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Balance Sheet Recession and Debt Financing

SUMMARY: This paper addresses some macroeconomic aspects of the debt crisis and debt financing. The paper concludes that, in a recession, it is not possible for all economic agents to deleverage at the same time. For that reason, in order to break out of balance sheet recession, developed countries hit by the crisis should retain low interest rates while adopting fiscal policies which, allowing for national differences, should be overall expansive. An economic policy focussing on general fiscal austerity and a strong reduction in public debt should only follow a strong upswing in activity. In our analysis of the fiscal multiplier, we explain that the value of the multiplier is far higher in a liquidity trap and in a global crisis than in a cyclical upturn and that, surprisingly, the multiplier increases in line with the average tax rate. With regard to debates on economic policy in Hungary, the paper is primarily concerned with debt financing, in particular, with a comparison of central bank financing and international borrowing. The analysis concludes that, if the international facility is used to refinance debt denominated in the national currency, then an IMF loan is not cheaper and is not of a smaller inflation risk than central bank financing, and essentially has nothing to offer that the central bank's quantitative easing could not achieve.

KEYWORDS: balance sheet recession, fiscal policy, multiplier effect, quantitative easing, IMF loan

JEL CODES: B22, E58, E62, H63

Economic activity in the European Union is not expected to return to 2007 levels in the fifth year after the outbreak of the crisis, while unemployment is close to a historical high. This is a brutal indication that not only the European Union, but crisis management itself is in crisis. It is increasingly clear that the 2010 turn in EU crisis management – which held that economic recovery was, at that point, best served by fiscal austerity, the aggressive reduction of public debt and hence, the restoration of investors' confidence – has failed spectacularly, and its continuation points to persisting stagnation and the harrowing vision of a lost decade.

Today, the opinion that the crisis is in fact balance sheet recession rooted in the excessive indebtedness of certain economic agents and in excessively high leverage, is increasingly strongly expressed in a significant, albeit still not predominant, portion of literature (e.g. Eggertsson – Krugman, 2010; Koo, 2011; Wolf, 2012). The outbreak of the global crisis was followed everywhere by a sharp fall in property and equity prices, the rate of which has exceeded 30 per cent in many countries over the past four years. As a result, the balance sheet of the private sector underwent a dramatic change: while the crisis did not affect the real and nominal values of debt with which the property bubble had been financed, the assets balancing those debts have suffered a dramatic fall both in nominal and real value. Consequently, the balance sheet showing the assets of the private sector against

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the liabilities used to finance those assets has changed significantly: the steep increase in indebtedness relative to assets (leverage) has set off long and painful years of balance sheet adjustment and deleveraging in the private sector.

To achieve a steady and long-lasting recovery in economic activity and to return to financial health and boost lending, excessively indebted economic agents need to cut their debts (deleverage) and restore the distorted financing structure of the private sector. However, at the macro level it is extremely difficult to identify the possible options for reducing debt and breaking out of the debt crisis, and events are interlinked in completely different ways from what is suggested by superficial connections.

This paper addresses some macroeconomic aspects of the debt crisis and is structured as follows. First it offers a brief discussion of a number of macroeconomic issues concerning indebtedness, with particular regard to the relationship between investments and savings. In this context, we focus on the question of whether it is possible in a recession for all economic agents to deleverage at the same time. As a temporarily loose fiscal policy and the resulting, relatively high government indebtedness are key preconditions for breaking out of the balance sheet recession, in this paper we provide a detailed overview of the role of the central bank's quantitative easing in financing public debt. Apart from quantitative easing, the role of loans from international financial organisations (IMF, ECB) in financing public debt is also examined. The relevant national specificities (a high level of foreign currency reserves, a changing debt structure and a ballooning portfolio of two-week bills issued by the central bank) are subject to intense debates in economic policy; therefore, it is important to analyse them both in theoretical and practical terms.

IN A RECESSION, CAN ALL ECONOMIC AGENTS DELEVERAGE AT THE SAME TIME?

To start with, it should be made clear in connection with the debt crisis that, at the global level or in a closed economy, *net debt amounts to zero*. In this regard, the key idea is that *the financial assets of one agent is always the debt of another*. This is obvious in the case of bonds and mortgage securities and, albeit implicitly, it is also self-evident in the case of money (including both cash at bank and in hand), money being credit money in terms of its creation. It is created in the form of credit and ceases to exist when credit is repaid. The amount of money on the bank accounts and in the wallets of economic agents corresponds precisely to someone else's debt. For that reason, when an economic agent deleverages its debt, this will be accompanied by an increase in another economic agent's indebtedness and/or a decrease in its financial assets.

The process of deleveraging and its consequences are best understood by taking account of the following macroeconomic relationships. On the one hand, the consolidated financial balance of individual sectors of the economy (as well as its changes) totals at zero because, as shown above, one agent's assets are the debt of another, i.e.

$$D_H + D_v + D_G + D_K = 0 \qquad (1)$$
and
$$\Delta D_H + \Delta D_v + \Delta D_G + \Delta D_K = 0 \qquad (2)$$

where: D marks the financial debt of individual sectors (household, corporate, government, non-resident), with negative values representing financial assets

In addition, according to basic macroeconomic relationships, the savings of economic agents equal the volume of investments generated in the economy, i.e.

$$I = S_H + S_v + (T - G - TR - iB) + (M - X - NFI) =$$
$$= S_H + S_v + S_G + S_K \qquad (3)$$

Where: S_H, S_v, S_G, S_K – respective savings of

the household, corporate, government and non-resident sectors, I – investment, T – tax revenues, G – government expenditures, TR – transfer, i – nominal interest rate, B – public debt, X and M – export and import, NFI – net foreign income.

These equations are macroeconomic identities that apply under any circumstances, irrespective of whether the economy is in recession or prospering.[2]

Derived from a micro-level approach, the trivial yet rather wide-spread idea of reducing indebtedness according to which the way to get out of the crisis is simply to deleverage the debt of recently indebted economic agents, poses at least two problems from a macroeconomic perspective.

On the one hand, according to equation (2), reducing the debt of indebted economic agents will *inevitably be accompanied by a reduction in the financial assets and/or borrowings of other economic agents*. On the other hand, where the deleveraging process is coupled with certain economic agents' increased willingness to save, according to equation (3), *as a rule, this will be accompanied by a decrease in the savings of other economic agents and/or an increase in investments.*

In a cyclical upturn, interest rate cuts offer a solution to both problems. Namely, a lower interest rate will ensure that the reduced debt of previously indebted agents is replaced by the debt of less indebted economic agents, while ensuring that the increase in savings resulting from deleveraging is absorbed by a growth in investments. *A low interest rate consequently plays a key role in overcoming the balance sheet recession,* allowing equations (2) and (3) to be satisfied as a result of economic agents' intentions rather than necessitated by the recession.

However, it is not certain that the interest rate cuts will be sufficient to ensure that the increase in the spending of unindebted economic agents

offset the decrease in the spending of those intending to deleverage. In other words, the economy will hit the boundary of zero interest rate, and once caught in a liquidity trap, the deleveraging process will turn into recession. If the emergence of the liquidity trap restricts the means of monetary policy to the management of balance sheet recession, then – based on equation (3) – fiscal policy and the changes in current account balance should be addressed.

In indebted countries, an improving current account balance will contribute to offsetting the demand lost as a result of deleveraging, while the cash inflow will help reduce the debt of the private sector, i.e. equations (2) and (3) are satisfied without a recession. However, it should be immediately considered that, given the fact that the excessive indebtedness of the private sector hits the entire developed world, the solution should also be global. Efforts exerted by developed countries in distress to improve their current account balances at the expense of one another are not a solution to the problem, as this would simply pass the problems on from one country to another. The debt crisis is a global issue, to which a solution should be sought at the global level. Moreover, over the past decade significant imbalances have developed in current account balances: while the balance of emerging Asian countries (China in particular) and petroleum exporting countries showed a significant surplus, a large number of indebted countries (USA, United Kingdom) have run up massive deficits. From the perspective of debt equalling financial assets, this may also be expressed as follows: in several developed countries, the financial assets accumulated as a result of the indebtedness of the private sector have been channelled in part to emerging countries through current account deficit. However, in order to ensure that changes in the current account balance facilitate a global solution to the debt crisis, a shift would be needed in foreign

trade relations: emerging countries should record deficits, while countries in the grip of a debt crisis should have a surplus in their current account balance. This needs time and involves considerable economic restructuring (in emerging countries, a deterioration in the current account balance should be accompanied by an increase in internal absorption in order to prevent the adjustment from leading to recession), which is not a quick process and certainly cannot happen overnight. By contrast, developed countries need a solution to the threat of recession right now rather than several years from now.
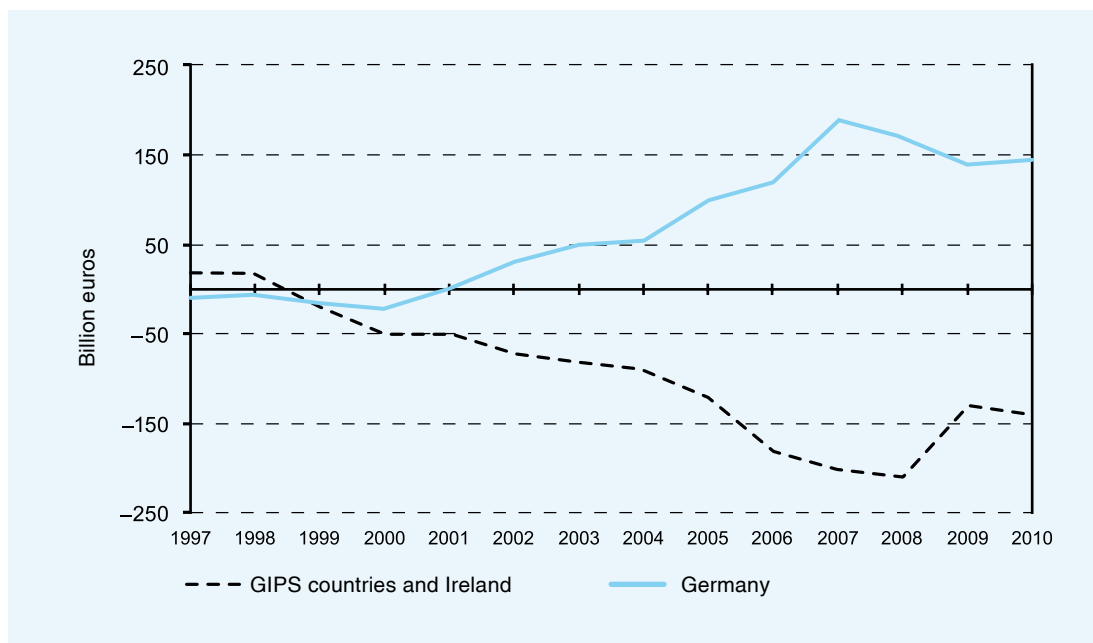
In terms of the current account balance, the euro area deserves particular attention despite the fact that the current account balance of the euro area as a whole was essentially stable throughout the decade preceding the crisis. Within the euro area, however, significant imbalances have developed: peripheral countries (Spain, Portugal, Greece and Italy) have run up

massive trade deficits, while the core countries (Germany, Austria, the Netherlands) have accumulated significant surpluses. This means that, in addition to the balance sheet recession, the euro area also has to face the structural problems that are reflected in their current account balances.[3] *(See Chart 1)*

With different currencies involved, the devaluation of the respective currencies would be a reasonable solution to restore the competitiveness of the peripheral countries concerned and to eliminate the external imbalances. However, owing to the use of the single currency, this path of changes in relative prices (real effective exchange rates) is obviously not viable. Therefore, a change in relative prices should be enforced by a prudent fiscal policy. This means fiscal expansion and consequently higher inflation in countries with previously accumulated surpluses, and a prudently restrictive fiscal policy and consequently lower inflation in

Chart 1

EXTERNAL IMBALANCE IN THE EUROPEAN UNION

Source: Eurostat

peripheral countries with deficits in their current account balances.

The overall conclusion is that fiscal policy plays a key role in overcoming the crisis. The only way out of the debt crisis without a severe shock appears to be to maintain a relatively high budget deficit and to stabilise public debt at a higher level than that previously accepted. The budget deficit allows the reduced debt of the private sector to be replaced temporarily by government borrowing $(\Delta D_H + \Delta D_V = -\Delta D_G = S_G)$, while a part of the intended savings is absorbed by the budget deficit in the absence of a sufficient investment volume in the context of a poor outlook for economic activity and the liquidity trap. In theory, the situation is expected to remain the same as long as the balance sheet adjustment and deleveraging efforts of the private sector continue and until the countries concerned experience a strong economic recovery.

However, given the sharp rise in public debt in the aftermath of the crisis, the vast majority of conventional economic wisdom points to the very opposite direction in the European Union. The marked turnaround of 2010 in crisis management, also demanded by the IMF, adopted the approach that recovery from the crisis was best served by general fiscal austerity and a curtailment of public debt. Known as an advocate of austerity, ECB president *Jean-Claude Trichet* said the following on the issue: *"As regards the economy, the idea that austerity measures could trigger stagnation is incorrect. (...) I firmly believe that in the current circumstances confidence-inspiring policies will foster and not hamper economic recovery, because confidence is the key factor today."* (Trichet, 2010)

There are additional concerns about public debt financing: the debt crisis cannot be remedied by continued indebtedness as debt has now become unsustainable, and governments will not be able to repay it. These concerns are formulated in the form of questions such as

who will finance the now enormous volume of private sector and government debt in developed countries, when savings are already scarce because of the recession.

Nearly three years after the turnaround, however, it is clear that the crisis management policy aimed at curtailing public debt and fiscal consolidation has failed spectacularly. Five years into the crisis, EU unemployment remains close to a historical high, while GDP in 2013 is still not expected to reach 2007 levels and economic forecasts point to a threat of continued stagnation. Added to all this is the recent recognition by the IMF that in reality, fiscal multipliers are significantly greater than what the Monetary Fund, a supporter of fiscal austerity, has envisaged so far when drawing up its recommendations for economic policy. That is, not only does excessive and hasty fiscal austerity hinder efforts to break out of the balance sheet recession, it also requires an immense sacrifice to achieve a target (reduced public debt) which could also be achieved with far less suffering and the support of macroeconomic rationality once the crisis is over and growth has picked up.

WHY ARE FISCAL MULTIPLIERS HIGH?

An analysis of the negative impact of the budget deficit and public debt on the level of economic development and growth is usually based on the assumption that deficit reduces savings at the level of the national economy, thus public debt will ultimately crowd out investments and private capital, as a result of which present and future generations will both achieve lower income than what would have been possible without public debt.

This approach to the public debt service burden, however, proves to be inadequate in times of crisis. In fact, a radical change is needed in direction. In a recession, in the

context of the liquidity trap, the situation is rather different. A smaller budget deficit and public debt will not generate a higher GDP figure and more investments, but higher unemployment and lower GDP.

The precise extent of that depends on the specific size of the multipliers associated with government expenditures, a subject intensely debated in literature. The multipliers estimated under the original Keynesian model are significantly higher (Romer – Bernstein, 2009) than those estimated on the basis of New-Keynesian DSGE (Dynamic Stochastic General Equilibrium) models, which also incorporate consumers' intertemporal optimisation and rational expectations. Indeed, the differences between estimated multipliers are at times of astonishing dimensions (Cogan – Cwik-Taylor – Volker, 2009). However, multiplier sizes vary greatly even within the same DSGE model depending on the underlying assumptions of the specific model: for example, the ratio of households to which the Barro–Ricardo equivalence theorem applies, the period over which a liquidity trap is sustained, or the amount of fiscal stimulus given to the economy by fiscal policy (Erceg – Lindé, 2011).

As a stroke of luck in the midst of the misfortunes caused by the economic crisis, the crisis has actually created the laboratory conditions in which the results of econometrics can, in connection with multipliers, distinguish the theoretical models which can facilitate an understanding of the tasks ahead and finding the ways out of the crisis from those that would undermine such efforts. This is because in 2010, in the spirit of the shift towards austerity in crisis management, the majority of EU Member States implemented fiscal adjustments that can be viewed as significant and permanent. This provides an excellent opportunity for an empirical study of the impact exerted by fiscal austerity on economic performance, and for an evaluation of the wide range of theories concerning multiplier sizes.

In econometric analyses, the milestone is last October's IMF report on the world economy [and Blanchard – Leigh (2013)], which arrived at the upsetting conclusion that the multipliers are significantly higher in reality than the 0.5 multiplier used in IMF forecasts, which was based on the estimates of the decades preceding the crisis. Depending on the country and on model specifications, real multipliers vary from 0.9 to 1.7, and the results remain robust despite the incorporation of additional control variables (CDS spreads, initial debt level, systemic bank crisis, etc.) This means that, in case of a crisis culminating in a liquidity trap, fiscal multipliers will put an enormous downward pressure on economic performance. This effect will be far more powerful than that envisaged by the IMF heretofore, or that forecast by a large number of theoretical models.

Why is the multiplier effect of fiscal adjustments greater in a liquidity trap and in a global crisis than in cases where such conditions do not exist? There are two basic reasons for this. On the one hand, when monetary policy has room to manoeuvre, i.e., the liquidity trap has not materialised yet, interest rate cuts may soften the impact of fiscal adjustments on reduced aggregate demand by stimulating demand for investments and consumption, which will result in significantly lower multiplier values – precisely the phenomenon reflected in econometric studies analysing pre-crisis years. On the other hand, fiscal adjustment may be accompanied by a devaluation of the national currency which, by encouraging exports and protecting domestic producers, may also reduce the value of the multiplier. However, when the crisis is global and the balance sheet recession hits the entire developed world, devaluation is no longer a

solution to a global lack of demand, as it will only pass the problems on from one country to another. Moreover, in the peripheral countries of the euro area where major adjustments have been implemented, owing to the use of the single currency it is not possible to pursue independent exchange rate policies; therefore, the multiplier effect of fiscal austerity can by no means be softened by the devaluation of the national currency.

Seidman (2011) made the following comment in this regard: *"What matters for fiscal stimulus to combat a recession is the size of the multiplier in a recession when unemployment is high and capacity utilisation low, not the size of the multiplier in a fully employed economy. Thus, it is a fundamental error to estimate the value of the multiplier in a fully employed economy and then assume this value holds when the economy is in a severe recession."* (Seidman, 2011, p. 14). This is precisely the fundamental error made by the IMF from the outbreak of the crisis up until autumn 2012.

In connection with the value of multipliers, it is essential to make two additional comments. One is that the value of the fiscal multiplier – which indicates the percentage change in output induced by a 1 per cent change in the ratio of deficit to GDP – is far greater than the value of multipliers associated with government expenditure or tax adjustments. An intuitive explanation is that when fiscal austerity aims to reduce a specific amount of deficit, expenditure cuts (or tax increases) will reduce aggregate demand, which in turn will reduce tax revenues, which will then call for further austerity, and so on. It is obvious from this that the deficit multiplier associated with aggregate demand has a completely different power than that of multipliers associated with government expenditure or tax adjustments.

Merely to illustrate magnitudes, let us start from the simple Keynesian multiplier which, in terms of government expenditure and

assuming a liquidity trap (or a constant interest rate), is as follows:

$$\kappa = \frac{dY/Y}{dG/Y} = \frac{1}{\tau + s_y(1-\tau) + m} \qquad \kappa'_\tau < 0 \qquad (4)$$

Taking into account that $dG - \tau\, dY = dDef = s_Y(1-\tau)Y + mdY$ and expressing the fiscal multiplier:

$$F = \frac{dY/Y}{dDef/Y} = \frac{1}{s_y(1-\tau) + m} \qquad F'_\tau > 0 \qquad (5)$$

Where: τ – average tax rate, s_Y – marginal propensity to save, m – propensity to import (dM/dY), Def – budget deficit

A comparison of equations (4) and (5) will clearly show that the fiscal multiplier is far grater than the simple expenditure multiplier, as the tax rate is not featured with a plus sign in the denominator. This can be explained by the fact that, in case of the expenditure multiplier, a part of the income generated through government expenditures will not only "leak" in the form of private savings and imports, but also in the form of taxes, and thus the spillover effect of demand will also be reduced by the latter. Obviously, the higher the tax rate, the greater the leakage of income in the form of taxes, and the lower the expenditure multiplier. Consequently, the partial derivative of the expenditure multiplier with respect to the tax rate will be negative.

In the case of the fiscal multiplier, however, the situation is different because for the purpose of leakage, only private savings and imports are taken into account, and taxes are not. What is really astonishing is that partial derivative of the fiscal multiplier with respect to the tax rate is, unlike that of the expenditure multiplier, positive. That is, the higher the tax rate, the greater the decline caused in economic performance by a one per cent reduction of the deficit relative to GDP. This is because fiscal adjustment will also result in lower tax revenues and therefore, the greater the average tax burden on the economy, the greater austerity is

required for a one percentage point reduction of the deficit/GDP ratio.

To illustrate the above, assuming that s=0.2, m=0.35 and τ-t=0.4 are parameters that approximate the reality of the Hungarian economy, we will receive an expenditure multiplier of 1.1 and a significantly higher fiscal multiplier of 2.1. Consequently, if the government cuts expenditure by one per cent relative to GDP, this will yield only a 1.1 per cent drop in GDP, whereas a one per cent reduction of the deficit to GDP ratio will cause a much steeper decline in economic performance, in our case, a deterioration of over 2.1 per cent.

As regards multipliers, we should finally bear in mind that the value of a multiplier is not only influenced by the cyclical situation of the economy; it also depends on whether the adjustments are implemented sporadically, in a few countries only, or in a whole group of countries, as has been the case in the EU since 2010. In the latter case, the drawbacks of individual countries' fiscal measures will mutually spill over to other countries, resulting in multipliers that are in fact higher than those calculated on the basis of equations (4) and (5).

In conclusion, the impact of deficit and public debt on the real economy is completely different in crisis than in an economic upturn. In crisis, deficit – depending on the size of the multiplier – will itself generate all or part of the savings required to finance the public debt that increases sharply as a result of the deficit. Naturally, the form in which investors wish to hold such savings is a different issue. Are they willing to finance deficit and public debt by purchasing bonds? If so, at what rates? If not, in what other forms do they wish to hold their savings? However, this concerns the financing aspect of deficit rather than the relationship between deficit and savings, which will be discussed below in the section addressing quantitative easing and debt financing. In

whatever form investors wish to hold their savings, the fact remains that in a deep recession, amid interest rates approximating zero, deficit will generate savings and tax revenues that would not have been generated without it at all. At the same time, this means that, a very strong distinction should be made between the impact of deficit on the real economy (on savings, GDP and employment) and the issues related to its financing. Not distinguishing between the financing issues of public debt and budget deficit and their impact on the real economy could seriously disturb both our understanding of the nature of the balance sheet recession, and the efforts to overcome it.

THEORETICAL PROBLEMS OF PUBLIC DEBT FINANCING

In relation to public debt and the financing of the budget deficit, a great number of economists focus on an important, but relatively simple question: where to get funding for the purchase of government securities. At the macroeconomic level, the issue of financing is rather complicated in reality, requiring the monitoring of complex relationships.

What is the reasonable action in a situation where, due to increased risk, investors are no longer willing to finance existing public debt or demand an intolerably high risk premium for its financing potentially causing financial instability while the balance sheet recession is still in progress?

One possible option is pursuing a policy that focuses on a drastic curtailment of budget deficit and public debt with a view to restoring the confidence of financial investors. In fact, this is the path taken by the European Union in 2010 in an effort to recover from the crisis. However, today we are certain that the path taken has lead to a dramatic deceleration

of the economies, a protracted recession, the stabilisation of high unemployment rates, and the indefinite postponement of recovery.

Another option is to bear in mind that the financial assets of one agent comprises the debt of another, and that investors obviously want to hold on to their accumulated financial assets, but they do not want the corresponding debt which, in this case, is public debt. Yet, the two go together and one cannot exist without the other. At the macro level, there is no such thing as investors wishing to retain their financial assets while striving to get rid of their debt.

When that happens, there needs to be an agent interpolated between investors and the debtor of excessive risk (the government), which will assume that risk. In most cases, that economic agent is the central bank, an international financial organisation or, as shown by the example of the EU, it could also be a stability fund created specifically in response to the crisis.

In the course of the crisis central banks, in the context of several rounds of quantitative easing, purchased money market instruments in several countries (USA, UK and Japan in 2001–2006), including government securities representing public debt. Although the goals of quantitative easing were extremely varied (reduction of risk premia in the USA, reduction of long-term yields in Japan) and consequently, so were the methods of their implementation (mainly the purchase of mortgage-backed securities by the FED and the purchase of government securities by the BoJ and the BoE), eventually such measures were always accompanied by the ballooning of central bank assets and liabilities (Blinder, 2010).

In view of the practice of and debates on Hungarian economic policy, of all the possible means of easing sovereign debt market tensions only two are addressed in this paper: financing

from international facilities (IMF, ECB) and quantitative easing. As regards the latter, we will focus strictly on the central bank's purchase of government securities, while disregarding the other reasons and consequences of quantitative easing. (On these issues see for example Benford – Berry – Nikolov – Yong, 2009; Blinder, 2010; Madár, 2012)

THE ROLE OF INTERNATIONAL BORROWING IN FINANCING PUBLIC DEBT

In order to ease tensions in the sovereign debt market, reduce risk premia and mitigate the problems of public debt financing, countries in distress may seek financial help from international organisations (IMF, EU). This is what happened in Hungary in 2008. In many cases, the mere conclusion of an agreement may be sufficient to restore market confidence and reduce risk premia, allowing for pure market-based financing. That is, the credit facility is perceived by investors as a kind of safety net or firewall, while it may well happen that not a single cent of it will be disbursed or end up in government securities.

However, if the international credit facility or a part of it is drawn, it will immediately add to gross public debt (i.e. public debt relevant in terms of the Maastricht debt criterion). This will obviously not affect net debt, since the increase in the government's liability to international organisations will equal the increase in its deposits with the central bank. This is illustrated by *Chart 2*.

In terms of the macro-financial consequences of utilising the international facility, a clear distinction should be made between the government's use of the facility to refinance public debt denominated in foreign currency, and its use to refinance debt in HUF.

In the first case, the situation is simple. Here government uses the international

loan to repay maturing debt in a foreign currency (e.g. foreign currency bonds), which means that the previous foreign financier is replaced by another foreign financier (IMF). The transaction will reduce both the central bank's foreign currency reserves and its foreign currency deposits, i.e. the central bank's balance sheet will revert to its original position preceding the international borrowing, while the foreign currency structure of public debt will remain the same.

In Hungary, however, this was not the case. The international loan was predominantly used to consolidate public debt denominated in HUF, resulting in debt restructuring as HUF debt (and the government securities portfolio representing it) decreased and foreign currency debt increased.

For the purpose of reviewing the correlations, let us first establish that, rather than issuing new government securities, the government uses the IMF loan to refinance maturing debt denominated in HUF. In order to raise the forint funds required for the transaction, the government uses the central bank to convert the newly obtained foreign currency loan into HUF. The conversion will rearrange the liabilities of the central bank's balance sheet shown in Chart 2, where the government's foreign currency deposit will be replaced by its HUF deposit.

When redeeming the maturing HUF-denominated government securities *(see Chart 3)*, the central bank will debit the government's account, now held in HUF, and at the same time, it will credit the amount to the commercial bank managing the account of the government security's owner. However, the transaction will create excess reserves in the banking sector, and in the current situation the banking sector as a whole is forced to keep these excess reserves in its portfolio: not only is it unable to get rid of the reserves, but it is also unable to use these funds for lending, as economic activity remains weak in the context of the recession. (It should be noted that the excess liquidity would remain in the banking sector even if lending picked up, except not exclusively in the form of excess reserves, but partly in the form of legal reserves).

Consequently, if the international loan is used to finance debt in the national currency – as was essentially the case in Hungary – , the excess reserves accumulated by commercial banks will be ultimately reflected in the portfolio of the two-week central bank bills that secure the base rate. (In Hungary, commercial banks hold a deposit account with the central bank to comply with their reserve requirements, and the central bank pays the central bank base rate on the funds held. By contrast, no interest is paid on reserves in

Chart 2

THE EFFECT ON INTERNATIONAL GOVERNMENT BORROWING ON THE BALANCE SHEET OF THE CENTRAL BANK

Central bank			
+100	Foreign currency reserves	Foreign currency deposit (Government)	+100

Source: own editing

excess of the minimum requirement, thus excess reserves are held mainly in two-week central bank bills rather than on the deposit account).

As demonstrated by the chart, using the international credit facility to refinance HUF-denominated debt will reduce the portfolio of government securities held by private sector agents, and the financial assets of the private sector will be represented by some kind of HUF deposit instead of government securities. Excess liquidity generated for commercial banks from the sale of government securities will add to excess reserves, which will be placed with the central bank in the form of two-week central bank bills.

Based on the above, a number of important conclusions can be drawn in respect of Hungarian debates on economic policy, some of them surprising.

▶First of all, using foreign resources to consolidate debt denominated in the national currency involves a restructuring of public debt, wherein the ratio of foreign currency will increase and that of the national currency will decrease. This is precisely what happened in Hungary after the disbursement of the 2008 international rescue package: the foreign currency ratio in public debt rose from the previous 30 per cent to nearly 50 per cent by mid-2011, but has since been reduced significantly owing to the continuous repayment of the international credit facility (see Chart 4).

▶A weak lending activity is not the cause but the effect of weak economic activity, and is a natural feature of recession. In fact, Keynes' famous aphorism applies: *You can lead a horse to water, but you can't make him drink.* In other words, despite a low interest rate and the availability of commercial bank funds for lending, given the subdued loan demand in the context of the deep recession, the excess liquidity of the banking sector cannot enter the circulation of the economy and returns to the central bank in the form of excess reserves. That is, the heart of the problem is not the lack of willingness to lend (an opinion frequently voiced in Hungary), but the lack of demand for loans, a result of the recession.

▶As Chart 3 indicates, following the utilisation of the international credit facility the central bank's balance sheet is subject to rearrangement, which has a significant impact on the profits of the central bank, and thus the position of the budget. The National Bank of Hungary (MNB) pays the central bank base rate on two-week bills, which is currently far higher than the interest rate on foreign currency reserves, although the difference between the two has become significantly smaller as a result of the cycle of interest rate
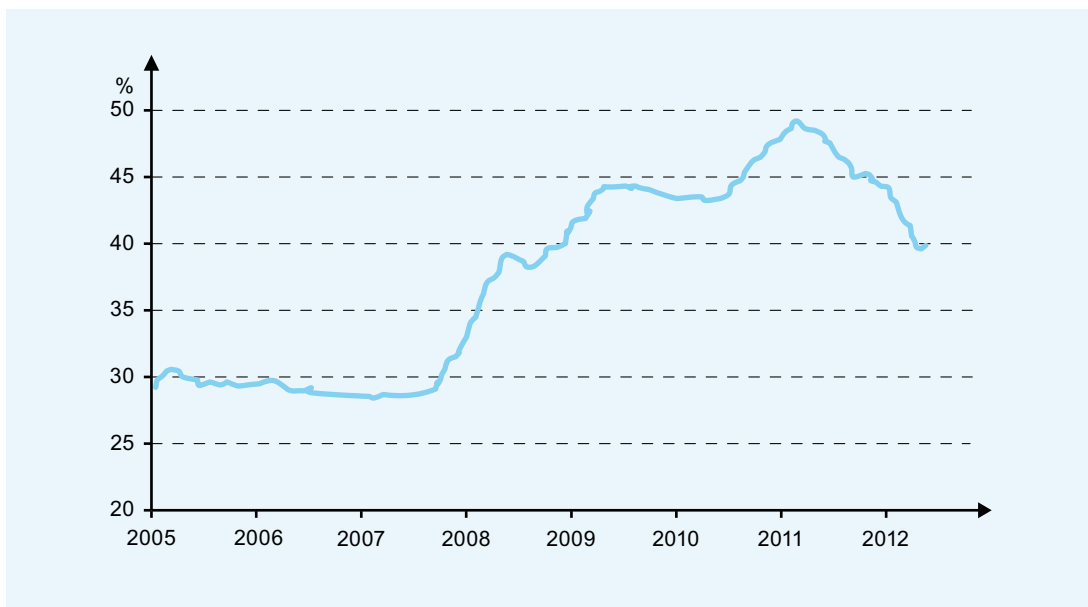
Chart 3

USE OF THE IMF LOAN TO REFINANCE HUF-DENOMINATED PUBLIC DEBT

Central bank		Commercial banks	
Foreign currency reserves +100	Central bank bills +100	Government securities −100	Securities account −100
		Central bank bills +100	*Deposits* +100

Source: own editing

Chart 4

FOREIGN CURRENCY RATIO IN HUNGARIAN PUBLIC DEBT

Source: Government Debt Management Agency

cuts launched last year. This, however, hurts the profits of the central bank, and as the losses of the central bank have to be covered by the budget, they are ultimately charged to the budget.

The lesson learned from the above is that the impact of debt structure changes on the actual interest burden on the budget can only be determined by taking into account the changes in the central bank's profits, i.e. by means of consolidating the budget with the central bank. Namely:

Actual interest burden on the budget = Fiscal interest expenditures – Impact on central bank profits

(Impact on central bank profits = Interest revenues from assets – interest expenditures on liabilities)

In consideration of this and Chart 3:

Actual interest burden on the budget =
Foreign currency interest – (Foreign currency interest – Interest on central bank bills) = Interest on central bank bills

Thus we have to reckon with the surprising result that, where the international credit facility is used to refinance HUF-denominated public debt, the actual interest burden on the central budget equals the interest paid on the central bank bills, that is, the central bank base rate. Consequently, a shift in debt structure towards foreign currency debt at lower interest rates, despite all appearances, *is not as inexpensive as it seems, and debt consolidated using the IMF loan is actually financed at the central rate rather than the lower rate of the IMF loan.*

(In view of the falling profits of the central bank, it is frequently proposed that the deposit of excess reserves in two-week central bank bills should be limited, and that the interest rate on the bill should be reduced. However, that would be a severe professional error, and detaching the interest rate on the central bank bill from the key policy rate would translate into increasing the tax burden on the financial intermediary system, which is not desirable for several reasons).

▶Paradoxically, the fact that foreign currency reserves ballooned to extraordinary proportions on the central bank's balance sheet after the disbursement of the international facility, does not mean that the facility has not been utilised. When the government uses the HUF equivalent of the IMF's foreign currency loan to repay HUF-denominated public debt, the international credit facility will be utilised but the foreign currency disbursed by the IMF will still be carried on the asset side on the central bank's balance sheet. *This demonstrates that the foreign currency loan of the IMF, when used to refinance public debt denominated in the national currency, cannot offer anything more to debt financing than what could be achieved by the central bank without the loan.*

All this is best understood by reviewing the consequences of the central bank's bond purchases in financing public debt, and by comparing the result with the use of the IMF loan for financing.

THE ROLE OF QUANTITATIVE EASING IN FINANCING PUBLIC DEBT

As part of quantitative easing, the central bank purchases government securities which investors are not prepared to keep in their portfolios because of the changes in risks or for any other reason. In turn, previous investors will hold their financial assets in money instead of government securities, in commercial bank instruments (deposits) which are considered to be relatively safe. Obviously, the central bank will credit the consideration paid for the government securities to the account of the seller's bank maintained by the central bank, and this excess liquidity, as seen above, will generate excess reserves in the banking sector, to be deposited with the central bank in the form of two-week central bank bills. As a result, in the central bank's balance sheet the government securities portfolio thus purchased is ultimately offset by two-week MNB bills.

The effect of quantitative easing on the balance sheet of the central bank and those of commercial banks is summarised in *Chart 5*.

In consideration of the fact that the central bank will pay its profit from interest revenues into the central budget, the question arises: does the central bank's purchase of a portion of government securities mean that that particular portion of the public debt can practically be financed without any interest cost? No, it certainly does not. This should not only be given thorough consideration, but should also be compared to the cost of using the IMF loan to finance public debt.

Chart 5

THE EFFECT OF QUANTITATIVE EASING ON THE BALANCE SHEETS OF THE CENTRAL BANK AND COMMERCIAL BANKS

Central		Commercial bank	
Government securities +100	Central bank bills +100	Government securities −100	Securities account −100
		Central bank bills +100	*Deposits* +100

Source: own editing

As explained previously:

Actual interest burden on the budget = Fiscal interest expenditures – Impact on central bank profits

Using the IMF loan to finance debt, as seen above:

Actual interest burden on the budget = Foreign currency interest – (Foreign currency interest – Interest on central bank bills) = Interest on central bank bills

Central bank financing based on Chart 5:

Actual interest burden on the budget = Interest on government securities – (Interest on government securities – Interest on central bank bonds) = Interest on central bank bills

Therefore, we must reckon with the surprising result that the actual interest burden on the central budget is the same with both methods of financing, namely the interest paid on central bank bills, that is, the central bank base rate. Therefore, a shift in debt structure towards foreign currency debt at lower interest rates, despite all appearances, is not cheaper than central bank financing, but *costs exactly the same*.

With both financing methods, the real savings for the budget are in fact stemming from the elimination of risk premia. Since in both cases, the actual interest burden on the budget equals the interest paid on the central bank bills – which corresponds to a risk-free interest rate because the default risk of the MNB is negligible – , the risk premium, which is paid mainly on securities of longer maturities, can be eliminated.

In order to draw further conclusions, it is essential to compare Chart 5, showing the results of central bank financing, and Chart 3, reflecting the consequences of using the IMF loan to finance debt. *This is because the only apparent difference between them is the fact that, in the latter case, the asset side of the central bank's balance sheet carries foreign currency reserves rather than government securities;*

moreover, using an international loan to finance debt is not called central bank financing despite the very similar outcome.

Indeed, the real difference lies in the intellectual approach to the two financing methods which, in many cases, is explained by the lack of clarity and understanding of the correlations involved. There is an inherent aversion to central bank financing carried out in the context of quantitative easing because of the well-known professional correlation that such financing involves an increase in the liquidity of the banking sector (and in excess reserves) and, for that reason, it is often referred to as monetary financing, which may carry inflationary risks. What is of key importance for our purposes is this: using an international loan to finance public debt – to the extent it is to refinance debt denominated in the national currency, as was the case in Hungary – will boost the liquidity of the banking sector (and excess reserves), and the end result is in no way different from central bank financing.

Charts 6 and *7* show changes in the excess reserves of the banking sector of Hungary where no quantitative easing is applied, and in the United States where substantial quantitative easing has been implemented.

Why is there an aversion to central bank financing and why not to the use of international loans for financing despite the fact that both generate excess liquidity in the banking sector? One possible explanation is that with international borrowing, there is less clarity in macroeconomic finances and the interrelationships are more complex even for those professionally engaged in macroeconomics, let alone the financial investors financing public debt. This can and should be improved through better understanding, expert dialogue, and communication that investors can understand.
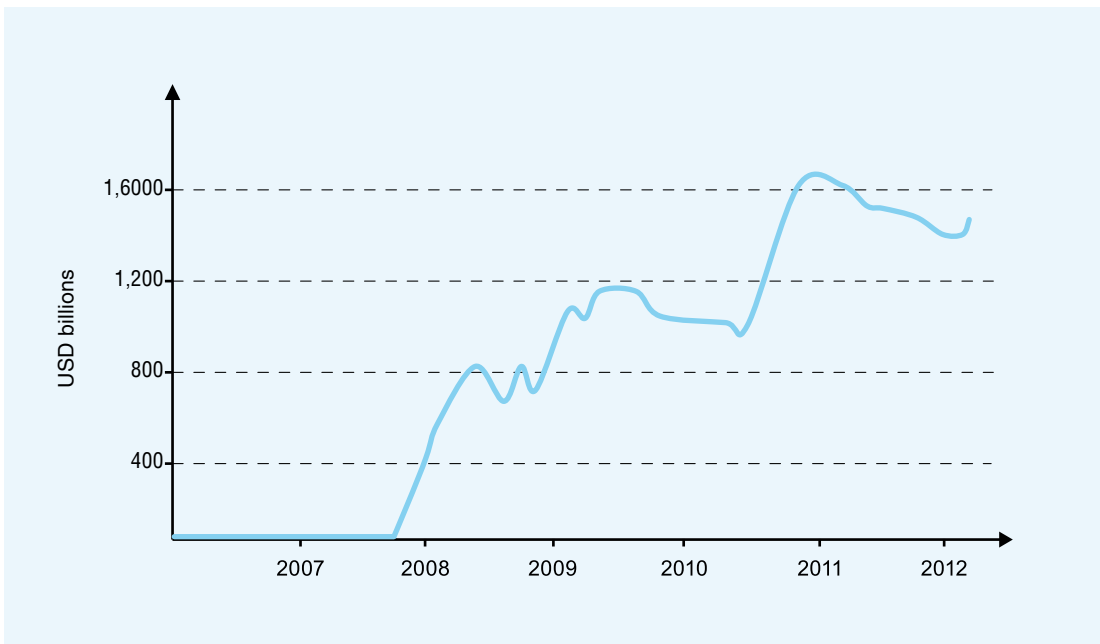
This, however, is only one part of the

Chart 6

EXCESS RESERVES OF THE HUNGARIAN BANKING SECTOR IN THE TWO-WEEK CENTRAL BANK BILLS
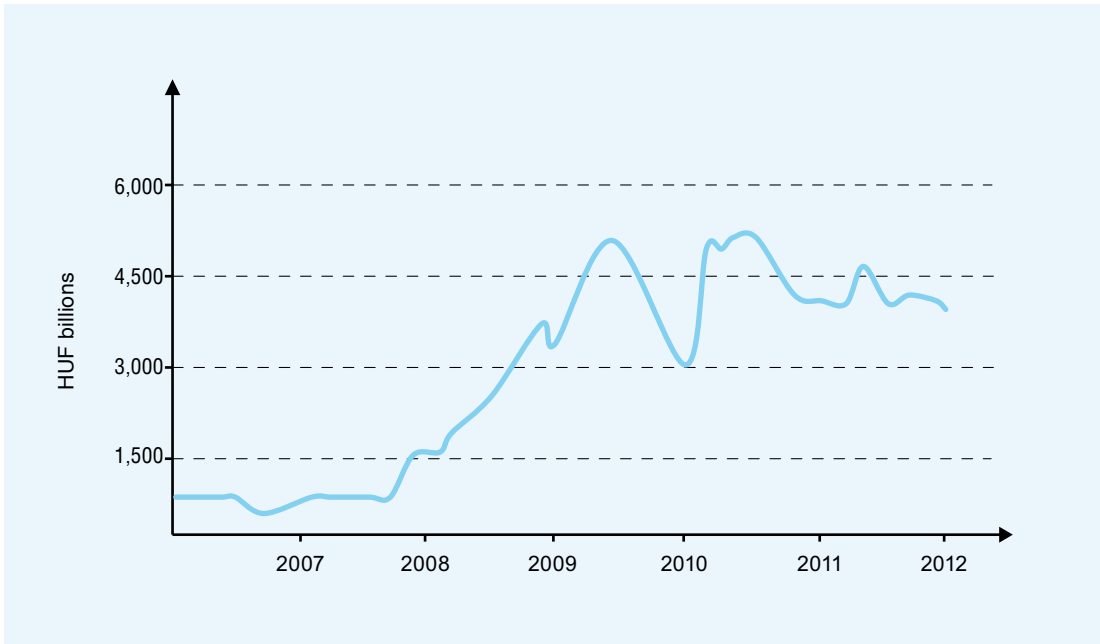
Source: MNB

Chart 7

EXCESS RESERVES OF THE US BANKING SECTOR

Source: Board of Governors of the Federal Reserve System

problems. The other part is related to the false theory that the increased liquidity stemming from quantitative easing could cause inflation to accelerate even in the face of recession.

The prominent monetary economist *Allan Meltzer* (2009) had to say the following on the issue: *"... the interest rate the Fed controls is nearly zero; and the enormous increase in bank reserves – caused by the Fed's purchases of bonds and mortgages – will surely bring on severe inflation if allowed to remain."*

However, in 2013 even Allan Meltzer must know that he was wrong in 2009. As a result of quantitative easing, the amount of money generated by the central banks has multiplied since the outbreak of the crisis in several countries, yet not only inflation did not accelerate, it in fact slowed down as a result of the prolonged recession, precisely as predicted by theoretical considerations and the logic of the Phillips curve.

Companies do not raise prices because of the increase in the excess reserves of the banking sector, but because of an increased demand for their products, that is, the unfolding of an economic upswing. Similarly, employees' wage demands do not intensify and drive inflation because there is excess liquidity in the banking sector, but because of the cyclical improvement and the resultant lower unemployment rates, which give employees more negotiating power to demand higher wages.

Therefore, in severe recession, the harrowing vision of accelerating inflation, despite substantial debt financing by the central bank, is not a reality but a phantom.

FINAL NOTES

Both monetary policy and fiscal policy are key to breaking out of the balance sheet recession and to boosting economic growth. A low interest rate, as seen today across the world, is an important precondition for recovery: it enables the borrowing and spending of previously less indebted economic agents to replace agents who accumulated excessive debts in the past and intend to reduce their debts and increase their savings in the present. At the same time, this makes it possible that the recovery of the private sector's "financial health" is driven by economic agents' intentions and achieved with the least amount of sacrifice and pain instead of being forced by a prolonged recession.

This is why last year's turnaround in Hungarian interest rate policy is welcome: it mobilised interest policy in the fight against the real enemy – weak economic activity and the balance sheet recession – rather than inflation. This is obviously underpinned by the recognition that in a deep recession, from the perspective of inflation, the crisis will accomplish everything that a high interest rate could, assuming its role as it were. Interest rate policy may, and indeed should be put to use for other purposes, as is being done by nearly the entire developed world today.

As regards Hungarian debates on economic policy, it should be noted that for the monetary policy, the central bank's purchases of government securities in the context of quantitative easing are an opportunity and not an obligation that central banks should apply at all cost. It is an opportunity for the central bank to ease the tensions in the government securities market, and thereby ensure that the direction of fiscal policy is not determined by investors' risk appetite or expectations of the economic policy. For in the current situation, investors' economic rationality does not coincide with macroeconomic rationality that is mindful of the well-being of society as a whole. As Wolf (2012) put it: *"The big point is this: the ability to use the balance sheet of the central bank freely, when banks are not lending, gives the government the freedom to borrow ultra-cheaply. One benefit is that it can slow the*

reduction in the fiscal deficit until the economy recovers…"

This is also important because in a liquidity trap, the key to recovery from the crisis is held by fiscal policy. A temporarily active fiscal policy which, *horribile dictu*, is expansive – albeit to different degrees across the European Union –, could help rev up the engines of the economy until the private sector takes control at the helm once again. An economic policy giving priority to general fiscal austerity and the curtailment of public debt should follow only later.

In 2010, however, disregarding the key messages of Keynes' general theory and the historical lessons learned from the Great Depression of 1929–1933, economic policy-makers in the EU and representatives of international financial organisations thought that the order should be the opposite. Fiscal austerity, cutting public debt and regaining financial investors' confidence come first, and recovery and increased employment rates should follow automatically.

However, in the fifth year following the outbreak of the crisis, it is clear that this policy fails on nearly every front: unemployment rates remain close to a historical high, not even the remote signs of economic recovery are in sight, the multipliers of fiscal adjustments put an enormous downright pressure on the economy, and a breakthrough in the reduction of the debt to GDP ratio is yet to materialise, to put it mildly.

Sadly, many have failed to learn anything from this. In response to a journalist's question about the enormous error in estimating the fiscal multiplier, for example, IMF managing director *Christine Lagarde* (2013) said: *"… fiscal consolidation has to happen… Clearly the multiplier is higher than we thought. But a fiscal consolidation process is not dictated by a fiscal multiplier. It has to take place"*. One of the masterminds of efficient market theory, *Eugen Fama* (2012, p. 19) offers the following suggestion in respect of the tasks of fiscal policy: *"Simple. Balance the budget."*

I think that today recovery is mostly hindered by political and intellectual factors. The lessons of crisis management and the failures accompanying it made one expect economics to go through the purgatory that will distinguish economic theories promoting a better understanding of the situation at hand and the discovery of the ways out of it, from theories that would hamper such efforts. Looking at the direction of economic thought, the purgatory is apparently present, but the change is slow. Much slower than justified by the suffering caused by the crisis.

Notes

[1] Naturally, shares do not belong in this category, as they represent ownership and are not debt securities.

[2] In respect of equations (2) and (3), it should be noted that the savings position of the budget equals the change in financial assets, and the same relationship exists between households, the current account balance and the financial assets of non-residents, i.e. $S_H=-\Delta D_H$ $S_G=-\Delta D_G$ and $S_K=-\Delta D_K$. Also, in view of the fact that the change in the corporate sector's financial position equals the surplus of retained earnings (i.e. those not paid out in the form of dividend) over investments $(S_K-I=-\Delta D_V)$, it is apparent that equations (2) and (3) are equal.

[3] A discussion of the structural problems that have emerged is beyond the scope of this paper; however, see Jorge – Jesús – Eladió, 2011 for an excellent analysis on the subject.

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