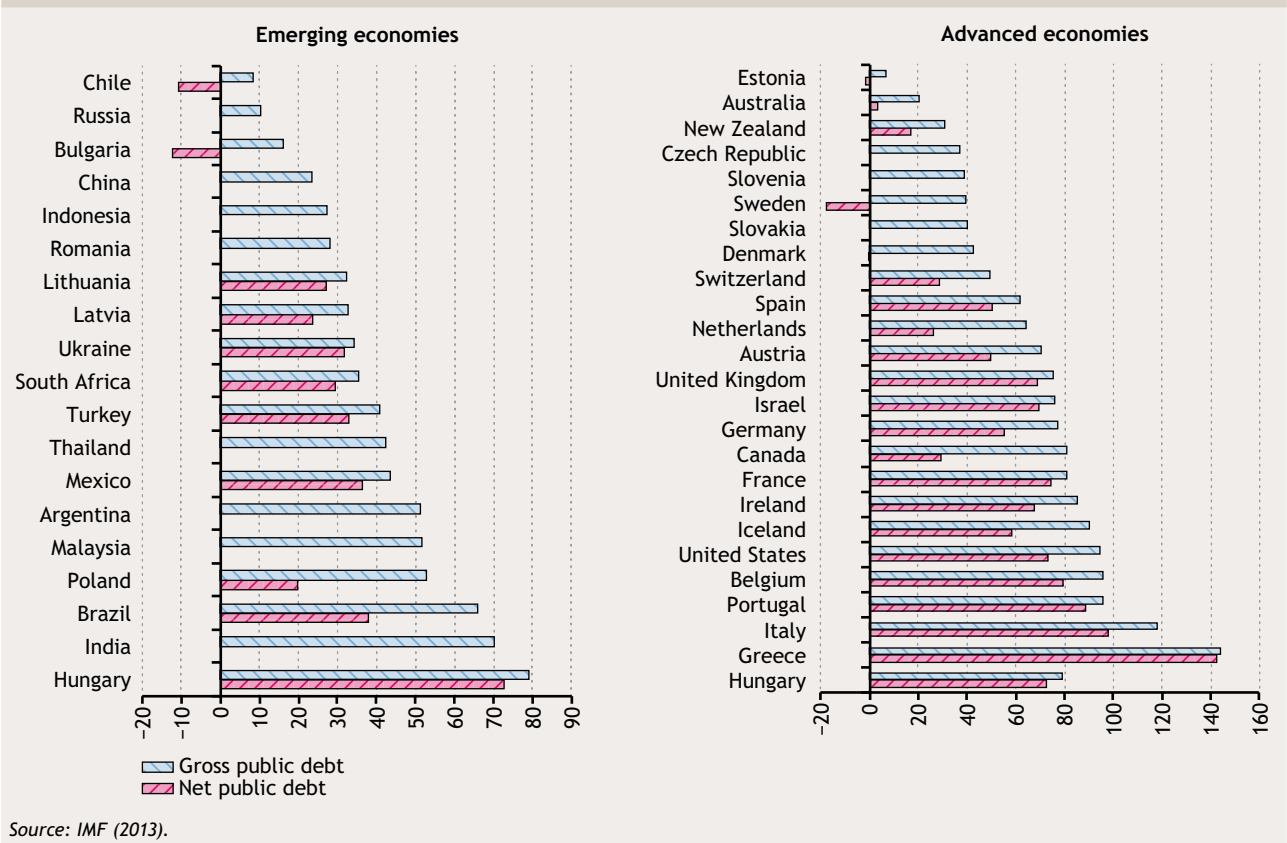
3. The first years of the crisis: 2008–2009. Even before the emergence of the crisis, it became clear that the high primary deficit was unsustainable even over the short term, and therefore major fiscal adjustments were implemented in several steps. As a result of the adjustments, the budget achieved a primary surplus as early as 2008. At the same time however, economic growth was replaced by stagnation and later, as a result of the financial crisis, by decline. In 2008, the debt ratio was boosted by the loan from the international organisations, which was mostly not used yet at the time, whereas in 2009 the recession had the same impact. In just two years, the debt ratio grew by 12.7 percentage points, of which these two factors caused 10.7 percentage points.

4. Stabilising debt: 2010–2012. In the past three years, public debt stabilised at around 80 per cent of GDP and even decreased in 2011–2012. The decrease was largely due to the withdrawal of the government securities transferred from the private pension funds to the state budget and the sale of further assets, which contributed nearly 8 percentage points to debt reduction. In the same period, changes of unprecedented magnitude in the HUF exchange rate caused major fluctuations in the debt ratio: in 2011, the year-end weakening of the HUF increased the total of foreign currency debts expressed in HUF, whereas the strengthening of the exchange rate reversed this effect in 2012.

HUNGARIAN PUBLIC DEBT IN AN INTERNATIONAL COMPARISON

Hungary's gross and net public debt as a percentage of GDP is extremely high in an international comparison. While a series of fiscal adjustments have resulted in favourable budget deficit indicators adjusted for the economic cycle in an international comparison, the 79 per cent gross and 73

Chart 4
Gross and net public debt as a percentage of GDP
(2008–2012 average, per cent)



Source: IMF (2013).

per cent net debt ratio averages of the years 2008–2012 are considerably higher than the relevant figures for other emerging economies (Chart 4).³

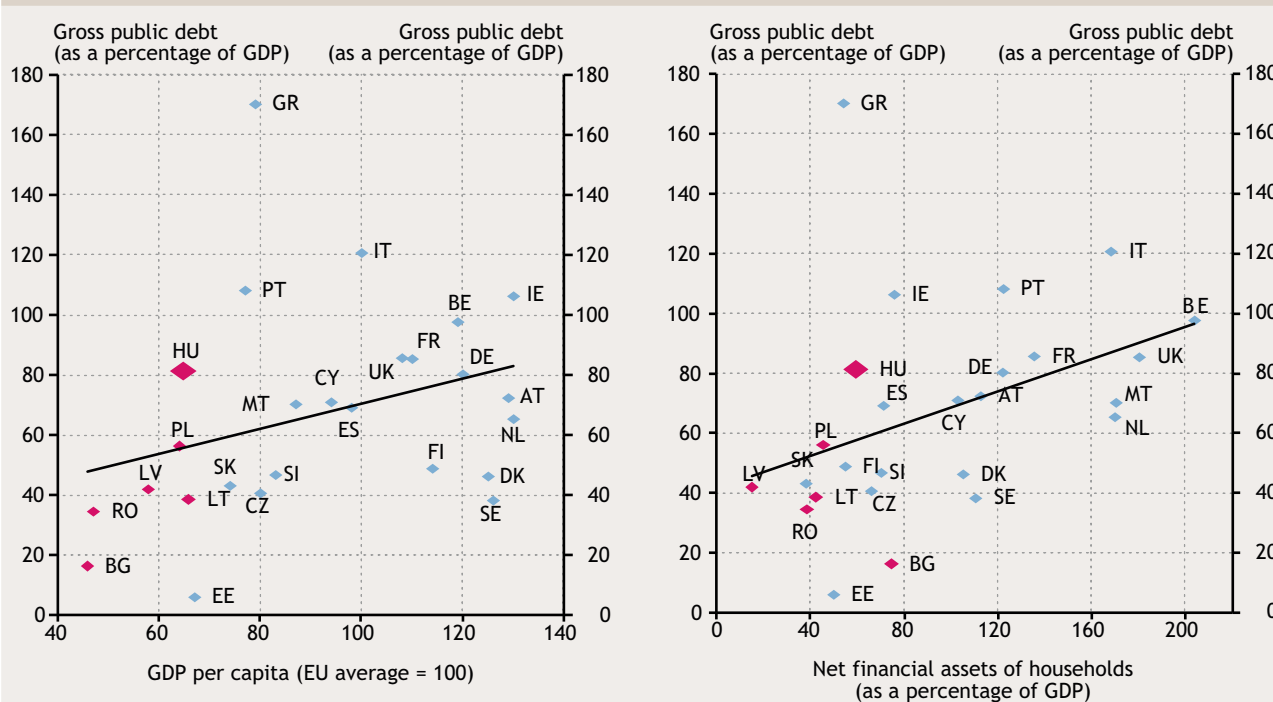
The gross and net indebtedness of the Hungarian government is not extreme compared to the advanced economies, but most of these countries – while they may have high indebtedness – still enjoy considerably lower financing costs. As a result, the net interest expenditure contributing to the budget deficits of advanced economies often remains below the level of the emerging economies, even in spite of their higher debt levels. One factor that may contribute to these lower financing costs is the fact that the higher level of development prompts investors to attribute lower sustainability risk to a given amount of debt. Greater revenue generation capacity of the government is a more secure safeguard for the future repayment of debt.⁴

Expressing the revenue generation capacity of the government with GDP per capita measured at purchasing power parity, we find that government indebtedness is very high in Hungary compared to the development level of the country (Chart 5). The debt ratio appropriate to Hungary’s development level would be 50-60 per cent based on 2011 data.

Public debt is high even in comparison with the net financial assets of Hungarian households (Chart 5). This ratio is important because in several advanced economies, such as Belgium, Japan and Italy, a high public debt-to-GDP ratio is financed by domestic savings. In Hungary, household savings were far from covering the budget deficit in a period of permanently lax fiscal policy, partly because households increased their indebtedness over the same period. As a result, growth in public debt was coupled with

Chart 5
Gross public debt in relation to level of development and financial assets of households

(2011, per cent)



Note: Red dots denote emerging countries, blue ones advanced economies. We followed the IMF (2012) categorisation in allocating countries to the emerging versus the advanced category.
Source: Eurostat.

³ This difference is even more apparent if we look at the net debt ratio after adjusting for the liquid financial assets of the public sector. In a number of emerging countries, the accumulated financing reserves – government FX deposits funding foreign exchange reserves, pension fund reserves and financial assets accumulated from oil and other commodity revenues – are coupled with considerable amounts of liquid assets to offset the gross debt.

⁴ Box 3.2 in MNB (2011) summarises the key findings in the literature regarding the optimum level of public debt and the diverging debt limits of advanced and emerging economies.

increased reliance on external financing and rising external debt. The high external and domestic indebtedness caused permanent increases in financing risks and therefore in the premium expected on investments in Hungary.

CONSEQUENCES OF HIGH PUBLIC DEBT

There are several channels through which high public debt has an impact on the economy, even if its effects are difficult to quantify. Besides the debt level, the structure of the debt and the economic outlook of the country are also relevant for identifying the impacts of the debt ratio. However, the sovereign debt crisis in Europe has increased the importance of public debt in assessing the risks of individual countries and imposed tighter limits on fiscal policy than before. Research on public debt has intensified as a result, but there continues to be no general consensus as to what level of debt is optimal and what is the threshold above which the negative effects of the debt ratio become tangible.

Reinhart and Rogoff (2010) conducted research on historical data and found that 90 per cent of GDP is the threshold where debt starts to have a substantial negative impact on growth. Although many strongly criticised their methodology and results [e.g. Irons and Bivens (2010) and Checherita and Rother (2010)] put the threshold at a similar level for the euro-area members, noting that certain negative impacts may occur already at around 70–80 per cent.

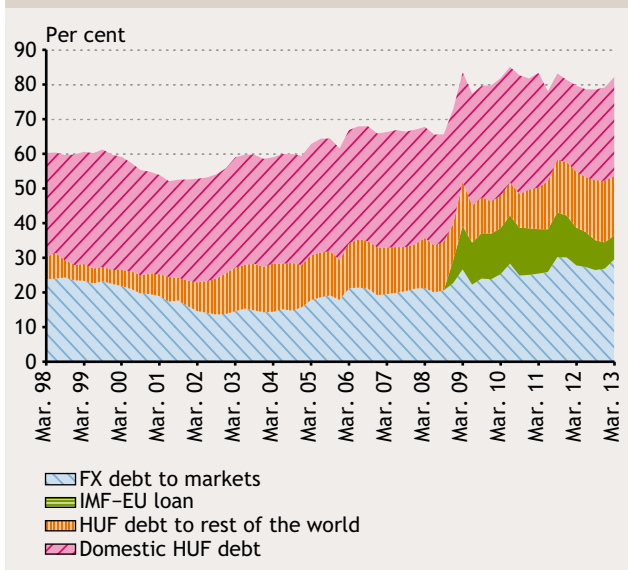
High debt clearly has a negative impact on the budget: the interest paid on the debt is financed from the budget and furthermore weakens the country's balance of payments to the extent that it is paid to non-residents. High interest payments considerably limit the room for manoeuvre available for fiscal policy and reduce the funds available for expenditures more conducive to economic growth (e.g. investment, education, health care).

Moreover, a high level of debt increases the country's level of risk for investors, which raises the yields expected from the government and the private sector alike. These high yields cause a contraction in investments in the private sector, which reduces the growth outlook of the economy. This crowding-out effect does not only work through yields alone: the high government deficit contributing to indebtedness absorbs a higher share of the savings within the national economy, which also causes either a decline in private capital investments or a rise in external debt.

The growth in Hungarian public debt was financed mostly by savings from abroad. Within public debt, the debt owed to domestic agents continued to fluctuate around 30 per

Chart 6
Distribution of public debt by owner

(as a percentage of GDP)



cent of GDP throughout, while foreign debt increased from 30 to 50 per cent of GDP, which is also reflected in the increase of net external debt. The ratio of public debt to foreign owners jumped when the EU/IMF loans were taken, while in 2011 there was an increase in foreign demand for the government securities.

The crisis intensified the negative effects of the high level of indebtedness. In an environment of risk avoidance, real yields increased and there were even more serious financing problems on the government securities market. In late 2008 and early 2009, the Hungarian debt management entity was unable to sell long-term Hungarian government securities. It was mostly due to the high outstanding debt and the unfavourable budgetary situation that Hungary turned to the international organisations for a stand-by credit facility in 2008.

As a result, the debt level increased and its currency composition changed significantly. From the previous level of around 30 per cent, the proportion of foreign exchange debt increased to above 40 per cent. This increased debt refinancing risks and also the uncertainty surrounding future changes in the debt, because depreciation of the forint was likely to increase the ratio of debt to GDP; as it did eventually occur.

The options available to Hungarian fiscal policy were highly constrained by the fact that public debt in Hungary was very high at the emergence of the crisis, compared to both the rest of the region and the level of the country's development. The doubts surrounding the sustainability of

the debt, the increasing risk avoidance of investors and their focus on fiscal policy forced Hungary to follow a procyclical fiscal policy of deficit reduction. Although this may have also had a positive impact on the country's long-term growth outlook and was necessary for the sustainability of the debt, it did not help to mitigate the economic decline over the short term. At the same time, countries with more favourable budget balances tried to offset the effects of the crisis with fiscal easing.

PUBLIC DEBT DYNAMICS IN THE PERIOD OF THE CRISIS – INTERNATIONAL COMPARISON

The recent economic crisis highlighted the issue of the indebtedness of countries. The almost unavoidable growth issues caused by the crisis were often aggravated by tensions concerning financial stability. There was an increase in the financing costs of countries with high public debt compared to their level of development, and their sensitivity to premium shocks also grew. Certain countries with moderate debt levels compared to their economic development now faced higher debt levels, due to the assistance provided to their banking systems. As a result, many countries showed markedly increasing debt ratios in spite of the increasing pressure to adjust.

In the following, we look at the main variables determining the debt dynamics (the primary balance of the public sector, economic growth and financing cost) to analyse the changes in the debt ratios of EU member states since 2008 (Chart 7). We compare the dynamics of Hungarian debt with three groups of countries within the EU: the core member states, the countries on the periphery of the euro area and the accession countries.⁵

Hungary was already struggling with a debt level that was high compared to its level of development and with growth problems when the crisis began. Yields increased, sources of funding dried up and the strict constraints on financing imposed the necessity to adjust immediately, despite the quick agreement with the EU/IMF on a credit facility. Thus, unlike in the EU core member states and most of the new accession countries, fiscal policy did not have the option of using anticyclical fiscal policy to mitigate the impacts of the crisis on the real economy. Despite a consistently low primary deficit, the debt ratio followed an upward trend, the underlying causes of which were a recession worse than the EU average, the increasing costs of financing the debt

and the appreciation of foreign exchange denominated debts due to weakening of the HUF exchange rate. At the same time, the increase in Hungary's debt ratio was limited in a Europe-wide comparison; however, this was partly due to the impact of the private pension fund portfolio in reducing the debt.

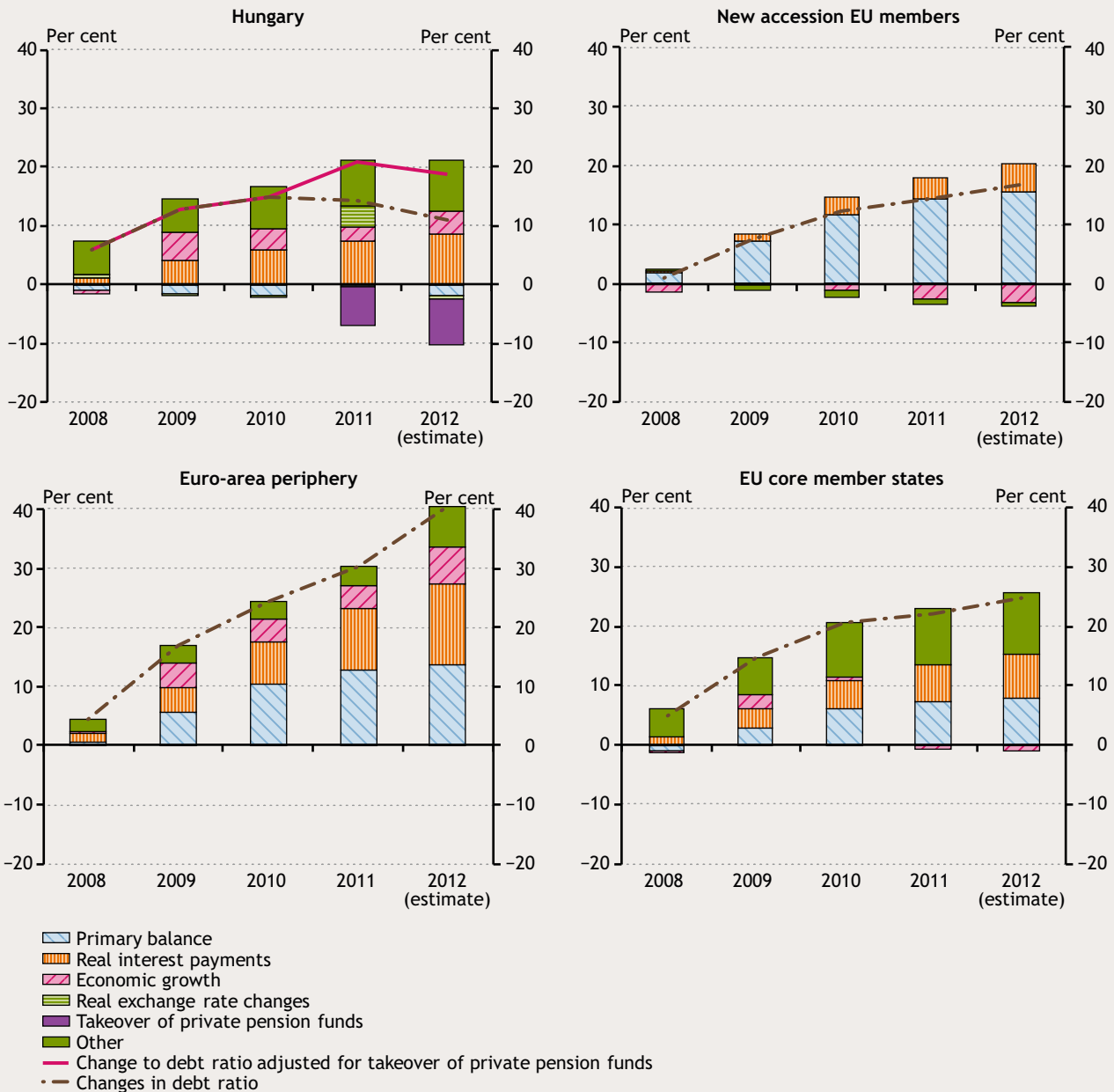
Hungary experienced a recession that boosted its cumulative debt ratio to an extent comparable to the countries of the euro-area periphery. However, the cumulative financing burden generated by the debt remained below the figures typical in the euro-area periphery, although it exceeded the figures in the EU core member states. This was attributable in the beginning of this period largely to the lower financing costs ensured by the EU/IMF credit facility agreement and the fact that in Hungary interest payments were determined by lower yields and lower debt than in the countries of the euro-area periphery.

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⁵ Within each group of countries, there is relative homogeneity in terms of debt dynamics, except for the new accession EU members, among which there is considerable heterogeneity in terms of the rise of the debt ratio and the reasons for the same.

Chart 7
Decomposition of the cumulative change in the gross public debt ratios of different EU countries, 2008–2012
 (per cent)



Note: (1) Included among the accession countries are the 12 member states which have joined the EU since 2004 (except for Croatia); the countries of the euro-area periphery are Greece, Ireland, Italy, Portugal and Spain, and the rest of the countries are treated as belonging to the EU core member states. (2) We used figures from the MNB for Hungary, which uses a cashflow-based approach, as opposed to the accrual-basis primary balances of the other countries. We did not adjust the Hungarian figures to the data of other countries, available on an accrual basis only, because cashflow balance is more consistent with the changes in debt. (3) The European Commission publishes decompositions to three components (primary balance impact, dynamic component and other) for each member state. We added Eurostat figures to these in order to create four-component decompositions for each group of countries. From the dynamic component, we separated the real economic impact; the residual value is not exactly equal to the impact of real interest payments, only an approximation. Instead of the implicit real interest on public debt, we were able to identify from the data available only the following expression:

$$\frac{i-\pi}{1+\pi}$$

where i is the nominal implicit interest and π is the GDP deflator. This is an accurate approximation of the implicit real interest rate, if (i) there are no substantive changes to the real exchange rates for the currencies in which the public debt is denominated and, if (ii) there is no substantive difference between the inflation and GDP deflator rates within the particular countries. This distortion due to estimation is low even in the case of the most heterogeneous group we have created.

Source: European Commission (2012a), Eurostat, MNB calculations.

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