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The purpose of this journal is to present an authentic picture of the domestic financial system in Hungary, to show the major features of operating the public sector and the national economy – as reflected by the principal financial interactions –, the efforts aimed at convergence and at building a future, as well as presenting the related professional debates.

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Lack of transparency hindering foresight in the planning and execution of the budget¹

The global financial crisis hit the real economy and hence, public finances of most countries in the world so hard that even national audit offices, which are responsible for the regular and effective spending of public funds, had to ask themselves how they could assist in preventing the outbreak or at least the deepening of economic crises and in mitigating their the negative effects. The quick response of the International Organization of Supreme Audit Institutions (INTOSAI) reflects this sense of responsibility: as early as its first meeting in November 2008, the Governing Board set up a working group to examine the challenges posed by the global financial crisis for state audit offices. Of the partial report that has been recently discussed in London, I would like to highlight one thought only: national audit offices are a part of the respective immune systems of individual countries. Accordingly, by being independent and vested with adequate powers, as well as by exercising such powers, the state audit office can contribute significantly to safeguarding the soundness of the economy, financial system and public finances of a country.

In my opinion, a state audit office fulfils its role of being a part of the immune system primarily by drawing attention to disorder and demanding order; in other words, demanding the transparency of public finances and the regular

and effective use of public funds. Order, in turn, creates value. Why? Because order improves the chance for clear-sightedness. Clear-sightedness is precisely what would have been needed most in a crisis situation.

THE IMPACT OF THE GLOBAL FINANCIAL CRISIS ON THE HUNGARIAN ECONOMY

Were the global financial crisis and its impact on the Hungarian economy and public finances foreseeable? Its exact magnitude certainly was not. However, by as early as September 2008 it became obvious that the collapse of the US mortgage market would snowball into a global crisis with a devastating effect on the Hungarian economy as well. Nevertheless, even after several amendments, the budget for 2009 was built on unrealistic assumptions, which delayed the flexible adjustment of the Hungarian economy to global economic developments. Foresight was hampered, in part, by a lack of clear-sightedness, namely, a lack of transparency in the general government's reporting system; a situation to which the State Audit Office of Hungary (SAO) had repeatedly objected for years. In the opinion issued by the State Audit Office on the final accounts for 2009 we had to conclude once again that the

multi-volume document of the final accounts bill failed to ensure transparency and comparability between years.

In all probability, the former government itself was unable to find its way around the inscrutable system the general government had become. Indeed, the only way it could adjust the figures of the draft budget submitted in the place of the withdrawn bill (that had assumed a three per cent GDP increase) to the macroeconomic projection (that assumed stagnation) was through an MP amendment package. The SAO found severe risks in the draft budget as well, even though it only had a few days to review the documents. I would like to emphasise only two of the risk factors explored. The SAO opinion pointed out that the government's forecast of a 0.6 per cent layoff rate carried a risk, as the financial crisis may affect the real economy more seriously than expected, potentially resulting in a 2.5–3 per cent decline in employment, which may have an impact on both the wage bill and the budget deficit.

“As regards the developments in wages and household consumption, the fact that the macroeconomic forecast did not adequately take into account the expected loss of that portion of consumption that had been financed by loans in the last two years, implies a risk factor” – states the opinion issued by SAO. *“A greater fall in employment, shrinking borrowing opportunities*

and the tightening of lending conditions may lead to a further decline in demand, hence a greater fall in consumption and GDP”.

The alarm bells rung by SAO were justified: the decline in employment and the fall in budget revenues significantly exceeded the government's optimistic forecasts (see Table 1).

By the fourth quarter of 2008 the unemployment rate in Hungary increased to 8 per cent from 7.7 per cent observed in the third quarter of 2008, and it reached 10.5 per cent by the fourth quarter of 2009. In absolute terms, by the end of 2009 the number of the unemployed increased by 115 thousand compared to the third quarter of 2008.²

DISORDER AND ITS CONSEQUENCES

However, the disorder started years earlier than 2009. It is worth looking at the economic growth and budget balance data of the five countries that joined the European Union in 2004; Hungary has been the straggler every year since 2005 in both charts (see Charts 1 and 2).

Following their accession to the EU, all of the other countries took compliance with the Maastricht criteria seriously. In this context, the nearly 10 per cent Hungarian budget deficit in 2006 appears strikingly negative (even the second highest deficit is below 4 per cent). The

Table 1

CHANGES IN GDP AND ITS COMPONENTS IN 2009 AS A PERCENTAGE OF THE PREVIOUS YEAR

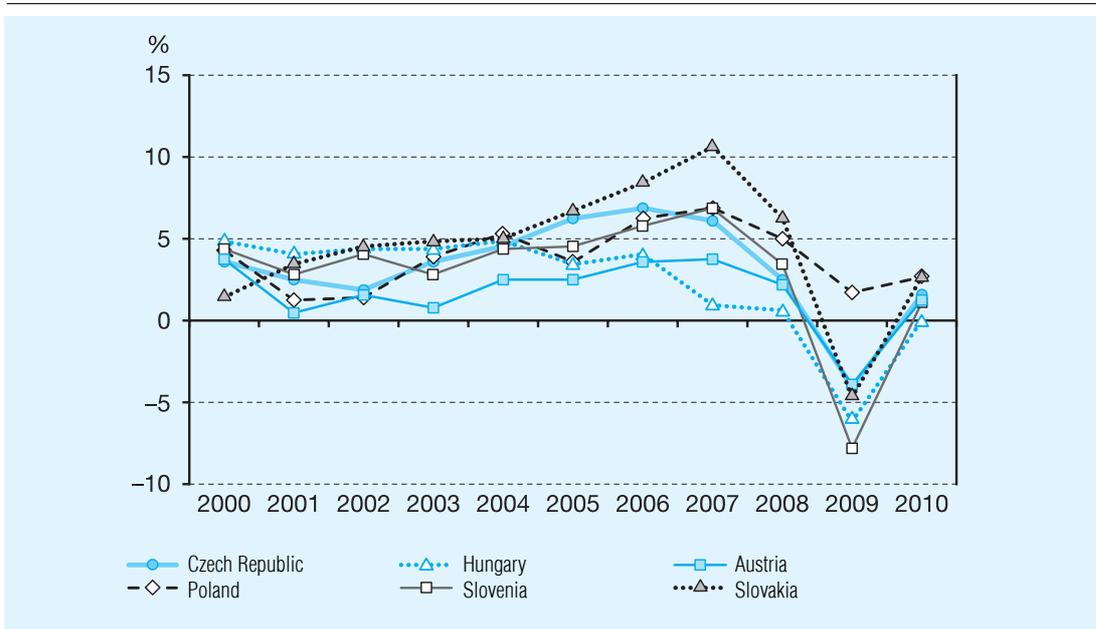
(government projection for 2009 and the actual figures)

	Government projection for 2009	Actual figures for 2009
GDP (at previous year's prices)	-1.0	-6.3
Household consumption expenditures	-3.8	-7.6
Public consumption	0.2	1.0
Gross fixed capital formation	-0.9	-6.5
Exports of products and services	3.9	-10.1
Imports of products and services	2.4	-16.1

Source: CSO, in relation to the forecast attached to the budget appropriation bill for 2009 and to the actual figures.

Chart 1

GDP GROWTH RATE
(previous year = 100%)



Source: EUROSTAT

Chart 2

BUDGET DEFICIT
(as a percentage of GDP)



Source: EUROSTAT

subsequent, inevitable austerity budget yielded an economic growth that hardly exceeded one per cent. At a time when the other four countries achieved dynamic economic growth, the Hungarian economy stagnated. In its opinion on the budget appropriation bill for 2006 the SAO voiced concerns that revenues in the draft budget were exaggerated, while expenditures were underplanned. However, in the lack of a system of budgetary rules, there was no order to force the government to present fair figures. As a result of this nosedive, Hungary had hit the bottom even before the crisis struck and was dragged down deeper for having accumulated debt instead of reserves in a period of global economic growth. There were no budget resources to mitigate the consequences of the crisis Hungary faced. Moreover, in an attempt to prevent the fiscal position of the country from completely falling apart, the government was forced to cut budgetary expenditures, which deepened the crisis even further. Of these items I would like to highlight the following two.

First, despite the dramatic increase in unemployment there were no additional resources to finance the expansion of programmes promoting employment. Quite the contrary: as the government had underestimated the detrimental

developments in unemployment, appropriations for the financing of active employment tools and employment rehabilitation programmes had to be reduced during the year, given that the amount of passive allowances job-seekers are entitled to receive significantly exceeded the underplanned appropriations as a result of high unemployment (*see Table 2*).³

Housing subsidy is another important area where the adoption of fund-reducing measures instead of expedient incentive steps deepened the crisis. The relevant investigation carried out by the SAO in 2008 revealed that home-building between 2005 and 2008 was mostly financed by low-interest Swiss franc denominated loans to households and entrepreneurs (*see Chart 3*).

As a result of the global financial crisis, this borrowing option contracted to the minimum from the end of 2008. In early 2009, the analysis of the Research Institute of the SAO of the risks posed by the global economic crisis warned that the drying up of the source of loans extended in Swiss francs would send the home construction market tumbling.⁴ Despite this obvious interrelationship, for austerity reasons, the Hungarian government decided to cut home-building subsidies drastically. The

Table 2

AMENDED BUDGETARY APPROPRIATIONS AND ACTUAL FIGURES OF SELECTED EXPENDITURES OF THE LABOUR MARKET FUND FOR 2009

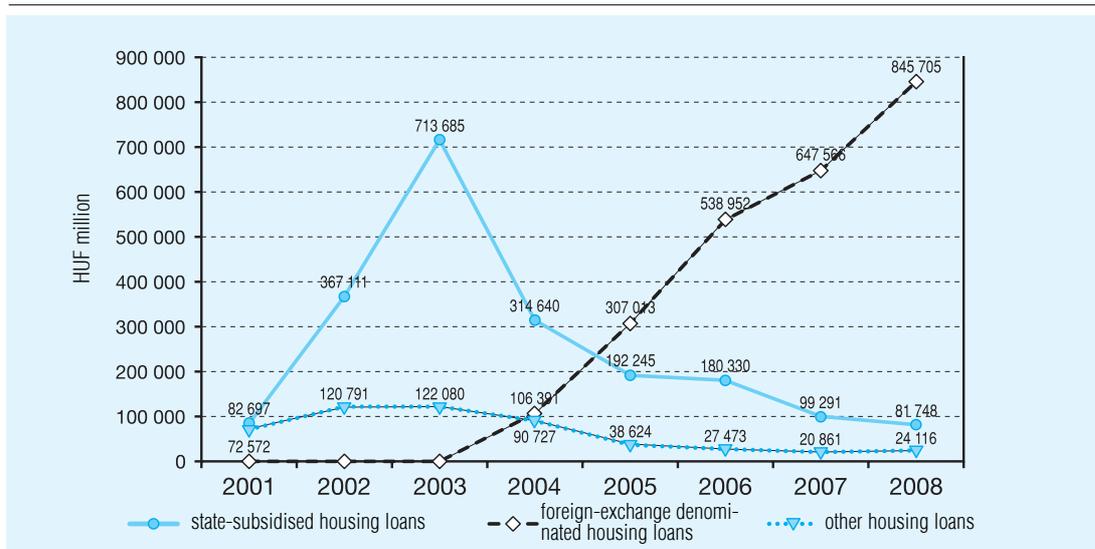
(HUF millions)

Description of the appropriation	Appropriation	Actual figure
Employment and training assistance	46 009.6	39 624.7
TÁMOP (Social Renewal Operational Programme)		
1.1 Labour market services and assistance	22 477.0	20 241.6
TÁMOP 1.2 Normative grants to promote employment	9 110.1	4 111.6
Payments for vocational training and adult education	24 533.8	19 535.0
Aid granted for job-creation with a rehabilitation objective	4 000.0	617.1
Job-seeking grants	100 040.0	139 622.1
Entrepreneurs' allowance	1 680.0	2 640.1
Wage guarantee payments	5 250.0	9 179.8

Source: Final accounts bill for 2009

Chart 3

AMOUNT OF HOUSING LOANS APPROVED IN THE PERIOD UNDER REVIEW



Source: SAO report on the audit on the efficiency of the housing subsidy system, Budapest, April 2009, page 20. The source of the data is the CSO.

“result”:

- compared to the previous year, in 2009 the number and amount of approved loans fell by 62 per cent and 66 per cent, respectively;
- the number of flats handed over declined by 25 per cent;
- the number of building permits issued for new homes fell by 40 per cent;
- Production declined by 10–25 per cent in the main industries that produce basic materials for and are suppliers of the construction industry.⁵

According to the final accounts bill, the subsidy cut achieved in relation to the housing subsidy appropriation barely exceeded HUF 5 billion,⁶ which seems negligible relative to the damage it caused.

We may conclude that order also means discipline. It means the development of, and compliance with, reasonable budget rules. Of course, economists will never agree on what could be considered “reasonable”. For example, in calculating the Maastricht criteria, is it reasonable and fair to disregard the fact that the

additional budget expenditures resulting from the pension reform are offset by the accumulated savings in the private pension scheme? Had it been fully recognised, in 2009 the GDP-proportionate Hungarian general government deficit and public debt would have been lower by 1.4 percentage points and 9.4 percentage points, respectively (see Table 3).

However, it is undeniable that Hungary should not have accumulated an extremely high budget deficit and increased its indebtedness steadily in a benign global economic environment in the first place, for this is why it was forced to take fiscal austerity measures in the midst of the crisis. Foreign examples show that the number of the unemployed could be lower by hundreds of thousands if, similarly to other countries, Hungary had been able to launch carefully planned programmes to mitigate the negative effects of the crisis.

Another obvious conclusion is that restrictions alone do not generate a sustained equilibrium; without growth it cannot be achieved. However, relieving the economy of

Table 3

BUDGETARY SUBSIDY COMPENSATING FOR THE LOSS OF SOCIAL SECURITY CONTRIBUTIONS RESULTING FROM PRIVATE PENSION FUND JOINERS VERSUS PRIVATE PENSION FUND SAVINGS, AS A PERCENTAGE OF GDP

Year	Private pension fund savings as a percentage of GDP	Budgetary subsidy compensating for the loss of social security contributions resulting from private pension fund joiners as a percentage of GDP
2000	1.29	0.47
2001	1.85	0.53
2002	2.34	0.51
2003	2.99	0.69
2004	3.85	0.81
2005	5.11	0.96
2006	6.29	1.01
2007	8.00	1.17
2008	6.65	1.24
2009	9.40	1.36

Source: own calculation based on data received from the HFSA and the CSO

unnecessary burdens is a prerequisite for growth. This does not necessarily mean further curtailments. Almost all audits conducted by the SAO find a great number of seemingly small holes in the audited area through which every tax forint paid in is money down the drain. Filling these holes and terminating superfluous overlaps, in other words, establishing order, could save billions of forints. The SAO issued recommendations to that effect every year; however, only a few of those have been implemented. I will do my best to change this in the future.

A NEW CONSTITUTION COULD ESTABLISH ORDER IN PUBLIC FINANCES

Developing a new Constitution provides an excellent opportunity to establish the legal background for putting public finances in order. Systemic regulation of public finances is absent from the current Constitution of Hungary. Public finances cover the regulation

of public dues, the definition of the subsystems of public finances, the regulation of the sustainability, development, adoption, execution and auditing of the subsystems' budget, the definition of the types of budgetary organisations, the regulation of their establishment, financial management and the auditing of their financial management as well as the regulation of the financial management of state assets and its auditing procedures. The Constitution contains only scattered provisions regarding these issues, usually in the form of summary declarations. It lacks a system of standards ensuring the sustainability of the budget, the definition of the main content components of the budget and the final accounts or a regulation providing for their preparation and adoption.

Citizens are entitled to financial security; consequently, a stable regulation is needed at the level of the Constitution. The protection of the rights and interests of new generations also requires constitutional rules that prevent excessive public indebtedness and ensure a relative balance of the general government. The

most important principles of compiling the budget, such as the requirements of transparency, specification and completeness have to be included at the level of the Constitution as well. Moreover, it must be recognised that the budget has to provide resources for the obligations and tasks laid down in the Constitution and the relevant laws.

Accordingly, I called for a separate chapter to be included in the Constitution to address public finances. This requirement is also supported by the interrelations between international and domestic constitutional laws. Nearly all consti-

tutions of the Member States of the European Union contain such chapters along with detailed rules.

As I said at the beginning of my presentation, “Order creates value”. I would like to conclude with a similar wise saying: keep order, and order will keep you. I am convinced, and I hope what has been said is a convincing demonstration, that – with the words of *Attila József* – a fair order would help emerge from this crisis and put the Hungarian economy on a sustainable growth path.

NOTES

¹ Edited version of the presentation given at the 48th Itinerant Congress of Economists in Szeged on 1 October 2010

² Source: CSO

³ In addition, our audit of the final accounts revealed that this had taken place through the circumvention of law and the exclusion of social partners.

⁴ Gyula Pulay: Budgetary risks of the global economic crisis, presentation at the meeting of the Economic and Social Council on 28 January 2009

⁵ Source: Statisztikai Tükör, 2010, issue 48; Lakossági lakáshitelezés, 2009. II. félév (Housing loans to households, 2009 H2)

⁶ Chapter XI, Title 14, Sub-title 1; the amended appropriation is HUF 205,532 million compared to the actual disbursement of HUF 199,289.3 million.

Ádám Török*

Fiscal policy in the service of sustainable growth

T*The post-2008 international investment climate is quite unfavourable to fiscal policy disturbances and growing budget deficits, much more so than in pre-crisis times. Growing investor sensitivity may make external financing of budget deficit and government debt quite difficult, but the growth perspectives of the national economy may also largely suffer. Rules-based fiscal policy models are increasingly considered helpful in preventing such disturbances, and this beneficial effect is usually enhanced by the existence of an independent office of fiscal policy analysis and monitoring. As of this day, four member countries of the EU maintain such an institution, including Hungary. Their positive experience has encouraged other countries (as the UK for example) to seriously consider the creation of such an institution.*

Amid severe repercussions of the crisis observed since 2008 in terms of increasing deficits and indebtedness, the sustainability of fiscal policy has come into focus across most of

the global economy.¹ This rather serious global problem has approached dramatic levels in certain regions and countries.² The international press has often voiced concerns about a number of euro area Member States – primarily those in Southern Europe –, that they merely delayed sovereign default and ultimately, they would have to face it 5–10 years down the road. Indeed, it is unlikely that these countries can permanently forestall the increase in their public debt, which is already above the critical 90 per cent of GDP.³

In the first decade of the new millennium, the Hungarian economy has struggled with increasing public debt levels nearly continuously. In 2010 the Hungarian national debt-to-GDP ratio stands at 83 per cent compared to a ratio of approximately 50 per cent recorded at the beginning of the decade. Not only is it much higher than the 60 per cent Maastricht criterion, but it is also approaching the critical ratio and, based on international experience, once that threshold is exceeded chances of a sustainable decline in public debt diminish.

In general, false alarms about national bankruptcy or a similar financial disaster largely restrict the room for manoeuvre of a reasonable and sustainable fiscal policy and deteriorate its international reputation. In this respect, caution is warranted also because the concept of

* The original version of this article was delivered as a plenary presentation at the annual Itinerant Conference of the Hungarian Economic Association on 30 September 2010 in Szeged. The author owes a debt of thanks to György Kopits, László Jankovics and Zoltán Jakab M.; however, the article does not necessarily reflect the position of the Fiscal Council in all topics covered by it.

sovereign default has a broader interpretation in the technical literature than in the traditional sense and today, in addition to direct insolvency, it also implies the rising of government bond risk premia above a pre-defined critical threshold (Pescatori – Amadou, 2007). However, we should bear in mind that averting the out-of-control soaring of public debt and ultimately, the sovereign debt crisis, remains a key principle of sustainable fiscal policy. A debt crisis (or even an excessive public debt level) could have severe repercussions not only in terms of finances but also in terms of growth.

According to an OECD study (Furceri – Zdzienicka, 2010) analysing the experience of 159 countries and summarising the lessons of the period of 1970–2006, one year after the outbreak of a debt crisis growth losses may reach 3–5 per cent of GDP, and may even rise to 6–12 of GDP in 8 years' time. The debt crisis is expected to generate an additional 0.7–0.8 percentage point GDP drop in countries where public debt-to-GDP already exceeds the 90 per cent threshold defined as especially critical by *Reinhardt* and *Rogoff*.

According to another source, debt crises and sovereign default should be avoided in consideration of the various costs involved which, although often unpredictable, are invariably substantial (Borensztein – Panizza, 2009). These costs include reputational costs (in other words, the consequences of deteriorating international confidence in the specific country), international trade exclusion costs, increased operating costs to the domestic economy and political costs to the government.

The need to prevent debt crises has come to the foreground not only because of the financial damages involved. The consequences of the crisis seriously jeopardize the economic growth in the countries concerned in the government, corporate and private sectors alike. After a debt crisis, amid a steep decline in income, savings

and consumption domestic capital supply may be considerably curtailed by the outflow of private funds. Consequently, in addition to developing prevention plans against a debt crisis as well as a systematical protection strategy – one that is taken seriously enough even before the alarm bells start ringing –, the conditions for a sustainable budget and hence, long-term economic growth must be ensured continuously, without regulatory or substantive compromises.

The new strategy for the fiscal policy of the European Union – the outlines of which were only emerging, albeit with a strong direction, at the end of October 2010 – is intended to introduce the principle of sustainability in this area as well, and to stand up against the former indulgent and wasteful – yet, inefficient – fiscal policy stance, the so-called 'fiscal alcoholism' (Kopits, 2006). The heretofore disclosed elements of the strategy claim that transparency, accountability and enhanced responsibility are required in fiscal policy, for strict compliance with these principles can largely contribute to regaining and retaining the confidence of international investors over the long term. These are also the fundamental pre-requisites of maintaining long-term financial stability within the euro area, the importance of which was particularly underpinned by the Greek debt crisis in the spring of 2010.

Following the political transition, Hungary had politically-driven, regular, four-year fiscal cycles until 2006. This meant that election years invariably saw soaring budget deficits with a corresponding increase in public debt. Similar cycles could be observed in other transitional countries as well, such as the Czech Republic and Poland. However, the swings of the cycles were less wild in those countries and public debt did not escalate to excessive levels. In some EU Member States of the region, such as Slovenia, Slovakia and the Baltic States, the elimination of fiscal political

cycles and the fundamental transformation of the system of public finances have become an organic part of the reform process (Kopits, 2009). However, there were significant differences. For example, instead of adopting major reform measures, Slovenia preferred a pragmatic approach; the Baltic states, in turn, relied on a so-called external anchor while they enjoyed the benefit of not having a debt burden inherited from before 1990.⁴

As a result of poor fiscal policy decisions and the cyclicity pointed out above, Hungarian public debt as a percentage of GDP has been growing continuously for the past 8–9 years, and in 2010 the debt-to-GDP ratio significantly exceeds the values recorded in all the other new EU Member States.⁵ (See Chart 1)

The international credit market has become more sensitive since the outbreak of the Greek crisis at the beginning of 2010. A number of euro area Member States (Spain, Portugal and Ireland beside Greece) have been put on credit

watch already. Investor confidence in new EU Member States – including Hungary – has notably deteriorated.

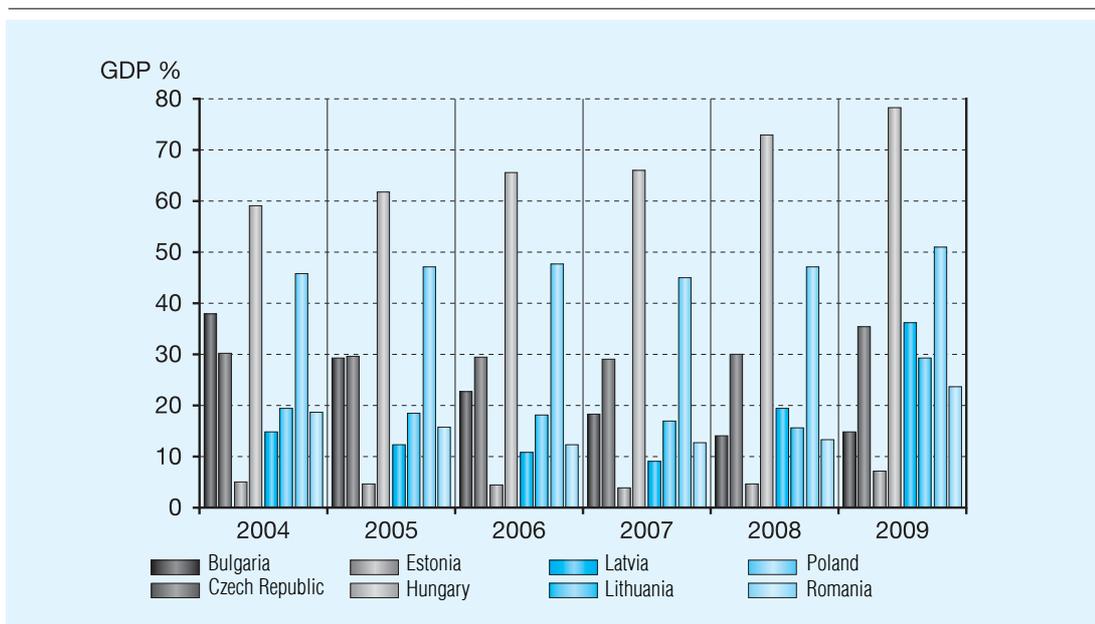
The wild swings observed in investor confidence demonstrates how jittery the market is. Until the first round of the parliamentary elections in 2010, the risk premium on Hungarian government securities has gradually declined. However, the investment appetite of non-residents was temporarily reduced by the impact of a number of unexpected political statements (the so-called ‘communication surprises’) and by the renewal of budget transparency problems following the episode in 2009 (such as a lack of comparability of some annual data and the removal of the loss relief of state-owned companies from the budget).

Between April and September 2010, the CDS⁶ spread on Hungarian government securities – a measure of investors’ confidence or, more precisely, their perception of a country’s risk – increased to nearly 380 basis points from

Chart 1

GROSS NATIONAL DEBT AS A PERCENTAGE OF GDP

(Maastricht indicator)



Source: Fiscal Council Secretariat

around 200 basis points, while it remained consistently below 200 basis points for Czech, Polish and Slovakian government papers. *Chart 2* indicates particularly nervous swings in the Hungarian CDS spread from January 2009. In the first decade of the 2000s, up until the beginning of 2008, the spread did not rise above 50 basis points in Hungary; however, in the ominous atmosphere of October 2008 it soared to 600 basis points. It declined subsequently before starting to exhibit nervous fluctuations again in the summer of 2010.

It was not only the international markets that became more sensitive to the fiscal balance issues of specific countries, but also the institutions responsible for fiscal matters across the European Union and worldwide. Accordingly, in Brussels preparations for the reform of the contents of the Stability and Growth Pact were put on the agenda. This reform would not modify the so-called Maastricht criteria as such, but it would establish conditions for their

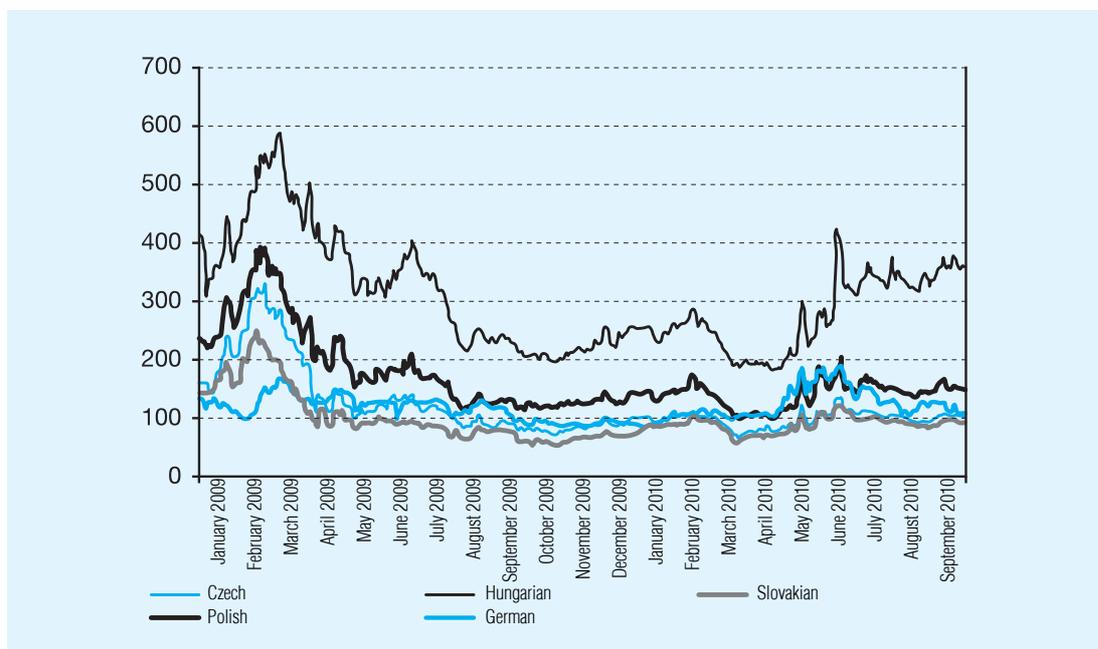
more stringent and permanent control and accountability. According to the new approach, dual control (legality and substance) would be introduced over the fiscal policies of the EU Member States.⁷

In practice, this would translate into the general application of the so-called rules-based fiscal policy models in Europe. A rules-based fiscal policy limits the annual deficit level or the public debt level for a pre-defined, usually longer-term period, primarily based on the recognition that in parliamentary democracies there is continuous pressure on economic policy-makers to increase budget expenditures and slash revenues (more specifically, taxes). This recognition is associated primarily with the representatives of the *public choice* theory (Vass, 2006, pp. 61–62).

Dual control over the fiscal policies of the Member States could be put in place by assigning independent national institutions to play this role alongside the European

Chart 2

10-YEAR CDS SPREADS



Forrás: Reuters/Datastream

Commission, or even a separate agency established by the Commission for this purpose. The co-operation between the national fiscal regulatory systems and an EU-level independent monitoring system would be able to issue an alert, jointly and truly credibly, if the gross national debt of a specific Member State exceeded 60 per cent of the gross domestic product or if the rising of the ratio pointed to unsustainability. Contrary to current practice, legal or financial sanctions could follow the collapse of the budget balance.

In most of the Member States (in 15 countries so far), such institutional reforms have already begun, or have been firmly put on the agenda. The first step is generally aimed at the adoption or maintenance of tighter fiscal regulations. The example of Poland should be highlighted, where the rising of public debt above a certain threshold (55 per cent of GDP) is tantamount to breaching the constitutional limit. Elsewhere – in Germany, for instance –, while the rules are not as strict in the formal sense, fixed fiscal regulations ensure the long-term predictability of the deficit and debt paths.

In other countries the objective is to establish an independent supervisory institution for the fiscal policy. An independent institution is a stronger instrument for ensuring the sustainability of the fiscal policy, because it can determine the practical directions of fiscal policy and budget planning without being influenced by the government. In addition, it can demonstrate to the public that fiscal policy can be influenced by external constraints stronger than potential political commitments (Benczes – Kutasi, 2010, pp. 157–159). This could ensure such an independent institutional anchor for fiscal policy, which may even assume a part of the government's professional (but not political) responsibility towards the society for unpopular fiscal policy decisions.⁸

Such institutions are already in place in four Member States (Belgium, Holland, Sweden and

Hungary), albeit with different competences and responsibilities for the time being. Since February 2009 this institution in Hungary has been the independent Fiscal Council. The British and Romanian governments have been studying the Hungarian experiences⁹ with a view to establishing a similar institution.

Professional arguments for the rules-based Hungarian fiscal policy stress that the yields on Hungarian government securities are not only sensitive to market and macroeconomic facts, but also to communication. As such, a communication surprise or mishap may translate into fact or serious market information. Thus they can strongly influence the market perception and risk premium of Hungarian government securities – in other words, the debt service commitment –, even if macroeconomic facts would not otherwise warrant concerns or anxiety.

Hungarian fiscal performance and achievement of transparency have recently been in the focus of increased international attention by the EU authorities, the international markets and credit rating agencies. Carefully planned communication, transparency and the clear direction towards sustainability may have a favourable impact on the mood and decisions of international investors. It could improve credibility if the Hungarian financial government complied with the 'paygo', i.e. the mandatory consideration rule, from as early as 2010 and the real debt rule applicable to the long-term balance from 2012.

The first serious test is the 2011 budget and the implementation of the mid-term fiscal strategy. Not only the pre-defined deficit target (of 3% or less by 2011) will be monitored in Hungary, but also compliance with the requirements that are necessary in order to put real debt on a declining path and improve the long-term investor perception of the country. This would put an end to the detrimental self-fuelling processes which increased the public

debt of Hungary from the beginning of the new millennium without boosting economic growth. By doing so, they further deteriorated the criteria system of debt repayment.

Indeed, a vicious circle has developed. Between 2001 and 2010, Hungarian economic leaders could not even use the excuse cited frequently abroad for the increasing level of debt, namely, that debt increased year after year to increase the growth potential of the economy and forestall a crisis. It is a deterring textbook example when, instead of laying down foundations for the future, a country uses expensive external borrowing to cover its current needs, thereby imposing further limitations on its own growth potential. This government stance is especially typical in countries with an ageing population. In those countries decision-makers are under a stronger social pressure to change the re-distribution of the budget in favour of the older age groups (Kopits, 2009, p. 73). This is an absolutely understandable ambition from a social and a political perspective. However, if the budget redistribution improves the welfare position of the older age groups without offsetting it by reduced financing for other expenditures, efforts to reduce public debt will be inhibited.

The chance of breaking out from the ‘vicious circle’, and create an ‘angelic circle’ is in the hands of the government. However, in these efforts it is important to consider the independent analyses and proposals that were prepared with a few to furthering the sustainability and transparency of fiscal policy. The Hungarian experience has proved (and serves as an example for a number of countries including the United Kingdom and Romania) that fiscal policy could become more controllable and predictable if, in addition to stricter regulations, an independent public monitoring institution was put in place (one that closely follows the fiscal processes and issues a warning as soon as the first signs of risk materialise).

With the support of these factors the Hungarian economy could step onto a truly sustainable growth path sooner. The sustainability of the budget and hence, growth, is a necessary requirement for increasing the inflow of external capital investment as well. In any case, it will contribute significantly to reducing the risk premium on Hungarian government papers and thereby easing the interest and debt burden.

NOTES

¹ According to certain sources, the issue of fiscal sustainability has been in the focus of attention of economic research since the beginning of the 1980s (e.g., Vass, 2006). Without an intention to argue with this statement we should note that it was in 2007-2008 that the issue grew to become a crucial problem of national economic policies. However, the interpretation of the concept has been extended since then, and today it also covers the adequate economic growth rate and the growth rate and value of the real interest rate (Benczes – Kutasi, 2010, pp. 72–73).

² See, for example, Reinhart – Rogoff (2010), Furceri – Zdzienicka (2010)

³ For this see Reinhart – Rogoff (2010)

⁴ The Latvian debt crisis warns that the fiscal political reforms of the Baltic States did not succeed everywhere. The world took notice of the Latvian crisis in June 2009, when Latvia failed to sell any of the treasury bills offered for sale at the auction following the issuance of government securities worth USD 100 million.

⁵ The situation of Hungary should only be compared to EU Member States which are at a similar stage in development. In Japan and Italy, for example, the public debt-to-GDP ratio is around 200% and 120%, respectively. However, these countries are much less exposed to foreign creditors because, for the time being, they have sufficient domestic savings to ensure the sustainable financing of their public

deficits. In addition, these two economies are far more advanced than the Hungarian economy, which could be viewed by external creditors as a stronger guarantee.

⁶ Credit Default Swap, in other words, the probability of the government's default on the loans it has taken (practically a guarantee indicator).

⁷ However, as of early November 2010 it is still unclear whether the European Union will adopt the more stringent and consistent 'Northern' (German, Dutch, Scandinavian), or the more permissive

'Southern' (French, Italian, Spanish) principles to serve as a basis for the control of fiscal policies and the sanctions for non-compliance with national fiscal targets.

⁸ As János Kornai pointed out, the independent supervisory institutions of fiscal policy cannot participate in political decisions; however, they are certainly entitled to criticise them on the strength of their own professional criteria (Kornai, 2010).

⁹ For more details see Kopits – Romhányi, 2010

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Anatomy and Lessons of the Global Financial Crisis

Is US Consumption Financed by Chinese Savings?

Savings and investments in the American money market by emerging countries, primarily China, financed the excessive consumption of the United States in the early 2000s, which indirectly led to a global financial crisis. The crisis started from the real estate mortgage market. Such balance disrupting processes began on the American financial market which contradicted all previously known equilibrium theories of every school of economics. Economics has yet to come up with models or empirical theories for this new disequilibrium. This is why the outbreak of the crisis could not be prevented or at least predicted. The question is, to what extent can existing market theories, calculation methods and the latest financial products be held responsible for the new situation. This paper studies the influence of the efficient market and modern portfolio theory, as well as Li's copula function on the American investment market. Naturally, the issues of moral risks and greed, credit ratings and shareholder control, limited liability and market regulations are aspects, which cannot be ignored. In summary, the author outlines the potential alternative measures that could be applied to prevent a new crisis, defines the new directions of economic research and draws the conclusion for the Hungarian economic policy.

The 2007–2010 global financial crisis, estimated to have led to trillions of dollars of loss

all over the world, was not caused by a war or a major recession, but rather by the shadow banking system of the United States of America, i.e., the 'animal spirits' of the investment banks, hedge funds and supermarket-owned banks, as well as the elegant mathematical models that are based on irrelevant premises and were not even truly understood by most financial managers. The Americans presented the whole story very simply and with less transparency by claiming that the crisis was caused by the liquidity shortage of the American banks, which was the result of the overvaluation of assets. In other words, they do not mention the most important thing, which was the focus point of the anatomy of the crisis, namely, that greedy and irresponsible Wall Street investment companies transformed hardly documented sub prime mortgage loans, designed for clients² with weak credit rating into exotic and poisonous financial products through multiple leverage.³ Practically they sold completely unfounded expectations and unsecured stocks (*shares short*)⁴ to non-creditworthy middle-class investors for huge amounts, and earned astronomical amounts with *proprietary trading*. The leverage trade in the derivatives of the real estate mortgages was extensive even when the falsified rating of these derivatives by the American Moody's, S&P, Fitch etc. became

obvious and it was increasingly likely that the American real estate market bubble was going to burst.

However, according to⁵ latest analyses, the global financial crisis was directly caused by the ineffective market allocation of foreign, primarily Chinese, savings flowing into the US. The huge liquidity abundance accumulated in the American financial sector was used to enhance American living standards and finance the disproportionately high consumption of Americans instead of productive goals or the effective transformation of the struggling American industry's production structure, for example by making the American steel production or motor industry more competitive. The bursting of the IT bubble in the second half of the 1990s, followed by significant cuts in IT investments were an additional factor in this tendency. In fact, this process and many of its interim developments finally led to the credit crisis on the real estate mortgage market as well as the credit card market. First a minor economic recession occurred in the American economy and then the world was pushed into a financial crisis by the huge risk appetite of investors from all parts of the world (almost only Americans on the real estate market).

These days we know very little of the IMF's role or activities during the crisis, because a lot of financial experts previously doubted the need for its existence, but the IMF undertook an exponentially larger role in the management of the crisis (see Csáki, 2009) and presumably pocketed even higher proceeds than during the Bretton Woods era. Consequently, if we may say so, the IMF is one of the winners of the crisis.

Obviously, by now the circumstances have changed so much that the objectives of *Keynes* concerning the establishment of IMF as the central bank of the world, co-ordinating the financial system and negotiating between countries with balance of payments surplus and

deficits is now an obsolete idea. Keynes' IMF encouraged countries with sufficits to conduct an expansive monetary policy, while persuaded those with deficits to apply a restrictive monetary policy. In the current situation, Germany would be encouraged to accept a higher budget deficit and conduct an expansive monetary policy in order to purchase more commercial articles from its partners.⁶ On the other hand, these days IMF works more or less like a cartel of creditors. (Dean Baker's articles in *The Guardian*) These days, the IMF operating on the former ideas of Keynes follows the Chicago school, *Milton Friedman*: the government must be reduced, companies need to be privatised and strict budget policy needs to be conducted in order to have solid growth.

The crisis and its management were analysed by numerous articles, books and media products both in Hungary and abroad. They are mostly dominated by macroeconomic papers and discussions, focusing primarily on the role of the contradictory Keynes and neo-classic schools and the crisis of economic science (Leijonhufvud, 2009; Móczár, 2010/a). *Mellár* (2010) undertook an even greater assignment when he briefly (without formalisation) described all textbook macro models, including DSGE, and reached the right conclusion: as these models did not include the financial sector, they could not predict the financial crisis.

It is obvious that the causes of the financial crisis can only be explained on the level of microeconomics, through one of its segments to be precise, by studying financial innovations and the trade of new financial products. Naturally, there is a large number of such articles as well; e.g., *Losoncz – Nagy* (2010), analysing the responses of commercial banks to the crisis by quoting international examples and statistical data. In this paper we look at the crisis both at macro and micro levels based on the measures of the shadow banking system. We shall refer to those economic theories and mathematical

models that misled the financial innovations of Wall Street and can, to a certain extent, be held responsible for the crisis. The frequent use of the radiation and basic concepts of the theories and models, often requiring complicated mathematics, has a very special role in this.

The macroeconomic consequences of the financial crisis can in fact be understood only if they are embedded into the applicable microeconomic correlations. This is what this paper intends to prove as well. In our analysis, we assume that the contents and functions of the latest global financial innovations and financial products are known,⁷ and we shall also ignore the formalised correlations between the various theories and models.

WHAT CAUSED THE TERRIBLE FINANCIAL CRISIS, WHICH SWEEPED ACROSS THE WORLD?

There is wide consensus that this crisis could not have developed without any prior events. However, opinions differ as to how long we should go back in history. *Michael Lewis*, a bestseller author, who writes for the general public about scandalous American finances would go back to the broker poker (*Liar's Poker*), revealing the Wall Street of the 1980s in his latest book (*The Big Short*⁸, 2010) (*Lewis*, 1982), when the bombastic deal of *securitisation of mortgages*, invented by the Salomon Brothers took off, saturating the markets by the mid-1990s. On the other hand, one of the few economists,⁹ who warned about the forthcoming crisis, *Raghuram G. Rajan* (2005) from Chicago, would go back only to the crisis waves sweeping across the emerging markets of the 1990s. These waves caused the collapse of the economies of East Asia, made the stock exchange and real estate market twin bubble burst in Japan, rendered Russia insolvent, and created considerable financial difficulties for

Argentina, Brazil and Turkey. The emerging countries opted for the simplest possible solution in order to avoid the crash: they became a lot more cautious in external borrowing, their governments and companies cut back on capital investments and their households spent less. With such restrictions, these emerging countries soon turned from net importers into net exporters of financial investments. The latter group was joined by China, which is one of the largest investors on the American securities market.¹⁰

It is clear that the net savings generated in one region of the global world financed the deficit of other regions. At the beginning, the shareholding companies of the industrial countries absorbed these savings and used them to fund capital investments, especially IT development. When the IT and dot.com bubbles burst in the second half of the 1990s, these investments were also cut heavily.

At that time, the world did not fall into deep recession yet, as it could be avoided with the low interest rates of the central banks. The relatively cheap funds stimulated housing demand in many countries of the world which then gave a boost to the construction of residential properties. However, the price increase was not the largest in the US. House prices compared to rent or income were higher in Ireland, Spain, Holland, the United Kingdom and also in New Zealand. And this brings us to one of the most important issues: why did the crisis occur first in the US? *Diamond* and *Rajan* (2009) answered this question in the simplest possible way: the US pushed financial innovations the furthest, thus attracting the most consumers to the market, who were still credit-worthy. We all know that supply and demand could still have functioned properly on the money market and it should not have had to inevitably lead to a financial crisis. The key to the puzzle is in the financial innovations, as it will be explained later, i.e., in the new financial

products, which the quantitative analysts (or ‘quants’ in the American jargon) priced according to the theory of efficient markets and modern portfolios, using *David X. Li* Gauss’ copula formulae in their calculations, which all failed and led to a crisis and, last but not least, also gave in to the distortion of moral restrictions.

We can accept the argument of Losoncz – Nagy (2010) according to which global liquidity surplus on the housing market, huge risk appetite of investors, market processes and optimistic expectations about the prices of capital market instruments were all factors contributing to the development of the price bubble.

The real estate mortgage loans were attractive primarily for domestic American investors. (Luckily, none of the American credit banks came up with the idea of involving properties abroad into the securitisation.) Another factor contributing to the development was that in the US the interest on mortgage loans is deductible from the tax base.¹¹ In the meantime, investment banks and hedge funds also realised that they could significantly mitigate the risk by packaging these mortgages with mortgages originating from other fields, thus creating a diversified product. Furthermore, the most risky receivables in the package could be sold to those who had sufficient capacity for valuation and undertook the risk of these securities as well. Thus the most secure securities with AAA-rating¹² were held for foreign investors. As the demand of international investors for securities with AAA rating increased, the banks created packages of securities with lower ratings and securities with AAA ratings and sold them on the market as Collateralised Debt Obligation (CDO)¹³.

The banks could process only the credit score and loan/value ratio of the real property owners in the mortgage collateralised securitisation, i.e., they could not obtain information which would have been important for assessing

the actual creditworthiness of the borrowers. As real property prices were continuously rising, the banks did not worry about the repayment of the loans, because the rise in prices represented sufficient ‘capital’ for repayment. (The simplest technique for this was the renewal of the outstanding loans by the borrowers every 3–4 years.) Nothing stopped them from getting increasingly involved in *predatory lending*¹⁴, in which, as we know, the *prey* became liquidity.¹⁵

As other debts were added to the original mortgage packages, extremely complicated securities appeared on the financial markets, which made the situation even more complicated. In fact, they were time bombs at the banks, which was not detected while housing prices kept rising. However, as soon as the rise in prices stopped and insolvency began to grow,¹⁶ bankers also felt the imminent risk immediately. It is surprising that even despite this they kept many Mortgage Backed Securities (MBS) in their portfolios.

The question is why they were kept by the issuing banks. In addition, they contained not only MBSs with lower ratings, but there were also better rated MBSs for which there was demand all over the world. According to Diamond and Rajan, bankers thought that these securities were valuable investments despite their high risks. An investment into MBS seemed part of the excessive risk culture, which was adopted by the banks. In this culture, it is very difficult to predict in the short term, primarily in relation to new financial products, whether the finance director can generate additional yield with the risk assumptions, or the current yield is simply the compensation for the risk which will materialise later.

The performance of chief executive officers at American banks is assessed partly on the amount of profit generated by them compared to other CEOs. As certain leading banks can legally earn high profits, to a certain extent it

also encourages other banks to keep up with them. Therefore, the latter banks assume even greater risks and by doing so they would even pump up their share prices, thus increasing their personal reputation.

Top managers are interested in maximising the income of the bank in the long term, therefore they must come up with incentives and rules which also push staff members in the same direction. On the other hand, many payment schemes pay out on the short-term risk bearing capacity. This gives an incentive to trading partners to also assume endogenous risks, which are not recognised by the system, through which they can generate an income even if in fact it is only a risk premium (*market risk premium*). A classic example for this is when insurance is charged in rare cases such as insolvency, which was managed as a ‘fat tail’ risk.¹⁷ Dealers who bought MBSs with AAA ratings were willing to extend these instruments to corporate securities, ignoring the endogenous insolvency risk, inherent in these non-tested securities.

Investors could demand very high risk premium for the financing of a bank in the long run, due to the extremely diversified activities of the risk bearer bank and its potential internal regulatory inconsistency. On the contrary, they are inclined to have short-term demands, because thus they can either gain a higher premium, or they will have an opportunity to exit if the bank clearly struggles. Banks also consider short-term receivables more attractive than long-term receivables, because banks try to avoid illiquidity. Diamond and Rajan (2009) refer to the fact, which they also formally showed in a previous study, i.e., that the liquidity of institutions trading in multiply leveraged securities falls parallel with the future expectations of lower interest rates. Lower interest rates made the yield curves steeper, as the difference between short and long-term loan interest rates increased. The banks are interested

in the spread, which is the difference between the cost of deposits and loan interest. It should be noted that the US was not in a bad position in the loan-deposit ratio, i.e., the ratio of deposits actually placed out as loans: its 83 per cent is higher than Canada’s 78 per cent, but it is lower than the UK’s 96 per cent.¹⁸

While financial markets prospered, bankers shared the opinion that a short-term debt was still cheaper than a long-term debt and the cost to stop illiquidity. On the other hand, it cannot be ignored either that markets prefer banking structures that are shorter and multiply leveraged. But when ‘things are not going as well as we wish’, it is unlikely that bankers assume too large risks and the markets focus on investments.

The high ratio of the mortgage-based securities in the banks’ portfolios, which were financed with a short-term debt-based capital structure, made the crisis inevitable, especially when house prices stopped rising and began to fall. The value of MBSs dropped, it became more difficult to price them, and their prices became more volatile. Banks became illiquid, starting with Bear Stearns, which was acquired by JP Morgan in March 2008: the shares were purchased for USD 2 each. It cost an USD 30 billion loan to Fed, and JP Morgan benefited from the transaction, but this was the only way for the Fed to protect the American financial system from the crash.

The Fed gave new preferences, which enabled banks to lend despite their illiquid position. Fannie Mae and Freddie Mac were¹⁹ directly instructed to acquire mortgage securities with low ratings, which represented 25–30 per cent according to some estimates. As more and more banks got into difficulties due to the falling prices, concerns about illiquidity turned into potential insolvency, because they did not have money to pay off the debts.²⁰ Bankruptcies began with the bankruptcy of the Lehman Brothers, which led to a worldwide

panic. Communication errors made the situation even worse, including the announcement by *Barack Obama* on national television in September 2009, stating that ‘financial markets are close to collapsing...’ Those who have not yet withdrawn their short-term deposits from Citigroup, now rushed to do so. ‘On what planet do markets not crash after that?’ – asks *John Cochrane*.²¹ Inter-bank lending froze, with only the overnight loans remaining, and certain funds completely dried up. Severe liquidity problems first led only to a *credit squeeze*, which was soon followed by a *credit crunch*. Panic-stricken investors rushed to withdraw their capital.

Below we shall go through the premises, philosophy and statements of a few elegant mathematical models, in terms of their relevance to the financial crisis, which were somehow used as the basis for the creation of the financial innovations, i.e., the new poisonous financial products.

EFFICIENT-MARKET HYPOTHESIS

The research of *Paul A. Samuelson* contributed²² to the establishment of two great theories used in the analysis of money markets: the efficient market hypothesis and the option pricing. He published a study in 1965, explaining that on well-informed speculative competitive markets prices develop accidentally after a certain period – this was the initial theoretical origin of the efficient market hypothesis, which was fully described later by *Eugene Fama* (1965, 1970). The early pioneer work of *Louis Bachelier* (1900), whose theories later supported the *Black – Scholes* option pricing model, was recommended to actuaries by *Kolmogorov* (1931) and to financial economists by *Samuelson* (1972)²³. Bachelier suggested also the assumption that the random movement of share prices followed the geometric Brownian

motion, which made the model effective. The same thought was elaborated further by *Robert Merton*, who worked together with *Fisher Black* and *Myron Scholes* (1973) on option pricing, for which they were later awarded the Nobel Prize.²⁴

According to *R. Jarrow* and *Ph. Protter* (2004), the mathematical modelling of the Brownian motion stems from three sources. The first relates to *T. N. Thiele* (1880), who came up with a potential model for the Brownian motion during the study of the time series in Copenhagen; the second is associated with *L. Bachelier* (1900), who studied the Paris Stock Exchange based on the Brownian motion; and finally, the third relates to *A. Einstein* (1905), who proposed a model for the movement of small particles observed in liquids mainly for the purpose of convincing other physicians of the molecular structure of materials.

Samuelson knew of the work of *Einstein* (1905) and *Thiele* (1880), but appreciated *Bachelier*’s study (1900) the most, in which he described the theory of speculation with mathematical formulae, thus making mathematical finance one of the branches of applied mathematics. Mathematical finance was the origin of the mathematical or numeric models, proposed in financial economics: while a financial economist studies the structural reasons why one company has a particular share price, an actuary considers the share prices as given data and tries to define the value corresponding with the derivatives of the shares with a stochastic calculus. In other words, there is considerable, but not full overlap between these two separate scientific disciplines, which can and could lead to several misunderstandings. Anyhow, it is clear that mathematical finance is a segment of applied mathematics and requires mathematics which is a considerable challenge for economists, but the use of the various formulae does not require a deeper theoretical mathematical background.

Fama defined the efficient market first (1970, p. 383): “A market, on which the prices »fully reflect« the available information, is effective.”²⁵ In other words, the expectations of the actors of the efficient market are reasonable and represent all available information to price the assets properly.²⁶ An efficient market can exist if there are no market actors who consistently give better evaluation to the available information than the information implicitly included in the prices.

In finances, the efficient market hypothesis states that in the long run, it is impossible to achieve a yield higher than the average yields, weighted with risk, provided that publicly available information exists at the beginning of the investment. As Fama, the father of the efficient market hypothesis stated: “markets cannot be beaten.”²⁷ What happened to the credit markets in the recent financial crisis was the confirmation of the theory, argues Cochrane,²⁸ because it showed that investors generally cannot beat the market without assuming major risks. (Those, who manage to beat it, follow the modern portfolio theory, which will be described in the following section.) Three versions of the hypothesis can be distinguished depending on how the prices reflect the information. In weak-form efficiency, prices of traded assets (bonds, shares, properties, etc.) already reflect all the publicly available historic information. In semi-strong-form efficiency, prices satisfy the criteria of weak-form efficiency, yet they change immediately, if any new information also becomes public. Strong-form efficiency requires prices to reflect the hidden or “insider” information also. While there are test results for and against the weak and semi-strong forms, the strong-form failed in each test. What is most contradictory is that low priced shares have higher yield than other shares. (Basu, 1977; Rosenberg, Reid and Lantsein, 1985)

The efficient market hypothesis required reasonable expectations from market actors,

which theory became the new orthodoxy from the 1980s, led by *Robert Lucas*, integrating into the equilibrium models, and partly dynamising them. However, it should be noted that the entire financial sector was left out from these models and their stochastic versions, i.e. the DSGE models²⁹ which excluded them from the analysis of the financial markets, saturated with new products.³⁰

The dominant view is that markets are efficient, which means that even an investor not having any information can trust the market, because in theory the price of any securities reflect all potential information, which is relevant for its value. Practically the same approaches are still dominant, as they form the basis from pension fund investments to the evaluation of securities by financial analysts.

While it is easy to define sufficient conditions for the hypothesis, it is a lot more difficult to define the necessary conditions, which are often disputed. E.g., if all information is freely available, the market is free of transaction costs and all market actors reach the same conclusion by using the available information, then it is obvious that the market is efficient. In other words, the inconsistency of investors, the transaction cost and unavailable information may be the sources of failure of market efficiency.

According to the efficient market hypothesis, the capital market boom starting in the second half of the 1990s reflected the economic foundations, and therefore financial authorities, more specifically the Fed, did not have to intervene. Market fundamentalism is the belief that markets adjust themselves and financial markets aim at an equilibrium, while any discrepancy is accidental. This is exactly what many doubt, including *George Soros* (2008) claiming that the investment bubbles reflect the false equilibrium of financial markets.

The market fundamentalism theory led to the deregulation of the markets, which was

initiated by *Thatcher* and *Bush Sr.*, and which ultimately led to the current crisis. Due to abundant liquidity, prices began to rise, which, together with falling loan interest rates, created a euphoric and unreasonably optimistic mood among investors: in the hope of huge returns, more and more investors appeared on the investment market, which gave a further boost to prices. This spiral in fact contradicted market efficiency. This is why George Soros (2010) states that markets are reflexive, i.e. they reflect the irrational expectations of market participants in the form of irrational profit opportunities, which created bubbles, first on the real estate market, and then on the highly levered credit markets. The low interest rate-based cheap financing increased the demand for real estates, which raised real estate prices through the automated market mechanisms. The latter gave a boost to the lending of the banks, and was also supported by the appreciation of the real estates that secured the loans. This spiral diverts the prices from the market foundations, and the increasing discrepancy finally burst the bubbles.

The true test of the efficient market hypothesis was the events of 2007–2010, in which the hypothesis failed.³¹ It failed because the assumptions of the hypothesis did not reflect the true investor's conduct, and it was also true for the attributes of the stock exchange processes. In his excellent study *Min Deng* (2009) also reached a conclusion that efficient market theory was far from a reasonably close approximation to the stock market realities, and its scientific content was close to zero. (While the former conclusion is acceptable, the latter statement can be strongly doubted.) Interpreting the warning of *Joseph Stiglitz* in relation to the crisis,³² we may also say that the hypothesis does not describe the investors and the investors' markets as they are, but as it wishes to see them.

MODERN PORTFOLIO THEORY

The modern portfolio theory is one of the most important and influential economic theories dealing with finances and perfect investments (high yield and low risk). Its mathematical model was developed by *Henry Markowitz* (1952).³³ The theory states that it is not enough to consider the expected risk and yield of one share, because by investing into more than one shares, the investor may gain a much higher yield as a result of diversification. It practically captures a very simple popular wisdom: "If you want to take home other than cracked eggs, then do not put all your eggs into one basket".

When purchasing shares, most investors undertake a risk of the yield being lower than expected. In other words, the risk is the deviation from the average yield. Another way of putting it is that the investment is a *trade-off* between the risk and the yield. In general, the higher risk is associated with a security, the higher yield it may generate.

The risk of a portfolio of various individual shares is smaller than the risk inherent in any of the various shares (provided that the various shares do not relate to each other directly, i.e. the correlation coefficient is zero for each pair). As a simple example, let us take a portfolio, which contains two risky shares: one pays out when it rains, the other pays out when it does not rain. The portfolio, which consists of these two shares, always pays out irrespective of whether it rains or not. The addition of a risky investment to another may reduce the total risk of the portfolio which corresponds to both kinds of weather.

The portfolio risk consists of two types of risks: the systematic risk, which is permanent, irrespective of the number of securities contained in the portfolio and the non-systematic risk, which gets lower as the number of securities in the portfolio increases. The examples for

the first one are interest rates, recession and wars, while the latter one is the individual risk of the securities, which may be mitigated with diversification. The difference between the risk levels of the individual securities determines the risk of the total portfolio. These two approaches practically offer themselves for writing a primal-dual algorithm, which is the mathematical quadrature of the modern portfolio theory.

In other words, Markowitz showed that a good investment is not only the collection of shares, but the selection of the right combination of shares, one of which is the “egg in the nest”. The modern portfolio theory specifies for a specific risk amount how to choose the portfolio, which will have the highest potential yield. Or, on the contrary, based on a specific expected yield, the theory helps select the portfolio, which involves the lowest potential risk.

The modern portfolio theory assumes that investors are risk averse, meaning that given two portfolios that offer the same expected yield, investors will prefer the less risky one. Thus, an investor will take on increased risk only if compensated by higher expected yield. Conversely, an investor who wants higher expected returns must accept more risk. The exact trade-off will be the same for all investors, but different investors will evaluate the trade-off differently based on individual risk aversion characteristics. The implication is that a rational investor will not invest in a portfolio if a second portfolio exists with a more favourable risk-expected yield profile – i.e., if for that level of risk an alternative portfolio exists which has better expected yields.

Every possible combination of the risky assets, without including any holdings of the risk-free asset, can be plotted in a coordinate system (x, y) where x is the portfolio risk and y is the expected yield. The collection of all such possible portfolios defines a region in the positive quarter of this space. The left boundary of

this region is a hyperbola (“Markowitz bullet”), and the upper edge of this region is the efficient frontier.³⁴ A portfolio lying on the efficient frontier represents the combination offering the best possible expected yield for given risk level. When a risk free asset (e.g., US treasury bills) is introduced, the half-line shown in the figure is the efficient frontier (*capital allocation line* – CAL), which is tangent to the hyperbola. The introduction of the risk-free asset to the portfolio improves its efficiency, because everywhere, except at the tangency portfolio, the half-line gives a higher expected yield than the hyperbola does at every possible risk level. The tangency portfolio is known as the “one mutual fund theorem” in the literature. (For more details, see Merton, 1972)

The risk, yield and correlation, used in the modern portfolio theory are estimated values, which, in very simple terms, means that they are mathematical statements about the future. When we determine the volatility of the yield and the specific variables, we use historic time series, and the calculated estimated values do not reflect new market conditions which did not exist in the past, and therefore they cannot be reflected in the applied time series. The lack of structure can also be observed here, which is also a generally strong criticism against any analysis based on the own time series of various macro economic variables.

The mathematical figures of risk may be accepted also with certain reservations. The modern portfolio theory uses unbiased variance for measuring the risk and this can be justified equally to yield with elliptic distribution, ordinary distribution, but other risk measurements (e.g., coherent risk measurements) may reflect better the preferences of investors for general yield distribution. As the unbiased variance is a symmetric measure, it calculates the abnormally high yields as risky as the abnormally low ones. In relation to this, some

experts in literature claim that investors are in fact interested only in losses, and they do not care much about the distribution or tightness of the higher than average yield. However, more and more people share the intuition that in terms of its nature, a risk requires more of an asymmetric measurement.

All these show that the modern portfolio theory does not model investment markets very well, and that their risk calculations can only be accepted with strong reservations. This conclusion is also supported by the latest research results of *Hubbard* (2009). George Soros (2010) also identifies the problem with risk calculation. In his opinion, risk calculations are made with false premises, i.e. under the assumption that modern money markets (similarly to commodity markets) are always cleared up, they are generally in balance, and any swing is only accidental.

However, in the recent financial crisis investment banks that manage mortgage loans issued bonds with various risk ratings, secured against mortgage loans, and supported by the credit rating agencies, relying specifically on the modern portfolio policy. The bonds with the lowest BBB rating bore the default risk up to 5–7 per cent of their face value, bonds with BB ratings bore risk up to a further 5 percent, and this continued all the way to bonds with AAA ratings, the risk free nature of which terminated only at 20 per cent or higher default. Following the modern portfolio theory, the credit rating agencies used the assumption that only less than 5 per cent of mortgage debtors would not be able to repay their debts, and the risk can be further mitigated with a portfolio containing a large number of mortgage loans.

However, the “animal spirit” of the issuers demanded more than that.³⁵ The riskiest mortgage agreements with the lowest ratings were taken out of the portfolios and put into new portfolios in order to obtain a higher rating. The CDO bonds were issued secured against

these loans. Credit rating agencies, such as Moody’s and S & P, which saw a huge business in the secondary mortgage bond craze, let themselves be convinced, based on the modern portfolio theory, that the default risks of sub-prime bonds in the same portfolio will cancel each other out, and therefore a lot of CDO-s were given AAA ratings, too.³⁶ Pension funds, as well as Japanese and European banks purchased these securities in good faith, believing that they were investing into bonds, which were as secure as the OECD papers. In this way, American mortgage bonds reached other countries of the world as ticking bombs, thus the latent American financial crisis escalated into a world-wide phenomenon.

DAVID XI LI'S GAUSSIAN COPULA FUNCTION

While working for JP Morgan Chase, *Li* published a study in 2000 under the title of *On default correlation: A copula function approach* in *The Journal of Fixed Income*. (In statistics, the Latin word copula means the correlation of the behaviour of two or more variables.) Based on Wall Street standards, he used relatively simple mathematics to model the default correlation without taking into account the former default data. Instead, he used the market prices of Credit Default Swaps (CDS) in the calculation of this correlation.

These days, investors have a choice: they either lend to borrowers, or sell credit default swaps (CDS) to investors, i.e. insurance against the same default borrowers. In this sense, the investment risk is a product, which is measurable, and for which insurance may be taken. Whichever transaction they choose, they earn regular income (interest or insurance premium), but if the borrower does not pay, they will lose a lot of money in both cases. Both business strategies result in similar income, but since an

unlimited number of credit default swaps³⁷ can be sold against each borrower, i.e. the supply of swaps is not limited in the same way as the supply of bonds, the CDS market grew particularly rapidly, and soon it became larger and more liquid than the bond market, on which it was based.

When the price of CDSs is rising, it means that the default risk has increased. Li's breakthrough was to use CDS market data instead of waiting until enough data on the number of actual defaults were collected, which hardly ever happens in the real world. In other words, Li's model used the prices instead of the actual default data, relying on the implicit assumption that the default risk is priced generally correctly by the financial markets, and especially correctly by the CDS markets. We can also say that in a way this assumption also reflects the efficient market theory.

Li also simplified the procedure to manage the problem: he did not calculate the almost infinite number of correlations between the loans forming the pool. He did not check what happened if the population of the pool increased, or if negative correlations were mixed up with positive correlations. The only important thing for him was to have a final correlation value, which is a pure simple figure, satisfying everyone and summarising everything.

Wall Street quants saw a huge business in Li's formulae. In the first step, they produced a huge amount of brand new securities with AAA ratings. The use of Li's copula procedure also meant that rating agencies, such as e.g., Moody's, or anybody else who intended to model the risk of a segment, no longer had to think about the rating of the underlying securities. Based on the correlation figure, they could easily receive an indicator showing how safe or risky a particular segment was.

Almost anything could be combined and classified into a bond with AAA rating – cor-

porate bonds, bank loans, mortgage securities, etc. These were the CDO-s, and the production procedure was "CDO squared", which doubled the number of CDO-s on each occasion. After a while, it was impossible to identify the securities, which formed the basis of the issue. By the end of 2001, the value of CDSs on the market reached USD 920 billion, which went up to more than USD 62 trillion by the end of 2007. In 2000, the CDO market was worth USD 275 billion, which increased to USD 4.7 trillion by 2006.

The CDO section of shareholding corporations only trusted Li's copula correlation model. This was the case despite the predictable damage. Even before Li's article was published, several people had warned about the instability of the correlations between financial quantities. In addition, Li's correlation is a constant value, which in fact should have followed mercury type movement. Although investors know that there are few activities on the financial market, which are not risky, there is nothing they hate more than uncertainty.³⁸ Consequently, the correlation indicator gained from the copula formulae gave them some reassurance.

Li's copula function was used for pricing mortgage-collateralised CDOs for hundreds of millions of USD. As CDS prices were used for calculating the correlation, they looked at the period in which the credit default swaps (CDSs) existed. The period when real estate prices soared was shorter than ten years. At that time, the credit default swap correlation indicators were very low. However, when the mortgage boom suddenly ended and house prices began to crash, the correlation indicators soared. The old saying was confirmed that if everybody acts the same way on the financial markets, it is a classical recipe for a bubble and its inevitable burst. On this market, everyone referred to the copula formulae, and when the copula-driven computer models fell apart, 'mea

culpa' excuses were made, the mortgage loans defaulted, banks lost trillions of dollars, and there was also a considerable threat to the survival of the global banking system.

GREED AND RISKING OF GOOD MORALS

We define moral risk as a special case of asymmetric information, when in a transaction one party has more information than the other. The party exempted from the risk generally knows more about the operation and intentions of the transaction than the party, who bears the negative consequences of the risk. More generally, moral risk appears when the party with more knowledge of the operation and intentions of a transaction does not behave fairly towards the other party who has less information, which may also have a negative impact on his prospect. It is clear that moral risk is very difficult to eliminate, because according to these definitions, it may be present almost everywhere in the daily relationships between people and institutions, not mentioning surveillance, tapping of phones, etc., which truly exceed the boundaries of good morals and simply fall in the category of crime.

The financial bailout of credit institutions by governments, central banks and other institutions may encourage risky lending in the future, if the risk-assuming institutions think that they will not need to bear the total loss. The "too large to default" credit institutions may approve more risky loans than smaller ones, because smaller ones are more prudent, as they cannot expect to be bailed out. These perverse encouragements may result in the concentration of the financial service industry into an oligopoly, and taxpayers often have to pick up part of the bill containing the consequences of the risky financial decisions of credit institutions. As *Dowd* (2009) says, moral risk is an inherent and inevitable attribute of the finan-

cial system and the economy, and in his opinion it had a major role in the development of the current financial crisis. *Summers* (2007) goes even further, when he talks about moral risk fundamentalism.

This crisis may have stemmed from the securitisation of the mortgage loans, which was the first financial activity on Wall Street that assumed considerable moral risk and finally led to the bankruptcy of Lehman. Many people identify it as the primary cause of the financial crisis of the subprime mortgage market, which occurred in 2007–2008.

Banks living on mortgage deals built their business strategy on home-buyers with low credit rating. This is why they eased their lending terms and closed their eyes to loan applications submitted with minimum or false documentation. The infamous *Ninja loans* appeared in 2008. (*No Income! No Job! No Assets!*) The subprime loans were offered with special installment payment preferences, at so-called *teaser rates*. In the first two years of repayment, most subprime loans had a low fixed rate, but this changed into a higher variable rate from the third year. The default of these loans was inevitable: many debtors were unable to repay them. While assets of property owners decreased with crashing real estate prices, the vicious spiral was reversed. As long as prices were rising, the value of real properties was increasing, which made repayment easier. As the captain of the Titanic would say: everything was hunky dory until the iceberg appeared. However, crashing prices devalued the real properties and made repayments more difficult. According to estimates, today approximately 15 percent of American property owners have a larger mortgage debt than the value of their real properties.

Hedge funds³⁹ were the first to recognise around 2005 that the CDOs were time bombs, therefore they purchased default insurance policies from banks for the most risky CDOs

with AAA ratings. As banks also saw a good deal in this, they sold the insurance policies and when they were sold out, they added new synthetic CDOs (created with new portfolios) into the insurance. They could do so without any problem, because real estate prices were still climbing and bankers felt safe. In fact, they were playing a very risky Ponzi scheme without punishment. Should default have occurred, they could still reschedule the loans or auction the residential properties.

Banks were not bothered by questionable credit ratings, because they put the securities into portfolios and sold them to investors in the form of bonds with higher ratings.⁴⁰ The more risky tranches of the portfolios, for which there was no demand, were sold as CDOs. These latest products of financial innovation were so new and complicated, as well as non-transparent that even bank managers could not understand them, but seeing definite profit, they gave in to their greed.

Interestingly, the ownership structure of the largest investment banks could also have contributed to the higher moral risk. This means that banks like Salomon Brothers, Goldman Sachs or Lehman Brothers were owned by the active managers, the partners. This shareholding structure practically secured the long-term shareholders' interests. Retiring partners could expect only a proportionate amount of the accumulated equity. Looking for ways to increase equity, some of the partners realised in the 1980s that they could not only⁴¹ earn huge amounts, but also raise external funds, if they listed their banks on the stock exchange. This idea was especially attractive for them, because by trading the raised funds, they earned higher commission in their business speculations without assuming any risk as shareholders.

Another factor increasing the moral risk was the own account trading of large investment banks. By 2000, most of their profits were earned from revenues of such tradings. Own

account trading was based on the recognition and exploitation of the pricing anomalies of the financial market, which is called arbitrage (risk free profit) in the financial jargon. E.g., if a share is underpriced on the futures market, then it should be sold and repurchased at a cheaper price on the futures market. Unsuspecting customers are often robbed on the specific deals in own account trading, or brokers use confidential information received from their customers. These deals also earned a lot of money for employed partners, who found it more difficult to say no than their partner predecessors. The securitisation of subprime mortgage loans and their sale as securities with AAA rating resulted in considerable risk free fee income, which also created an incentive for the employees in the form of distributed bonuses.

IS CHINA TRULY THE FUTURE?

The crisis is currently being evaluated. Theories of various schools confront each other and naturally reach different conclusions. *Richard Posner* of Chicago has strong doubts about market liberalism and thinks that the intervention of the American government again saved the world from a second Great Depression.⁴² *Gary Becker* does not agree with him: he thinks that markets generally function well, but the Fed was too passive and should have done more to prevent such a drastic fall in money supply.⁴³ He claims that new financial instruments, the derivative products are responsible for this situation. Neither their inventors, nor the parties trading with them understood clearly how derivatives should be assessed in various situations, this is why markets could not operate efficiently. In the future, a lot more government interventions will be needed to avoid similar crises, and a lot more needs to be revealed about the causes of the crisis – proposes Bekker, supported by many others.

The question is whether a financial institution in a bad shape should be bailed out only on the argument that “it is too large to go bankrupt.” Views on that vary a lot: Gary Bekker would not permit bailing out bankrupt banks, similarly to the bail-out of Continental Illinois or Chrysler in the past. If that were the case, we would not let the Darwin principle prevail. Although if “you find one butterfly that looks weird, you don’t say, Oh, Darwin was wrong after all!”, argues Fama.

According to Cochrane, finances must be integrated into macroeconomics. This is also supported by George Soros’ interpretation of the development of investment bubbles: bubbles always start in the real economy, then continue on the market where the investors and creditors operate. Prices of all products begin to rise, speculation boosts demand, hoping for a higher return, which further increases the prices that consume loans, etc. Macroeconomics can only think in terms of credit rates and fails to analyse the impacts of borrowing or the risk premium. *Robert Shiller* has been arguing for 30 years that psychology should also be involved in economic studies. Richard Posner is not the only person, with quite a few followers in Hungary, who have re-discovered Keynes and his economic policy recipes.

However, Keynesian economics failed its test in 1970, when inflation hit, accompanied with unemployment. It is unable to interpret stagflation. Each individual dollar spent by the government is saved by someone, because they keep one eye on their future tax burden. This is the *Ricardian equivalence hypothesis*, which causes many not to believe in incentive packages. A different approach is required for unemployment today, due to the specialised workforce. If an accountant is fired from a bank, how is going to build a road in Montana going to help him, argues Cochrane.

Is there a new need for the Glass–Steagall

law? As it is known, in the 30s of the last century, following the collapse of the banking system, commercial and investment banks were separated when this law entered into force. Commercial banks also traded a considerable volume of securities and when their prices began to fall, these banks also went bankrupt due to the crisis. As a result of the market liberalisation in the 80s, the difference between commercial and investment banks gradually disappeared again. By the ‘90s, they were merged again: practically recreating the situation of the 1920s. The commercial activities of banks extended to investment activities and new financial products created new challenges for them, because even their risk management departments could not fully understand the values and marketability of investments. When real estate prices began to fall, they realised it as they had to write off their rapidly devaluating securities as a loss, which imposed a risk on the entire financial system. This is why Fed had to take action fast, instructing Fannie Mae and Freddie Mac to purchase the securities.

Is it the end of corporate governance?, ask many researchers. They see the problem in shareholding corporations. One of the earliest and best critical remark about shareholding corporations was made by *Adam Smith*. His classic book, the *Wealth of Nations* states the following: “The directors of such companies [...] being the managers rather of other people’s money rather than of their own, it cannot well be expected that they should watch over it with the same anxious vigilance. Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company.” (Smith, 1776; quoted by Dowd, 2009, p. 153)

The problem stems from limited liability, which enables investors and corporate managers to enjoy all positive benefits of their risk assumption and be affected by any negative disadvantage thereof only to a limited extent.

Campbell and *Griffin* stated the following at the dawn of the Enron scandal: “Exceptionally, now we must say that the chief executive officer of large public companies are heavily exposed to the economic risk of bankruptcy, and are more or less completely closed up due to fear for the most fundamental market pressure, personal bankruptcy. By in this way distancing directors from the down-side of their decisions, the public company based on incorporation and limited liability severely handicaps or even eliminates the core function of the market.” (*Campbell and Griffin*, 2006; quoted by *Dowd*, 2009, p. 153.) These problems were anticipated more than 150 years ago by those who opposed the Victorian companies legislation that granted limited liability. To quote one contemporary, who was the author of a successful company law textbook: “The Law of Partnership hitherto has been[...], that he who acts through an agent should be responsible for his agent’s acts, and that he who shares the profits of an enterprise ought also to be subject to its losses; that there is a moral obligation, which it is the duty of the laws of a civilised nation to enforce, to pay debts, perform contracts and make reparation for wrongs. Limited Liability is founded on the opposite principle” (*Cox*, 1857; quoted by *Dowd*, 2009, p. 154)

What could be a real alternative to withdrawn limited liability? According to *Soros*, global financial regulation could be a solution without any withdrawal, because financial markets have already become global. The Basle Accord, which sets out an obligation for the banks to keep minimum reserves, points to the same direction. *Mishkin* (2009) highlights that financial globalisation, with satisfactory regulations, enhances competition in developed countries and gives more space to market processes, reducing the concentration of government and local private interests (e.g., *amakudari* in Japan), and it can be another important factor in global economic growth,

overcoming poverty and primarily in emerging market economies. *Summers* (2008) and *Csaba* (2010) also argue for regulation. Others would introduce more stringent penalties. Some consider the current banks are unsuitable for regulation, due to their large sizes, and would like to break them up into smaller units. *Diamond and Rajan* (2010) propose some potential interventions in their study, which could be effective, if they clarify the correlation between solvency, liquidity and lending.

The question is how an already established management structure can be improved with minor additions, to what extent researchers and economic politicians, who socialised to date on the above-analysed theories can take up a new approach and to what extent they are bound by old ideas, some of which could easily lead to a financial crisis, as it turned out recently. And these ideas have the same poisonous effect as CDOs. They entangle the financial markets of the developed world, leading international theoretical journals and the moderate financial and economic papers, i.e. very simply they entrap any new concept or idea. It is worth taking a look at the website of the Bank of Japan or ECB, or pick up the *Financial Times* or *The Economist*. The conferences of these banks are almost always attended by the same economists, whose articles can be read in the journals referred to above, and are interviewed by the global economic-financial papers, although they do not agree on everything. It seems that we hear the same arguments and ideas all over again, contradicting to each other. Some people think that there is very little chance for any renewal, and we have not seen any deeper analysis of the current crisis yet.

The situation will most probably not be made easier if more than 25 years later we read the publications by *Hyman Minsky*, which nobody was interested in at the time, and announce to the world that *Minsky* already predicted a potential crisis of the market econ-

omy in the 1970s. (Wray, 2008) It could not work, because the world economy at the time was completely different, financial products were not as diversified as they are now, and there was no so much immoral risk assumption on the international financial markets as today.

Nobody is dissatisfied with the market itself, but with it operates or the way its is operated. More and more people, who are truly worried about global economy, choose turn to China, the world's second largest economy, which shows a new face to the world. It is successfully progressing in establishing a market economy, without giving up its own political structure. Export incentives have a surprisingly successful impact on the exchange rate of the yuan, the impacts of the global financial crisis are managed relatively well by China and it is also interested in regulation and supervision, aimed at the mitigation of the global financial risks⁴⁴. Another argument for China is that its economic philosophy has not yet been fully influenced by the Keynesian or the liberal economic policy. We should follow the development of Chinese economy, learn and adopt any novelties that are useful for the global economy, primarily its managing tools in the real and financial sectors.⁴⁵ At the same time, we must work on developing models and risk calculation procedures that are closer to reality, on the organic transformation of the Western banking system, and on its more extensive and effective regulation and production.

LESSONS FOR THE HUNGARIAN ECONOMIC POLICY

Not withstanding the strict criteria of comparing the two countries, let us take a quick look, only qualitatively, at cash flows, primarily in terms of capital investments and consumption during the last eight years of the American and Hungarian economies. The first surprising

similarity is that consumption has grown in both countries: in the US at the expense of capital investments enhancing the efficiency of certain sectors (motor industry, steel production, etc.), and in Hungary instead of capital investments, aimed at the structural transformation of large distribution systems. While the increased consumption of Americans was financed by savings of foreign, primarily Chinese investors, held in American banks, in Hungary the same trend was financed by loans taken from the EU, the IMF and other countries, and in some cases by extremely expensive “*carry trades*”⁴⁶. “Cheap” loans made home buying easier in both countries, which finally ended sadly for many households. While Americans fell victim to the extremely sophisticated predatory credit system of their own banks, Hungarians became victims of foreign currency, primarily CHF-based, bad Hungarian loan products. While in the US the real estate price bubbles led to the financial crisis, Hungary had to face severe liquidity problems due to the devaluation of its own currency. And finally in both countries, excessive liberal economic policy was the main factor (with different weight), which led to illiquidity and the collapse of the credit market.

The abovementioned dry facts demonstrate the economic policy errors, especially in terms of the Hungarian economy. Despite all this, can we learn anything from the crisis? What can be interesting in terms of the Hungarian economy? According to the analyses of this study, the most important lesson is that the financial system and real economic processes need to be analysed together, together with the strict regulation of the markets. The current Fidesz government has put in place some of the conditions for it because there is no separate Ministry of Finance, but real economy processes and financial matters are managed by one ministry, the Ministry of National Economy. The requirements of this principle cannot be ignored in the activities of the Hungarian

National Bank either. The National Bank must prepare models and empiric analyses to support its monetary decisions, which connect the real economy and the financial sector. DSGE models are not suitable for this, as it was explained before. Analysing individual financial variables (e.g., price or interest rate) of the time series without any structure and making projections, based on these analyses create even more doubt about the unilateral obsolete monetary policy. As the financial system is not connected to a multilateral and empirical structural macroeconomic analysis, the decisions of the Monetary Council are often not in line with the conditions of real economy growth. We must learn to conduct an effective economic policy even in situations without or only nearing an equilibri-

um.⁴⁷ The analyses of this study suggest that this is the latest economic thesis, and the condition of a successful economic policy these days. More specifically, rising real estate prices and home-building activities did not decrease, but in fact increased the demand for homes and mortgage loans during the development of the crisis, which is contrary to the equilibrium theories of the previous economic schools. What happened here was that the disequilibrium of the market was further intensified by the increase in more favourable mortgage loans. In addition to the joint management of real and financial processes, more detailed and up-to-date understanding of the international financial institutional system, both in theory and in practice, is also needed for modern economic management.

NOTES

¹ The author wishes to thank *László Csaba* for his valuable remarks and recommendations, concerning this study. The author's e-mail address: jozsef.moczar@uni-corvinus.hu. The usual remark applies to any potential error. The usual remark applies to any potential error.

² On Wall Street, these *sub prime mortgages* were called *reference securities* as they sounded better.

³ Apart from American banks and *hedge funds*, such as, e.g., Lehman Brothers, Goldman Sachs, Salomon Brothers, J. P. Morgan, Citibank, Weels Fargo, AIG FP and Bear Stearns, several foreign banks operating on Wall Street, including the Swiss UBS, the German Deutsche Bank, the English Barclay's, were also involved in these deals. Their global branch networks are equally situated in developed countries, e.g., in Japan, the United Kingdom, Germany, as well as in the emerging China, South Korea, etc.

⁴ The English equivalent of the Hungarian definitions of various financial innovation concepts and new financial products are also provided in brackets in order to clarify the translations published to date.

⁵ See the arguments by Eugene Fama or John Cochrane in Cassidy (2010)

⁶ Obviously, this can only be done within certain limitations due to the Maastricht criteria. However, the question itself points towards the lack of these limitations, i.e., various EU Member States can rely on such assistance within the EU only to a limited extent.

⁷ These are analysed and described by Báger (2010) and Király et al. (2008)

⁸ Here the classic meaning of *short* is short position: the investor sells securities, borrowed from a brokerage firm on the market agreeing to return it by a specific date, and therefore he must repurchase them on the market by then. If during this period the price of the securities decreases, the investor can repurchase it at a lower price and earns profit. Otherwise he has a loss. [In other words, the short position should not be mistaken for futures transactions.] In a different correlation, e.g., the Hungarian currency loans are also in the short, as they aimed at short positions, which brought a loss for them.

⁹ However, according to the Italian Finance Minister, Giulio Tremonti, Pope Benedict the 16th was the first to predict a crisis in the global financial system as early as in 1985. [Bloomberg News, Nov 20, 2008, quoted by Lewis (2010, p. 226)]

- ¹⁰ Fama also confirms this. According to him, the Chinese supplied capital to the world, which the US consumed without any consideration. [See in Cassidy (2010)]
- ¹¹ See Losoncz – Nagy (2010)
- ¹² For Standard & Poor's, AAA was the best rating, while Moody's used Aaa for it. In this paper we follow the former one.
- ¹³ Synthetic CDOs contained only CDSs which involved *subprime mortgage bonds* with BBB rating.
- ¹⁴ There is interesting correlation between predatory lending and predatory pricing. The latter is analysed intensively by Török (2010) with a theoretical and empirical approach.
- ¹⁵ If we try to capture this correlation with a (even limited) Lotka-Volterra model (see Móczár (2008)) then, although loans and liquidity vary in cycles, no crisis occurs ever and we move along a dynamic balance course like mercury.
- ¹⁶ Suddenly, property owners had negative equity: the net real properties of households turned into a debt, because the principal debt of their loans was higher than the market value of their real properties. By 2008, the number of such households reached 8.8 million.
- ¹⁷ For more details, see Móczár (2008, pp. 196–199)
- ¹⁸ See Losoncz – Nagy (2010)
- ¹⁹ Fannie Mae (Federal National Mortgage Association) was established in 1938, Freddie Mac (Federal Home Loan Mortgage Corporation) was founded in 1970 for the trade, securitisation and guarantees of mortgage loans. Both institutions began as government sponsored enterprises (Government Sponsored Enterprise – GSE). The first stopped being a public company in 1968 and was followed by the other in 1971; they both became investment banks only. Fannie Mae issued the MBSs, and Freddie Mac issued participation certificates (PC) secured against mortgage loans without state guarantees. [A separate company, Ginnie Mae (Government National Mortgage Association) secured and guaranteed them.] In 1995, both investment companies were licensed to trade in subprime mortgage loans. As the crisis deepened, they were transferred under state supervision on 7 September 2008, which made it possible for the Fed to issue such instructions. [The mortgage institutions are described in detail in a book by Fabozzi – Modigliani (1992).]
- ²⁰ Obviously, the US Security and Exchange Commission (SEC) should also be criticised for this.
- ²¹ See Cassidy (2010)
- ²² For details see Móczár (2010/a)
- ²³ Bachelier (1900) observed the prices of securities listed on the stock exchange and found, as the first contribution to the currently mainstream behavioural finance, that they did not have any behaviour, suitable for prediction. In 1933, Alfred Cowles reached a similar conclusion (Móczár, 2008, p. 290), by stating that the exact movement of the stock market could not be predicted. In 1953, a British statistician, Maurice Kendall looked at the prices of shares and consumer goods and found no systematic changes in their random movement. In the 1950s, mathematician Leonard Jimmie Savage found the long forgotten work of Bachelier in a library and asked his mathematician friends on a postcard whether they had heard of Bachelier. One postcard reached Samuelson, who soon laid down the foundation of his efficient market hypothesis.
- ²⁴ See Móczár (2008)
- ²⁵ The efficient market is a very vague concept itself, therefore it should be put into some structure for an empirical study. The empirical testing of market efficiency also means the testing of this structure. This is called the joint hypothesis problem. As the definition of the efficient market hypothesis is not constructive, only the specific models can be tested and the general description of efficiency cannot. Testing requires an equilibrium model of efficiency, investor conduct and information structure. Market equilibrium is described with expectations based on the sets of information, prices were described with the *martingales* related to the information series, while the yields following each other periodically and yields independent of the set of information were described with the random walk model. The analysis of these exceeds the framework of this study.
- ²⁶ Fama's definition was followed by several versions. E.g., Michael Jensen (1978) gave the fol-

lowing definition for the efficient market: “Prices reflect information to the point where the marginal benefits of acting on information do not exceed the marginal costs.”

²⁷ The investment successes of Warren Buffet, John Templeton, John Neff etc. strongly contradict this statement. Samuelson commented this as follows (1989, pp. 4–5): “Those lucky money managers who happen in any period to beat the comprehensive averages in total return seem primarily to have been merely lucky (...) broadly speaking, the case for efficient markets is a bit stronger in 1989 than it was in 1974.” Then he adds: “On the whole, I side with Shiller and Modigliani and am prepared to doubt Macro Market Efficiency.” (quoted by Min Deng, 2009)

²⁸ Ibid.

²⁹ See Móczár (2008)

³⁰ However, even if the financial sector could be organically integrated into the model, it would still not be suitable for predicting crises. The simple reason is that the model is an equilibrium model, which would definitely fail in a test using data of extremely unstable money markets. Colander et al (2008) reached similar conclusions in their study.

³¹ Naturally, Fama does not admit this. In his opinion, what happened on the real estate lending markets was recession and not a financial crisis, and it was a consequence of the government policy and not the failure of the market. It has been confirmed that bonds were not viable financing instruments, and he considers this to be consistent with market efficiency. (For more details, see Cassidy (2010)

³² See The Guardian, December 20, 2002

³³ Here we do not deal with the CAPM and the so-called value at risk (VaR-) models. The premises and objectives of the models are described by Móczár (2008). We also note that the Varga – Rappai (1997) study presents the applicability of CAPM on the Hungarian Stock Exchange.

³⁴ According to standard studies, the efficient frontier may be differentiated. Dybvig (1984) showed that if there is a kink on the efficient frontier, the expected yields on the securities of the related

portfolio are identical, but the statement cannot be reversed. Vörös et al. (1999) gave a sufficient condition for the existence of the kinks. They wrote a quadratic programming task for their analyses to minimise the risk level depending on the expected yield. With the quadratic target function, they accept the above anomaly, yet they do not recognise that risk would require asymmetric measurement. We should notice that these analyses consider the risk a dependent variable, while in the standard model the yield is the depending variable. For mathematical considerations both are correct, because both involve primal dual algorithms and both approaches can be sufficiently justified also economically, accepting the symmetry. The question is whether the positive definite condition based on the co-variance matrix is enough to make sure that the target function also contains the systematic risk. The other interesting feature of the quadratic programming task written for the portfolio with risk securities, and not covered by the authors, is that the conditions of the task reflect exactly the definition of the efficient market given by Eugene Fama (1970). Managing the problem can come closer to reality, if the programming task is written in an explicit stochastic form.

³⁵ It should be noted that according to Deng (2009, p. 11) Keynes was mistaken to state that the movement of share prices was motivated by the “animal spirit”. In his opinion, the movement of share prices reflected the balance between the investors’ reality-based aspirations and their expectations.

³⁶ The rating of securities was decided based on FICO points. The FICO scoring system was developed by the Fair Isaac Corporation in the 1950-s: the highest score is 850, the lowest is 300. The US median was 723. Moody’s and S & P did not request the FICO points of creditors individually, only using the average FICO points of a pool for their ratings. If it reached 615, then all loans contained in the pool were granted AAA ratings. And this average was calculated from low FICO points of almost uncreditworthy creditors and the FICO points of highly creditworthy creditors. In 2007, more stringency was introduced into the rating system. (For more details, see Lewis, 2010, pp. 99–101)

³⁷ *Swap* means a swap deal, but in the Hungarian literature it is referred to as a swap. There are vari-

ous types of swaps, e.g., an *interest rate swap* means that one participant of the deal pays a fixed interest rate, but still the other one pays a variable rate. According to the *pay-as-you-go credit default swap*, the insurance buyer does not pay the premium in one lump sum, if and when all mortgages go bankrupt, only gradually, as the individual home owners become insolvent.

³⁸ The introduction of risk and uncertainty into economics is related to Knight (1921). Bélyácz (2010), focusing on the theory of Ramsey (1926) and Keynes (1921, 1936) gives a very deep philosophical and partly psychological synthesis of these concepts, embedded in the latest results. At the same time, it should also be noted that unfortunately the author did not cover the logical relationship between subjective probability and inductive logic, or the book published by Rudolf Carnap in 1950 under the title of *Logical Foundations of Probability*, or the results of Ludwig Wittgenstein (1918). (About those, see Móczár, 2008, pp. 78–80) It is clear from the article though that what is important for us now is that risk is measurable with risk premium, and uncertainty cannot be measured, it falls in the category of a surprise, which may even be shocking. In fact, this is the reason why investors are basically afraid of any uncertainty.

³⁹ The importance of *hedge funds* grew in the financial sector in the 1990s. One of the first ones, Quantum was founded by George Soros in 1993. Compared to traditional investment funds (*mutual funds*), hedge funds follow an aggressive investment strategy (high leverage, short and long positions, futures and options both on national and foreign markets), and can manage the funds of no more than 100 rich people under more lenient supervisory control. Hedge fund investments have low liquidity, because they work with a minimum one-year investment period. According to estimates, by 2008 the assets of hedge funds reached USD 2,500,000 billion.

⁴⁰ Employees of credit rating agencies are very similar to public employees, primarily because they are underpaid. Consequently, most of them did their best to move on to a Wall Street company, for which they assisted companies turning to them in these manipulations. (Lewis, 2010)

⁴¹ And in fact they pocketed incredible amounts. Dowd (2009) reported in detail on the most

extreme cases. Here we only refer to the remuneration of Richard S. Fuld Jr., CEO of the bankrupt Lehman Brothers: Between 2000 and 2007, he earned USD 350 million (roughly HUF 7 billion). At his Congress hearing, he considered it rather natural that he deserved that much for his work, even if the “result of his efforts” cost USD 700 billion for the taxpayers when they had to save the economy. The then US Finance Secretary, Henry Paulson, convinced the Congress about it in September 2008. This is how TARP (Troubled Asset Relief Program) was established.

⁴² See Cassidy (2010). Although it had to be done, because the crisis was caused by the American financial system, which also relates to Posner’s opinion.

⁴³ Ibid.

⁴⁴ See Inotai (2009, pp. 24–28)

⁴⁵ Some people think that the future of the international financial system will be determined by the US and China together. “These two countries keep each other hostages, as American overconsumption and Chinese overproduction had already assumed each other. By now, this mutual dependence has extended to the financial and monetary sector. The American dollar can retain its central role only and to an extent, if and as much as China is willing to support the American economy (also including the huge economy boosting projects). At present, China does not have any other reasonable views, but to continue to support the dollar.” (Inotai, *ibid.*, p. 30.) Of course the situation is not so simple because China has huge USD reserves. Consequently, it is also interested in protecting the dollar, but with speculation it may also turn the yuan into the leading currency. The question is whether the US would be able to prevent this using its substantial gold reserves. Another question is for how long the huge US budget deficit can be maintained. (This is analysed by Bertant et.al., 2009) Furthermore, we must not forget Japan either, although today it seems complies with the requests of the Fed. Consequently, the international financial situation is extremely complicated and fragile. A new global financial crisis may break out at any time, potentially leading to severe economic conflicts.

⁴⁶ Carry trade: primarily used by the *hedge funds*. A creditworthy investor takes a loan in a country

where interest rates are low, then invests this amount in another country where a high return can be achieved, even from government securities. In other words, creditworthiness is also a product, which may generate profit.

⁴⁷ This should not be confused with the short-lived disequilibrium theory of 1980s, which mostly expressed its models in static disequilibrium systems. The disequilibrium models and theories are described by Móczár (2008). Another direction is shown by Aoki – Yoshikawa (2007).

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László Ohnsorge-Szabó

The Great Depression – Retro

Part 1

T*This study was written because the economic crisis of 2008 had been compared by many, including renowned economic experts, with the one in 1929–1933. Dealing with the latest literature on the subject, I drew the following surprising lessons for myself. Firstly, the literature available for the Hungarian professional public is rather poor compared to what can be found out from leading foreign research on the subject that combine economic theory and history. Secondly, the thesis that the lesson has been drawn from the historical experience of the Great Depression is only partly true. Only one of the reasons for this incompleteness is that ‘retrograde’ institutional changes took place. The other reason is that there are really serious question marks, which can be considered epistemological, concerning the way the Great Depression evolved and ended. In other words, it is sensible to treat our knowledge of the events of that time with proper humility, considering its limits; it does not hurt to be aware of the puzzles that still exist. One should be restrained when harping on the question ‘Can it happen again?’. I believe that one can better understand this lesson, if I do not tell the new, linear story that can be reconstructed according to the new framework of attitude, but I present the difference between the earlier and newer approaches in connection with individual problems.*

This study presents the paradigm of interpreting the Great Depression that can be connected to the

names of Kindleberger, Temin and Eichengreen. These authors are far from agreeing on everything, but an important common factor is that they emphasise the global context of the crisis, the problematic nature of causality, the embeddedness of economic phenomena and measures in a framework and that they can only be understood within that framework, as well as the close interrelationship and inseparability of the financial-economic and political aspects of events. The comprehension focuses on the framework (regime), rather than on the developments in macroeconomic variables that can be found in textbooks (consumption, investment, money supply, demand for money etc.), i.e. it focuses on the system of the actions and situation assessment by economic and political agents and their interactions. Moreover, this regime seems to be more extensive than the monetary or fiscal policies of national states, and can only be interpreted in the interrelationships among global flows and political cooperation.

LIMITS OF UNDERSTANDING THE GREAT DEPRESSION

The attitude represented in this study is different from the approach of macro textbooks that suggests an arranged nature of our knowledge, typically moving the IS-LM curves (for their

criticism, see Temin, 1976, page 11 and Kindleberger, 1986, p. 5). It diverges from the Marxist schemes using the *clear-for-themselves interests* of groups believed to be identified sociologically (the interests of capitalists or the financial oligarchy) for explanation (Varga, 1978, pp. 323, 385 and 440–441). It also goes beyond the point of view suggested by the classical work by *Friedman* and *Schwartz* that economic theory was able to clearly identify the reasons for the Great Depression and the defects in system control, as a result of which we possess, or at least may possess, the philosophers' stone to avoid the evolution of similar crises.¹

Reading the literature about the Great Depression is excellently suitable to make us realise the *problematic character of the notion of causality* again, which seems to be simple in everyday life but always represents a challenge for philosophers, in connection with understanding a given historical period that is very exciting in terms of economic theory as well. Researchers representing different schools named different reasons. One may 'select' from them on the basis of one's preconception, preliminary studies or other factors, or may be puzzled because of this variety. One might assume the point of view that each explanation contains 'a piece of the truth', and that it is not worth looking for one final reason. (Botos, 1986, p. 341 ff.) In this respect, I consider Kindleberger's (1986, p. 6) attitude as authoritative. He states that one thing is to identify factors that are possible reasons for economic problems, and another no less important question is why the system was unable to give an adequate answer to them with automatic, market correction mechanisms or with adjustment measures of governing authorities. It includes the fact that perfectly exogenous, necessary and sufficient reasons entailing unambiguous consequences can hardly be found. Reasons like this especially do not exist in the world of

social-economic events, but problems of an origin that is hard to trace back and pose a challenge appear as a surprise to the authorities; it also means that these problems exert their effect only in the given historical situation, through the answers given to them according to theoretical and interest schemes existing in an arrangement in line with defined institutional as well as political and power relations.

A *positive* consequence of the theory of rational expectations, which is useful in the interpretation of the Great Depression as well, is the distinction between the *regime* and *individual* economic policy measures (raising the key rate, deficit financing): the people and economic agents do not react to individual, isolated actions of government; they have assumptions regarding authorities' efforts that have significance beyond individual measures. The *proceeds of the theory of rational expectations* is that it calls the attention to the *regime* that justifies *certain concrete* actions and decisions of national authorities, and affects the outcome of such actions and decisions. With the transformation of the system, the impact of the same actions and decisions becomes fundamentally different, or even opposite, than earlier, embedded in another framework. (Temin, 1989, p. 5) This makes it impossible to apply universal causality schemes in understanding as well as to provide general recipes that can mechanically be issued when giving economic advice. An important element of the theory of rational expectations – although in fact the Keynesian perception of the importance of expectations has already also reacted to it – is the interaction between economic agents and economic management (the state and the central bank).

At the same time, one may *dispute* the assumption of rational expectations that, on the one hand, the government and the authorities have a clear conception of the regime and their task is to convince the private sphere to keep to it and, on the other hand, that the pri-

vate sphere has a similarly clear set of decision-making rules, from which it ‘pulls out’ one, depending on the economic policy framework represented by the government, and acts accordingly. This is not the way regimes come into being, even if sometimes the contours of a regime become visible from the course of events.² The government does not have a clear notion of the new regime, and cannot see why the old one was problematic either; it progresses forward, or sometimes steps back, on the basis of (confused) impulses coming from theoretical and political interest groups that argue with one another. The events of the Great Depression confirmed this pattern. The signals and feedback coming from the players of the private sphere, which are otherwise also based on unstable convictions, play an important role in developing the new regime: this is not about forcing a pre-conceived regime through the expectations of the passive private sphere; on the other hand, the expectations of economic agents also change, not to mention the differences between their knowledge, expectations and interests as well as influence on the course of events. There is no single equilibrium that should only be found in this process; something system-like evolves in the interaction of economy and politics that has an unpredictable outcome. (Temin, 1989, p. 132; cf. Botos, 1987, p. 57) The problem with Sargent’s concept of a regime is that it narrows down the features that allow the description of a regime, for example the method of deficit financing, upon the examination of which one may speak about changing the regime, or it mentions overly general things: preferences of the private sphere and production technique. (Sargent, 2005, pp. 19–24) Private players are able to put their trust in more than one regime;³ therefore, a government’s economic policy has ample room for manoeuvre. There are many serious debates between economic agents as well as social and political groups (whether in the pri-

vate sphere or the regulatory/public sphere); there is an ongoing fight of concepts and interests, where the details that would facilitate understanding are often missing, for example, when we examine the motivation of the US economic policy that foiled the World Economic Conference in 1933. Temin (1989, pp. 85–91) rightly rejects the idea that stakeholders’ expectations are well-founded projections (‘informed predictions’) that equal the – ‘relevant’ – theory to be applied. Exactly, *the always recurring problem is what the relevant theory is*. Ordinary people of a given era do not think the way we do here and now, and their way of thinking is also different from that of – today’s or yesterday’s – economists. The regime also means ideology and mass beliefs as well as the institutions functioning within their frameworks. Emphasising the conviction of the latter, the crowd, the population (the economic actors) (in addition to the market) points out the significance of democracy and public opinion.

The reason and explanation, if there is any at all, for the crisis and its unprecedented magnitude and protraction should not be interpreted at the level of *individual* steps taken by the authorities (for example, the tightening of monetary policy in a given year, the slight tightening of the Fed in 1929), but in the features of the functioning of the *regime* and in the attitude of the authorities towards this regime. Finding the solutions did not mean the application of recipes that lead to success under all circumstances, but that the authorities were able to reevaluate – even if not at all with the ability of completeness and sure comprehension – the context in which the measures have an effect, and, *all things considered*, to contribute to an abatement of the problems (unemployment, economic recession), although not necessarily with each partial measure. In this case the nature of the decision maker’s *responsibility* is fundamentally different from what Friedman

missed at the Fed: it is not that the decision maker failed to carry out an understood and known, proper, routine-like action, but it shows the lack of a kind of intellectual ability, of one that is supported by the strength of the regime. Intellectual ability or the lack of it is mainly a collective thing; it is not possible to terminate the lack thereof individually, although the position of the individual is very important here. (Cf. Eichengreen, 1992, p. 17)⁴

One of the two main schools of research of the Great Depression prevalent in the 1970s is the *spending* explanation of the crisis. This explanation dominated after the Second World War and referred to *Keynes*. The other, *monetarist* one is its alternative, related to Friedman. (Temin, 1976, pp. 174–176) The authors used by us as leaders are sceptical about their arguments and explanations. In one of the interpretations, the monetarist and spending theory tries to explain the phenomenon with a unicausal, single factor (Kindleberger, 1986, p. 4), while according to the other it relies on the unclarified notion of causality. Friedman was looking for *solutions* to the crisis that were different from the ones found by his contemporaries, which suppressed and misguided understanding. He disregarded the factors that were exogenous for the financial authority and the possibility that the clarification of the reasons for the crisis may at least theoretically be independent of the proposed cure (which, at the same time, also means that he finds the reason where he sees the lack of the cure).⁵ He did not take account of important consequences of implementing the proposed cure either; for example, that the monetary expansion proposed in order to manage the bank panic or the application of open-market operations would have most probably meant the termination of the international monetary framework, the gold standard.⁶ Which, of course, is a *theoretical* possibility for politics, but in terms of its magnitude this matter has a greater weight and affects more stakeholders

than the usual monetary policy decisions. It raises the issue of global, intergovernmental cooperation. Friedman, from the comfortable position of the *ceteris paribus* condition, assumes the constancy of the behaviour of economic agents, although it can hardly be assumed that actors would not have changed their behaviour as a result of the monetary measures applying Friedman's cure. The contemporary authorities had to face a number of unexpected and unpredictable reactions. This is the reason why Friedman and Schwartz considered the increase of money supply a suitable solution for all the problems that arose in the years of the crisis, as they disregarded the mechanisms that prevail independently of authorities' measures and the reactions of economic actors to authorities' measures. They assumed in an implicit manner that even if such reactions existed, the authority would be – or would have been – able to offset them through the means at their disposal for liquidity expansion.

Friedman and Schwartz rather only hinted at exogenous factors. In the case of Friedman and Schwartz the factors of money supply and demand that are partly independent of one another become subordinated to money supply, and the autonomy of developments in income becomes terminated by the use of the technical term 'money stock', in which, of course, the ex post congruence between money supply and demand is expressed, just the *really interesting ex ante aspects* and with them the expectations concerning the future *get lost*.⁷ In their justification, Friedman and his followers bring up arguments that are contrary to the facts. For example, if the Fed had not tightened and had not reduced money supply in 1928–1929, the recession at the end of 1929 would not have taken place in the USA, but they do not, and cannot, claim that the decline in money stock *caused* the fall in production and prices. *Namely, contrafactuals do not actually prove anything*; contrafactuals, as shown by

their name, are not about facts, they are not explanations of facts. The absence of the cure is not the same as the reason for the illness. (Temin, 1976, p. 14–30)

In addition to the contrafactuals, Friedman and Schwartz had a penchant for mentioning the correlation of certain phenomena and their simultaneous appearance, for example, when they noted that ‘the bank crisis is a remarkable attribute of the (1932) recession’. *Of course, on the basis of the correlation it cannot be decided what the cause and what the consequence is; nevertheless, the authors – furtively – take the co-movement as a proof of the ability of the money stock to influence income.*⁸

Problems arose not only in connection with Friedman’s monetarist theory, but also with regard to the spending theories following in the presumed footsteps of Keynes. In the econometric analyses following Keynes, the decline in investment turns to a fall in income. The interest rate spread above risk-free investments did not display any significant increase during the crisis, and the developments in long-term interest rates were hardly explained by the developments in short-term ones. Therefore, investment *seemed to be insensitive to monetary conditions*. The fall in incomes seemed to be independent of the financial sector. Keynes’ followers attributed the decline in the demand for investment to the ‘deterioration in future business prospects’. The parameter values estimated with their models for 1929 significantly deviated from the actual values, which they ‘concealed’ in a sort of artificial manner, by including a quasi-dummy for this year. (Temin, 1976, pp. 31–50) From *A Treatise on Money* by Keynes they gathered that in the pre-crisis period the magnitude of investment was ‘excessive’, which turned to a shortage of investment in the period of expensive money,⁹ and from the *General Theory* that the marginal efficiency of capital declined because of the significant earlier investment. Although in the *General*

Theory Keynes said that it is difficult to speak about investment overshooting in an ‘absolute’ sense irrespective of the interest rate policy of the monetary authority and its monetary policy in a wider sense when there was no shortage of labour in the USA in 1928–1929, it would have been possible to develop the condition of homes, the transport sector and public services, and there were investment opportunities in agriculture as well. At the same time he also expressed, *suggesting some kind of mechanical causality*, that investors ‘could only (my own italics – L. O-Sz.) expect rapidly declining yields’, *in view of the investment boom of the previous five years*. That is, he also emphasised the *deterioration in profitable business expectations*. (Keynes, 1965, pp. 340, 345–347)¹⁰

This argumentation of Keynes’ theory regarding the ‘deterioration in future business prospects’ did not prove sufficiently convincing. Especially, because *it is unlikely that the unprecedented depth of the crisis can be deduced from it*. The idea arose that the deterioration in future business prospects hindered investment through the fall in stock exchange prices. Indeed, recent researches suggest that the fall in stock market prices in the USA was greater than the decline observed in dividend flows; nevertheless, the crash was not a cataclysmical change. (Temin, 1989, p. 45)¹¹ Several facts contradict the dramatic and noteworthy deterioration in expectations at the onset of the crisis. In Temin’s opinion there is no evidence that expectations turned more gloomy in the USA before the end of 1930. Although it is often mentioned ironically that Hoover described the business life of his country as firm and sound before the stock market crash of 1929. (Kaposi, 1998, p. 32) However, this conviction was not shaken by the events for at least one year. Therefore, it is not possible to prove the relationship between macroeconomic data and the decline in business confidence, unless the thing is that the shaking of confidence subsequently

gave another meaning to the data. Although it is usual to interpret the crisis of 1929 and the stock market crash as the collapse of a world, in fact, a strong consensus prevailed among contemporaries in those months regarding the possibility of a rapid recovery. Not only the authority, which aimed at it knowingly, but the wider professional public opinion as well interpreted the stock market crash as a justified reaction to unreasonable speculation. In the middle of November 1929, business people interviewed by *Business Week* expected a 7 per cent decline, and only a 2 per cent decline two weeks later. In May 1930, Hoover believed that the worst was over for the economy. (Kindleberger, 1986, p. 117) In July 1930, the low inventories, the rapid bank loan expansion (in international loans as well) and the low import prices all seemed to be the early signs of a recovery for the general public. Credit rating agencies were not pessimistic about the future either: the rating of corporate bonds – excluding the effect of the maturing and newly issued ones – deteriorated to a lesser extent in 1930 than in 1921 or 1937, which were also considered crisis years. The spreads – the interest rate differentials between both the long- and short-term as well as the risky and risk-free securities – started to increase as late as in 1930–1931; then not only the premium of certain specific securities increased, but of the whole rating class as well, which suggests the appearance of system-level risks like the business cycle. (Temin, 1976, pp. 63–80 and 105–108) Well after the Second World War, at the end of the 80s, modelers (*Dominguez, Fair and Shapiro*), equipped with the then best statistical means, attempted to find out whether they would have been able to predict the deepening of the crisis using the database available for the analysts of the 1920s, moreover, extending it until 1907 retroactively. Their conclusion was the same as that of contemporary researchers (Harvard Economic Service and *Irving Fisher* at Yale), i.e.

that deflation would end soon (Temin, 1989, pp. 58–59; cf. Mankiw, 1999, p. 393). In Kindleberger's opinion the most important effect of the stock market crash was not the deterioration in US economic agents' expectations, but that it reinforced the already downward spiral of global commodity prices.¹² Although following the crash the Fed started easing, deflationary forces had become stronger by then.

For a long time, expectations had not reflected the unusually widespread recession – which was more threatening than the crises following the First and prior to the Second World War – in the still uniquely prospering USA, which was *subsequently* perceptible on the basis of the data of the US economy for 1929. Now we can see that, based on the developments in income and the wealth effect, a much greater than justified fall in consumption – amounting to 3 per cent of GDP – took place during the crisis of 1929 in the USA.¹³ Comparing the crisis of 1929 with the other two crises between the two world wars (in 1921 and in 1937) the difference is that *both* investment *and* consumption – including that of non-durable goods – *as well as* exports fell, resulting in a 4 per cent decline in GDP. Moreover, the fall in investment was also greater than in 1921 or 1937, and it mainly affected the permanent elements (construction investment), unlike in 1921, when public investment had declined with the war coming to an end, and not only inventories, as in 1937. While in 1929 there was a *lack of aggregate demand*, in 1920 a significant change took place only *in the structure of demand*. (Temin, 1989, pp. 60–62) Taking everything into account, the role played by the deterioration in business expectations in *launching* the crisis is doubtful, although it may have had a role in the *deepening* of the crisis.

From today's point of view, too little is mentioned in the *General Theory* about the partly global and political factors that play a role in

the deterioration in expectations and marginal productivity and about the conventions that constituted an obstacle to successful macro management. And we can learn only a few facts about the historical conditions under which the changing of conventions considered to be detrimental – the importance of which was realised by Keynes and other contemporary reflationist economists – may (have) take(n) place. Keynes' *General Theory is not identical with the discussion of the problem of the global cooperative regime of the 1930s*, especially not when he deduced the stagnation in employment and in the economy from the fate of the marginal efficiency of capital that was made up to be trend-like in a barely comprehensible way and from the proprietary classes' selfishness that opposed the rate cut. (Keynes, 1965, p. 333) Nevertheless, Keynes' *General Theory* is a complex work because subsequently one can also easily see in it the preliminaries thinking in the framework of an attitudinal regime, if other chapters of it are emphasised.

It is to be noted here that in the global economic policy framework *the differences between monetary policy and fiscal policy become secondary*. There are monetary policy conditions of achieving fiscal policy targets; the multiplier cannot be estimated without the assumption regarding the behaviour of monetary policy. (Mankiw, 1999, p. 303) However, this does not necessarily mean that we devalue the budgetary, redistributive and welfare measures of crisis management programmes (New Deal). Even if, for example, *Bernanke*, repeating the opinion of Friedman and Schwartz, does so, allowing himself the assertion – which otherwise has seemed empirically unfounded recently (see Fishback et al., 2001) – that financial rehabilitation was the only important measure of the New Deal that led to an upswing. (Friedman – Schwartz, 1986, p. 97–98; Bernanke, 2000, p. 62)¹⁴ Nevertheless, during the Great Depression it was observed in many cases that

if a country did not leave the restrictive international monetary regime – see the efforts of the French civil radical or popular governments preceding the Blum government –, it was unable to pursue permanent fiscal expansion. Some of the reflationists, for example *Kalecki*, who proposed the increasing of public investment or aids, i.e. budgetary means, formulated the monetary conditions of their proposals: the banking sector must be able to serve the increased credit demand of the economy that was turned on by the increasing of public expenditures, and the growing interest rate entailed by the upswing should not offset the impact of the increase in income. Nevertheless, the implicit political conditions – which meant a change in the regime – of these conditions were not necessarily clarified as deeply as it is done by today's analysts. (cf. Kalecki, 1980, pp. 50 and 73) As opposed to monetarists, we emphasise that *restoring the confidence necessary for changing the regime was only possible with budgetary and other economic regulatory measures that attempted to ease the social tensions that cracked internal cohesion and to reduce the risk of investment*. Not every measure achieved its objective, or measures were not always efficient; in some countries it worked, in others it did not – the Blum government that copied the New Deal of the United States was unable to achieve similar success.¹⁵ However, on the whole, we do not have proper grounds to ignore their contribution to the recovery.

THE GLOBAL FINANCIAL REGIME OF THE 1920S

According to the authors that are looking for global and system-level explanation, one may gain a deeper insight into why a sharp drop in demand took place in so many countries simultaneously, by understanding the determinants of the *system of the global gold standard* and the

gold exchange standard that *had evolved by the 1920s*. (Bernanke, 2000, p. 277) This regime, with its institutions, ideology, rules and the individuals in a decision-making position committed to them, was the propagator and strengthening factor of an unplanned global monetary restriction that *individual* monetary authorities were unable to manage. The main trouble was the asymmetrical operation of this system in the direction of deflation.¹⁶ *Asymmetry* means that while *the country losing gold had to use deflation to fight against the outflow of gold*, to defend the exchange rate of its currency, the country that was increasing its gold reserves *had no obligation to issue money equaling the magnitude of inflows*. (Bernanke, 2000, p. 74)

Looking at the history of several decades of the gold standard as a whole, the form of the gold standard that evolved by the 1920s is a *special* case of the gold standard. *The gold standard as a global economic-political regime was significantly reshaped by the First World War*, as the international (economic and military) balance of forces also underwent a fundamental change. (Temin, 1989, pp. 6 and 35) Following the war, the pound sterling – and together with it the currency of the English colonies, for example the Indian rupee – was taken back to the gold standard at the pre-war, excessively high exchange rate, which forced the British to continuous deflating in the 1920s. The franc, in turn, was considerably devaluated, and the USA and France became countries with excess amounts of gold.

Earlier, when the Bank of England (BoE) had been the strongest (hegemonic, according to Kindleberger) factor in the international monetary system, it was not typical – due also to the British central bank's interest in profit – of central banks to keep more gold than necessary. However, the US and French central banks, which started to play a decisive role in the 1920s, were not influenced by the considerations that

guided the BoE.¹⁷ The practice in the 1920s was that the central banks of countries with a deficit deflated even in the case of losing a small amount of gold. Important change: after the First World War the phenomenon of central banks rounding out their gold reserves not only with gold, but with the currencies of important economic powers as well, gained ground. The fear, which was in fact less well-founded according to recent researches, that there was not enough gold in the system played a role in it. The regulation of the gold/reserve ratio strengthened the deflationary stance of the monetary system, as the statutes of central banks required a minimum threshold for it, but they did not require a maximum one. They usually applied a 40 per cent lower limit, which meant that the effect of the flow of gold – deflationary effect in the case of outflow – on money supply had a 2.5-fold multiplier, while the contrary effect did not succeed at the gold importer (typically at the US and French central banks), as they were not anxious to get rid of their surplus gold reserves. (Bernanke, 2000, p. 75; Rothermund, 1996, p. 87) Under these circumstances, more significant rearrangements in the volume of monetary gold carried the potential danger of deflation.¹⁸ Later, recovery from the crisis was made possible by measures that searched for a solution to the correction of the deflationary bias of the global regime, although initially these corrections appeared in the form of measures implemented at the level of national authorities, not at a global level. Theoretically, it would have been possible to launch monetary expansion and contain deflation through efficient international cooperation as well, but not all factors were in place for this. (Bernanke, 2000, p. 276) Monetary restriction that has become self-inducting is the central element of the crisis. Nevertheless, this is not what Friedman and his followers talked about: the Fed was not the single (responsible) manager of the process, even if it was a decisive co-author of the story.

The problem of the regime was not that it was linked to ‘gold’. And even being linked to something is not a problem, i.e. it does not mean that there is any problem with fixed exchange rate regimes in general. (Cecchetti, 1997, p. 20) Some of the contemporaries believed that the absolute lack of gold was the reason for the crisis, but today the *absolute* lack is no longer considered to be a serious factor. In spite of its distribution problems, the increase in the globally available quantity of gold significantly exceeded the increase in M1. Nevertheless, in certain phases of the crisis – but not in the initial one – the *distribution* of the existing volume of gold, which, on the whole, was sufficient, pointed to global monetary tightening. (Bernanke, 2000, pp. 135 and 154–155)

Due to the foreign trade surplus of the USA that accumulated during the war, large trade surpluses and deficits developed in the system, which increased the significance of flows of money and capital that had not been negligible in the financial intermediary system earlier either. (Temin, 1989, p. 17; Eichengreen, 1992, p. 12) These flows of money and capital, in turn, departed even further from the idea of self-regulation, due to the fact that loans and debts *came into being on a political basis* in order to reactivate the system and be able to pay war reparations. (Polányi, 1997, p. 292) The problem of bribery and asymmetrical information probably appeared as prominent distorting factors in providing international loans. (Botos, 1987, pp. 48, 59 and 84) In the meantime, a significant number of economists remained the prisoners of conceptions concentrating on goods turnover, going back to *David Hume*.

The gold standard, contrary to its ideology, which attempted to interpret the regime as a self-correcting mechanism free of politics, required international coordination and cooperation even when the British Empire seemed to be unquestionably the leading power in the world. Following the

world war, the global convergence of politics and economy became even more apparent. Attention was called to the importance of the political-economic nature of the global monetary system and system operation, as opposed to the purely economic nature (in the sense as understood by Friedman), already by Kindleberger. Upon analysing the Great Depression, he did not emphasise the mistakes made by a national authority that can be interpreted within a national framework, but underlined the fact that the earlier global playmaker, the British Empire, was not able to and the authorities of the new hegemon, the USA, were not yet willing to assume responsibility for the developments in the global economy, or were not adequately aware of their relevant responsibility or the possible consequences of the impact that the USA had on the external world.¹⁹ According to Kindleberger, the hegemon of the international system does not simply guide the other participants in the regime, but is also *willing to bear the burden* of the adjustment of the global system. This means that it keeps its own markets open to others’ goods, extends counter-cyclical long-term loans, ensures stable exchange rates, conducts macro-economic coordination, and acts as lender of last resort. (Kindleberger, 1986, pp. 11 and 289–300) Eichengreen and Temin disagree with Kindleberger, and are of the opinion that the gold standard cannot be interpreted as something under the influence of a single dominating power.²⁰ According to Temin, since all significant central banks accepted the gold standard as an unquestioned regime, it is hard to believe that another hegemon’s assuming the position would have meant a solution.

An important condition of central bank cooperation in the gold standard was the unquestionability of the international monetary elite and its decisions as well as the subsidiarity – and the unformed nature – of mass demands displayed on the national platform, i.e. the credibility of the gold standard was pro-

vided by the understanding that internal political democracy and interest relations should not be against international monetary cooperation. However, by the 1920s/1930s economic and social groups and interests within national states became articulated enough on a political plane to be able to formulate a clear-cut opinion on monetary matters. (cf. Eichengreen, 1992, page 6; Polányi, 1997, p. 290; Botos, 1987, p. 91) In the opinion of the strengthening money markets, the influence of politics on wage and labour matters as well as the intransparency of whether the balance of payments or employment issues are given preference made central bank behaviour more unpredictable than before, greatly increasing the volatility of money and capital movements. (Eichengreen, 1992, p. 10) *The pillars of credibility that match the newer, mass democratic political system have not yet appeared in the international monetary system.*²¹

The process of the convergence of economy and politics is clearly expressed by today's analysts of the crisis, for example, when Bernanke (2000, pp. 8 and 276) interprets the uniquely destructive crisis as the 'unintentional consequence of the interaction of poorly designed institutions', and talks about an 'incorrectly and poorly managed gold standard'. It means that he considers the international monetary system a matter of planning and management, as opposed to the ideology that was still strong in the 1920s and 1930s and – in spite of the anomalies that have been present for decades – interpreted this regime as an automatic mechanism that is untouchable, or at least not to be touched, by politics.

THE ROLE OF NATIONAL FACTORS

The spending, then monetarist theory appearing after the World War overshadowed global/international expectations in the interpretation of the

*Great Depression (as well),*²² although it was still more revelational and useful than the Marxist economic historiography, which, as world capitalism is a global system, talked about the global nature of the Great Depression in a self-evident manner. However, global aspects meant only a meaningless generality.²³

Although we direct the attention from individual national authorities' 'mistakes' to the international system, one cannot disregard that the defects of the international system do not occur independently of the choices and strategies of national authorities; after all, the authorities of major nations would have been (and later they were) able to reconstruct the international system and manage its problems. Bernanke attempts to express this duality when – to some extent in a USA-centric way, but looking at the United States in the global course of events – he talks about the periods of 'self-inflicted wounds' and then of 'forces beyond our [i.e. the Fed's] control'. (Bernanke, 2000, p. 110)

In view of its consequences, he considers the tightening policy conducted by the Fed in 1929 negative, although the negative opinion is given with regard to the global context and not the national one, because at that time the economy was still growing dynamically in the USA, although the signs of recession were already observed at global level; international wholesale prices started to fall as early as in the summer of 1929. In fact, there are still some who consider the behaviour shown by the Fed in 1929 improper with regard to domestic economic activity as well: in *Cecchetti's* opinion, the conception behind the restriction carried out in order to contain stock exchange dealings was a misinterpretation of the phenomena experienced in the US economy.²⁴ Bernanke's (2000, p. 153) interpretation is different: He considers the criticism of Friedman and his followers verifiable to the

extent that the USA is the only country where the *discretionary* element of monetary policy played a significantly *destabilising* role at the beginning of the *global* crisis. Botos (1986, p. 338) points out a similar asymmetry in the situation of the European countries and the USA. As Eichengreen puts it, inexplicable optimism, independent of the monetary authorities, evolved in the USA in the 1920s, and ‘very optimistic’ investment expectations carried the economy forward (Eichengreen, 1992, p. 14). It also means that the Fed had at least some ground for stepping on the brake. Being of a somewhat different opinion, Bernanke strikes a more critical tone when he says that the Fed’s policy of sterilising gold inflows was ‘inconsistent’ with the rules of the gold standard. (2000, p. 153) In fact, the practice of sterilisation already existed before the First World War, i.e. actually, there is no ‘inconsistency’.

The decline in *global* real money balance in the period of ‘self-inflicted wounds’, i.e. in 1929–1930, is attributable to the tightening policy of the USA.²⁵ In 1931–1932, the Fed was already the prisoner of forces beyond its control, i.e. of the deflationary forces of the gold standard. By then, the developments that played a role in the narrowing of global money supply included the reduction of central banks’ foreign exchange reserves and the deposit/cash ratio, which was declining mainly – although not exclusively – because of the bank panic as well as the money multiplier that was decreasing as a result of a more cautious bank lending policy. As a consequence of the devaluation of the pound in 1931, some central banks recorded substantial losses on their foreign exchange reserves; to avoid the recurrence of this problem, they started to replace foreign exchange with gold in their reserves. The ensuing gold outflows resulted in declines in reserves and, through that, monetary restraint in the countries losing gold.

Bankruptcies of banks and companies meant the reaction of the real economy crisis to the financial intermediary system. The effect of the deterioration in real economy prospects was reflected in a decline of lending by banks. The US monetary policy had already become expansionary by then. The Fed already tried to offset – sterilise – the tightening effect of gold outflows, although instead of that the effect of the distortion of international gold distribution that cannot be considered discretionary (the fleeing of gold to France, the Netherlands, Belgium and Switzerland) as well as the decline in the money multiplier became the main problems. It is to be known that the gold flowing into the countries that were increasing their gold reserves *ceteris paribus* should have resulted in ample liquidity inside these countries and thus, indirectly, globally as well, but local, mainly the French, monetary policies sterilised the inflow of gold, as foreign exchange was replaced by gold in the reserves. This was only partly offset by the loosening that can be measured on the increasing of the base money/reserve ratio. The policy of the Fed aiming at increasing liquidity, reducing the money multiplier and offsetting the negative effect of bankruptcies could only be limited in this phase of the crisis (following the devaluation of the pound, in spite of the significant US gold reserve) because pursuant to the rules of the gold standard it would have raised the otherwise already existing pressure on the dollar, which stemmed from central banks’ aforementioned sales of foreign exchange, including the dollar. (Bernanke, 2000, pp. 126–155; Eichengreen, 1992, p. 293) The global monetary regime played a role not only in the fact that incomes started to decline, but it also hindered the application of state policies against the crisis, including the bank crisis (devaluation, rate cut, budgetary incentives, saving of banks): when central banks started to pump funds

into the banks that had become weaker, the only thing they achieved was that depositors liquidated their savings, withdrew their gold from banks, i.e. pumping ‘fresh air’ in only widened the already existing tear. (Eichengreen, 1992, p. 18)

The difference between the descriptions by Friedman and Schwartz (1986, pp. 85–93) as well as Friedman and Friedman (1998, pp. 74–83) and that of Bernanke is that in their opinion the Fed could have followed an alternative path *all along* between 1929 and 1933; it had the power to do so and possessed the necessary knowledge as well; the feedback working in the complex economy would not have prevented it. Until October 1931 it should not even have had to collide with the rules of the gold standard, only later, at the worst. The problem was not with the international monetary regime, but with the fact that the monetary policy of the USA systematically neglected the interest of the domestic economy, i.e. the whole crisis is a homogeneous period of self-inflicted wounds.

Although making a distinction between ‘self-inflicted wounds’ and ‘forces beyond our control’ is unavoidable from the aspect of global events, it is USA-centric in the sense that it does not have great importance in many countries of the world. Monetary policy in a great number of underdeveloped countries was controlled by colonial powers or great powers that did not have formal colonial means. Although the British sentenced India to deflation, influential countries did not act in concert at all when forcing the world to conduct tightening monetary policies. China was rescued from the crisis by the British using the monetary policy with the new attitude applied in Great Britain, and the devaluation of the pound usually created a more advantageous situation for the British colonies, while the

insistence of the French on the gold standard usually terminated the earlier advantage of their colonies. (Rothermund, 1996, pp. 77, 90 and 113) In many Latin-American countries, the country’s élite behaving as an independent actor was able to defend the interests of the country with monetary policy instruments as well. (Rothermund, 1996, pp. 99–108)

The directions followed by individual countries cannot directly be understood from the internal interest relations, only through the transmission of the strategy of the political leadership and the decisive expert conceptions as well as of the convictions living in the population. In principle the strong financial services sector meant a heavy counterweight against leaving the gold standard and devaluation, but the interests of the City could eventually be overshadowed, since by that time the conviction strengthened that the strong exchange rate had been the cause of the recession in the 1920s. Farmers and exporters suffering from the debt deflation comprised the vanguard of devaluation in the USA and in the Scandinavian countries. Nevertheless, France, where agricultural orientation is strong, committed itself to the gold standard to the very last, and the problem of those with an interest in agriculture was treated with radical market protection measures. It proved to be decisive that after the war in the countries that experienced hyperinflation, including France, the fear of inflation – which of course was ironic in an environment of deflation – motivated the authorities, and the event of returning to the gold standard became the synonym of (price) stability. In addition, Brüning’s leadership in Germany wanted to get rid of the burdens of reparation, demonstrating the ‘unbearableness’ of the economic-social crisis to the creditor countries. (Temin, 1989, p. 77; Eichengreen, 1992, pp. 23–24, 303 and 308–310)

NOTES

- ¹ Essentially in this spirit, Cecchetti (1997, p. 22–23) and Mankiw (1999, page 318) were optimistic upon drawing the lessons, excluding the possibility of a crisis of a magnitude similar to that in 1929–1933.
- ² In fact, Sargent too must admit that the identification of economic policy regimes is subject to debate, but he searches for the task of the theory of rational expectations in developing an algorithm about the reasons and consequences of economic events that functions in a routine-like manner. (op. cit., pp. 27 and 29)
- ³ For example the one with which, according to Sargent (2005), it was possible to curb inflation in the Central East European states in the early 1920s.
- ⁴ Some textbooks still interpret the responsibility of the Fed in the spirit of Friedman: for example, Mankiw (1999, pp. 511–512) in connection with the bankruptcies of banks.
- ⁵ Temin, 1976, p. 7
- ⁶ As pointed out by Eichengreen (1992, page 294 ff.): at the time of the bank crisis in 1932 the Fed had enough gold reserves to offset the *actual (ex post)* fall in the M1; the decline in the M1 amounted to two billion USD, equaling two thirds of the total gold reserves of the central bank. Nevertheless, the situation was completely different *ex ante*: although the decision-maker may have hoped that saving the banks would have led to the restoration of confidence, which would have prevented the outflow of gold, on the other hand it may also have occurred that foreign, especially French dollar depositors would have considered the open-market operations as stretching/violating the rules of the gold standard, which would have added to the outflow of gold, i.e. there would not have been sufficient gold coverage to offset the fall in M1.
- ⁷ Friedman (1986, page 154) himself admitted in his study written later aimed at the clarification of the theory that expectations do not have an autonomous role in it, they only make the system closed; it is completely the past values that determine the permanent value of the key variables of the model, and it poses a ‘problem’ that these expectations (the permanent values of variables) equal their long-term equilibrium values.
- ⁸ Temin, 1976, p. 26
- ⁹ For example, this is how Kindleberger thinks, 1987, p. 43
- ¹⁰ Keynes did not explain ‘future business prospects’ as mechanically everywhere as he did when he assumed pessimism following a longer boom necessarily and in a determined manner. In several parts, he presented the developments in marginal efficiency as understandable in a wider social-political context of a given historical situation. (Keynes, 1965, pp. 160–186, 221 and 229) Emphasising the importance of such correlations makes the regulatory mistakes that play a role in the evolution and inflation of bubbles, the underlying business interests as well as the awkward efforts to amplify the asymmetry of the inevitably asymmetrical information apparent. (cf. Stiglitz, 2005, pp. 44–48, 50, 80, 111, 134–139 and 143–148)
- ¹¹ By contrast, the stock market crash is still described by Ciepielewski et al. as the extinction of the belief in the future of US economy, 1974, p. 287.
- ¹² Kindleberger (1986, pages 112–115) Kalecki called the attention to this correlation as early as in 1931. (1990/1931, pages 37–38)
- ¹³ Based on the slight monetary tightening and the developments in real economy, a downswing of this magnitude is incomprehensible. However, there is debate regarding the inexplicability of the decline in consumption: while Temin considered three quarters of the decline in consumption unexplainable, according to Mishkin’s calculations two thirds of the decline in consumption in 1929 is explained by the wealth effect of the stock market crash. (cf. Cecchetti, 1997, p. 8; Temin, 1976, p. 72)
- ¹⁴ There is an obvious difference compared to the descriptions that praise the novelty and courage of certain measures taken in order to mitigate the social crisis and misery. [cf. Botos, 1987, pp. 62–72; Cs. Szabó (1985/1935, p. 51) about the NIRA as the ‘backbone of the experiment’]

- ¹⁵ cf. Kalecki, 1990/1938; Eichengreen, 1992, p. 374–385
- ¹⁶ According to Bernanke’s tests (2000, pp. 117–122), the use of the wholesale price index – in which deflation was most perceptible – Granger-causes the fall in industrial production in each country under review (except Germany) at a high significance level, while it is not true for the M1 money stock. In Bernanke’s own interpretation, the result confirms the non-monetarist crisis theory.
- ¹⁷ Or when profit considerations came to the fore at the French central bank as a response to the loss due to the devaluation of the pound in 1931 (and they started to sell their foreign exchange reserve in exchange for gold), it had a destabilising effect on the international monetary system, which was facing a crisis.
- ¹⁸ It was Irving Fisher at that time who called the attention to deflation as a danger, but Friedman and his followers and the post-war econometric analyses did not pay adequate attention to it (i.e. neither the monetarist nor the spending theories).
- ¹⁹ The commitment of the USA to the gold standard was not as strong as that of the then leading states at the end of the 19th century either. Kindleberger (1986, pp. 11 and 289), Kindleberger (1987, p. 49), Eichengreen (1992, pp. 30–31), Hobsbawm (1998, p. 98) and Mankiw (1999, p. 269) indicate that in the 1870s, when, following a sharp debate, the USA gave up the greenback introduced during the civil war, it sank the economy into the longest recession up till that time.
- ²⁰ Temin (1989, pp. 35 and 84), Eichengreen (1992, pp. 4–5) Without the help of other central banks, the convertibility of the pound sterling to gold should have been suspended twice in the quarter of a century prior to the First World War. (Eichengreen, 1992, pp. 8 and 391) Eichengreen’s story confirms Károly Polányi’s post World War II analysis (without referring to him), when he emphasises the international political aspects of the gold standard, pointing out that liberal economists did not really understand it. (Polányi, 1997, p. 30)
- ²¹ Perhaps it is worth mentioning that for Marxist contemporaries acting on behalf of democracy and the working masses the aforementioned problem did not exist: they simply considered it a fact that ‘financial capital’ had control over the developments before, during and after the crisis. (Varga, 1978, p. 220)
- ²² Eichengreen, 1992, p. 3
- ²³ See Ciepielewski et al. (1974, p. 286) However, Cecchetti’s (1997, pp. 14–15) otherwise up-to-date analysis still attributes the deflationary effects directly to the bad policy of the Fed, as Friedman and his followers do.
- ²⁴ In the late 1920s, speculators that expected an increase in stock exchange prices devoted significant bank loans to stock purchases. According to Cecchetti (1997, p. 5), the Fed went to war against this process on the wrong basis: speculation meant harmless portfolio reallocation, but the Fed misjudged it, believing that stock purchases divert resources from real investment. The problem with the reasoning is that on this basis the expansion of broker loans could not have any real economy impact. On the other hand, if it is true, *then* limitation thereof could not have any serious effect on real economic developments either. A significant share of the orders were given to the brokers by American manufacturing companies that financed their stock purchases from loans, which forced interest rates up. In view of this, one may think that speculation diverted funds from the real sector. On the other hand, however, financing the investment of firms that were looking for funds at the stock exchange became easier. (see Kindleberger, 1986, p. 100) The net effect is not clear.
- ²⁵ It is to be noted that Bernanke calculated the real money balance with the consumer price index, which declines to a much lesser extent than the wholesale price index. Deflation using the wholesale price index presents the monetary conditions of the crisis years as much looser. In the past Temin (1976, pp. 141–143) also referred mainly to the developments in the money supply calculated using the wholesale price indices, when he brought up counter-arguments against the monetarist interpretation of the crisis with regard to the USA. However, strangely enough, the authors do not deal with the reasons for the notable difference between the two types of price indices on their merits.

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Miklós Losoncz

The global financial crisis and the European Union

The financial crisis, which had started in July–August 2007 in the US subprime mortgage market before it spread to other segments of the financial markets and, becoming increasingly global, engulfed the real economy as well, revealed and accentuated some of the institutional weaknesses and – to a lesser extent – strengths of the European Union, in particular, those of the Economic and Monetary Union (EMU). This study analyses the effects and effect mechanisms of the global financial crisis, and within that especially of the sovereign debt crisis, on the institutions and operation of the European Union and the Economic and Monetary Union. The study focuses on the effective legal regulations and past processes, from which future-oriented conclusions are drawn. The analysis of solution proposals that are taking shape can be the subject of another study.

LEGAL REGULATION RELATING TO CRISIS MANAGEMENT

As it is reflected by recent developments, one of the most important weaknesses of European integration is that either from an institutional aspect or from the funding side *the EU and the EMU were not prepared for managing financial*

crisis situations. In the Economic and Monetary Union, the room for manoeuvre of crisis management is restricted by a provision [Article 123(1)] of the Treaty on the Functioning of the European Union (TFEU) – a part of the Treaty of Lisbon –, which prohibits overdraft facilities or any other type of credit facility with the European Central Bank (ECB) or with the central banks of the Member States in favour of Union institutions, bodies, offices or agencies, central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of Member States. This provision also prohibits the purchase of debt instruments of the aforementioned institutions directly by the European Central Bank or national central banks. *Accordingly, it is forbidden to finance the budget, or the general government in a wider sense, with central bank loans*. However, the above does not apply to publicly owned credit institutions which, in the context of the supply of reserves by central banks, are given the same treatment by national central banks and the ECB as private credit institutions.

Pursuant of Article 125(1), ‘The Union shall not be liable for or assume the commitments of central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of any

Member State, without prejudice to mutual financial guarantees for the joint execution of a specific project. A Member State shall not be liable for or assume the commitments of central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of another Member State, without prejudice to mutual financial guarantees for the joint execution of a specific project.’

This is the so-called *no-bail-out clause*. It is important to emphasise that its provisions are not only applicable to the Member States of the Economic and Monetary Union, but also to all member countries of the European Union. It follows from the no-bail-out clause that in the European Union, particularly in the Economic and Monetary Union, there is a possibility, albeit theoretical, that sovereign debtors (i.e. the Member States) are unable to repay their debts and a *national bankruptcy* occurs.¹ First, neither the Community, nor the other Member States are obligated to help out a distressed Member State with financial transfer. Second, EU Member States cannot finance their budget deficits by issuing new money.

In the case of non-EU Member States, the state cannot go bankrupt because governments can cover the budget deficit by inflationary emission of money. However, as far as the European Union is concerned, according to one of the convergence criteria (which is included in the TFEU as well in an unchanged form) of the Treaty of Maastricht, inflation – measured by means of the consumer price index – in a Member State may exceed the arithmetic average of the rates of inflation of the three countries with the most stable prices (lowest inflation rate) observed over the same period by 1.5 percentage points at most, i.e. there are legal barriers to inflationary emission of money. The participation in the economic policy coordination also set forth in the Treaty is also an institutional barrier to excessive

money supply that feeds inflation in the Member States, as the main priority of the economic policy of the Union is the achievement and maintenance of price stability.

In order to avoid national bankruptcy (and tensions of a smaller size as well), Member States undertook to *avoid excessive government deficits* (Article 126). ‘The Commission shall monitor the development of the budgetary situation and of the stock of government debt in the Member States with a view to identifying gross errors. In particular it shall examine compliance with budgetary discipline...’

One of the objectives of the *Stability and Growth Pact* adopted in 1997 was to reduce the theoretical probability of the bankruptcy of sovereign debtors, by developing an early warning system, and through that by monitoring the general government balances of EU and EMU Member States as well as by sanctioning the infringements of general government discipline.

Further details are provided by Articles 143 and 144 of the TFEU. Pursuant to Article 143(1): ‘Where a Member State with a derogation is in difficulties or is seriously threatened with difficulties as regards its balance of payments either as a result of an overall disequilibrium in its balance of payments, or as a result of the type of currency at its disposal, and where such difficulties are liable in particular to jeopardise the functioning of the internal market or the implementation of the common commercial policy, the Commission shall immediately investigate the position of the State in question and the action which, making use of all the means at its disposal, that State has taken or may take in accordance with the provisions of the Treaties. The Commission shall state what measures it recommends the State concerned to take. If the action taken by a Member State with a derogation and the measures suggested by the Commission do not prove sufficient to overcome the difficulties which have arisen or

which threaten, the Commission shall, after consulting the Economic and Financial Committee, recommend to the Council the granting of mutual assistance and appropriate methods therefor.' Pursuant to paragraph (2) 'mutual assistance ... may take such forms as: a) a concerted approach to or within any other international organisations to which Member States with a derogation may have recourse; ... c) the granting of limited credits by other Member States, subject to their agreement.'²

The EU, in cooperation with the International Monetary Fund, extended loans to Hungary and Latvia in the autumn of 2008 on the basis of the quoted Article 143(2) c) of the Treaty.

On the strength of Article 143 of the TFEU, Council Regulation (EC) No 332/2002 of 18 February 2002 established *a facility providing medium-term financial assistance* for Member States' balances of payments. In other words, this Council Regulation concretised the provisions of Article 143, i.e. created the instrument and facility that allow the granting of assistance to Member States facing balance of payments problems. In case of necessity, the source of financial assistance is constituted by funds raised on the capital market (bond issue) or borrowings from financial institutions by the European Union (or rather by the European Central Bank), i.e. there is a guarantee of the European Union behind the bond issue. It is to be emphasised that this Regulation also applies only to the EU Member States that have not adopted the euro yet. The aforementioned Regulation had determined a loan ceiling of EUR 12 billion, which was raised to EUR 25 billion at the end of 2008, then to EUR 50 billion, and later to EUR 60 billion. In the event that the beneficiary fails to repay the loan, the guarantee for these loans has to be provided by those EU Member States that have not entered the Economic and Monetary Union yet. The interesting part of the matter is that even the

United Kingdom, whose economic agents have Greek government securities and which country itself may need this credit facility, may have a payment obligation. *Article 143 of the TFEU and the related Council Regulation provide legal basis for assisting EU Member States that are not members of the EMU.* These legislations do not allow helping out the Member States of the Economic and Monetary Union.

The no-bail-out clause may also have been attributable to the consideration that the deterring force of the Stability and Growth Pact would be impaired if there was a possibility to assist the countries of the Economic and Monetary Union that are in trouble. Nevertheless, it is still possible to assist EMU Member States, as, pursuant to Article 122(2) of the TFEU: 'Where a Member State is in difficulties or is seriously threatened with severe difficulties caused by natural disasters or exceptional occurrences beyond its control, the Council, on a proposal from the Commission, may grant, under certain conditions, Union financial assistance to the Member State concerned. The President of the Council shall inform the European Parliament of the decision taken.' This regulation applies to all EU Member States, including those constituting the Economic and Monetary Union. Consequently, *although the EU Member States and the EU as such are not responsible for Member States' commitments, the – loophole – provision of the TFEU referring to exceptional occurrences beyond Member States' control still does not assume or allow national bankruptcy in Member States.*

However, in terms of the legal problem of national bankruptcy it also has to be considered that, first, the *meeting of the inflation criterion* by the countries that intend to enter the EMU is strictly checked with regard to a certain period of time preceding the entry. If there is no other possibility, a country that intends to become a member of the EMU and is affected by the economic crisis may resort to inflationary emission of money in order to avoid 'national bankrupt-

cy'. It only risks joining the EMU at a later date. Second, there is no Community legal provision that would allow the Community to apply sanctions against countries that breach the inflation criterion of the Maastricht Treaty following their entry into the EMU. Third, the objective of the monetary policy of the European Central Bank is the maintenance of price stability. In addition, economic policy coordination within the European Union imposes a rather narrow scope for action on Member States in terms of inflation, which also limits inflationary emission of money. However, there is no efficient legal or economic sanction against Member States that breach their commitments in this case either. Actually, the no-bail-out clause has not been used in practice yet. Many experts doubt that its application would be insisted on in a serious crisis situation as well, i.e. its credibility is questionable. The possibility of assistance is taken into account by money and capital markets as well in an implicit manner.

Raising the issue of national bankruptcy only makes sense because – we emphasise that theoretically – *default risk also has to be taken into account* upon rating the risks of government securities in the case of EMU Member States. Relevant large international credit rating agencies (Standard and Poor's, Moody's etc.) take this possibility into consideration when they evaluate the various government securities of EMU Member States. In the new period of the global financial crisis ushered in by the collapse of a US investment Bank, Lehman Brothers, in the autumn of 2008, the bankruptcy of sovereign debtors ceased to be a theoretical possibility; it became a real, albeit relatively unlikely, risk.

The issue of *leaving the EMU* came to the fore in connection with the Greek government debt. In the opinion of the ECB it is legally possible to withdraw from the EU through negotiations (it is allowed by the Treaty on the Functioning of the European Union).

However, withdrawing from the EMU and remaining a Member State of the EU at the same time is inconceivable. The ECB also concluded that although it is conceivable with indirect means, legally it is not possible to exclude a country from the Economic and Monetary Union. Moreover, the possibility of exclusion would undermine the EMU, as this would be a message to financial markets that the EMU is not a real union, but only a specific exchange rate mechanism that may be joined or left by individual countries, depending on their momentary economic situation.³

Apart from economic effects, withdrawal from the EMU and the EU also raises legal problems relating to private law contracts. Contracts concluded on the basis of the legal system of the country leaving the EMU can be amended and redenominated to the new currency relatively easily. However, in the contracts concluded on the basis of the legal regulations of other countries the euro cannot be redenominated independently of the exchange rate of the new currency. Perhaps the only solution to this problem for the country withdrawing from the EMU is to peg the exchange rate of its new currency to one of the major currencies, for example the US dollar.⁴ However, in this case it does not make sense to withdraw from the EMU.

SOME OF THE REASONS FOR NEGLECTING CRISIS MANAGEMENT

When the Economic and Monetary Union was established, it was assumed that the introduction of the euro would protect Member States from financial imbalances and crises through the elimination of the exchange rates of national currencies, and through the enforcement of the strict operating rules of the EMU, including those controlling the public balances of Member States, subsequently also reinforced

by the Stability and Growth Pact. Considering that all the convergence criteria laid down in the Treaty of Maastricht and most of the provisions of the Stability and Growth Pact eventually also apply to the EU Member States that have not entered the EMU yet, the legal-institutional regulation is more or less satisfactory for the European Union as a whole. *The implicit assumption may have been that in case of adequate operation the institutional system contains appropriate guarantees against financial (and economic) crises.* The founders may also have assumed that in the event of a crisis the governments of member countries are able to manage the crisis, can manage financial crises and economic downturns relying on their own resources and using their own means, thus there is no need for Community funds. Limiting the external effects of Member States' undisciplined fiscal policies was also an objective of the no-bail-out clause. Possible current account deficits may be covered from international money and capital market sources. In the light of subsequent analysis, the magnitude of funds that can be raised was determined at a rather low level. In addition, those developing this financing facility probably failed to foresee that the conditions of obtaining funds from international money and capital markets may become tighter in a global financial crisis situation, with substantially increased costs.

This approach differed from the principles of the Economic and Monetary Union specified in the Werner Plan, which was adopted in 1970 only to fail later owing to external global economic reasons. Namely, those who elaborated the Werner Plan considered it necessary to create *monetary reserve funds* to bridge imbalances that may occur in current accounts. It should be noted that the setting up of a USD 2 billion fund under the Werner Plan was not expressly intended to address financial or economic crises, either.

Neglecting crisis management may also have been motivated by the fact that most of the

recessions following the Second World War, and especially in the *period directly preceding the signing of the Maastricht Treaty establishing the EMU were rather mild compared with the 1929–1933 global economic crisis.* It is worthy of attention that even following the severe crisis of the European Monetary System (EMS) and its component, the Exchange Rate Mechanism (ERM) in 1992–1993, no provisions regarding crisis management or setting up a financial fund were inserted in the Maastricht Treaty. It cannot be excluded that the elimination of developments similar to the EMS crisis was expected of the establishment of the EMU.

In crisis prevention, the institutional system of the Economic and Monetary Union focused one-sidedly on the government/public sector. In the meantime, it ignored the imbalances accumulated in the private sector, including the credit and real estate market bubbles. The examples of several EU Member States (e.g. Spain and Ireland) also confirm that sovereign debtors may find themselves in crisis situations in spite of disciplined public finance policies. The events of the last one or two years confirm that crisis prevention does not render crisis management unnecessary.

SHORTCOMINGS AND CONSEQUENCES OF THE INSTITUTIONAL SYSTEM

The financial crisis, which had started off from the US subprime mortgage market in the summer of 2007 before it became increasingly global and engulfed other countries as well as the real economy, also revealed the shortcomings, weaknesses and dysfunctional operation of other elements within the institutional system of the Economic and Monetary Union. It has gained importance subsequently, in the light of the crisis, that pursuant to its mandate, *Eurostat may examine the reports of Member*

States only from a statistical aspect. For example, it was not authorised to check whether the records of the Greek government debt management were kept in a correct manner and whether official statistical figures were reliable. Otherwise, this is an important structural weakness of the SGP, to which attention was already called earlier. Namely, the SGP encourages Member States to present their respective general government deficits as low as possible.⁵

In Greece, *derivative transactions*, which normally serve risk management purposes, were also used to make the situation of the Greek general government appear more favourable than it actually was. Experts presume that before joining the EMU, by means of a foreign-exchange swap transaction in 2002 Greece managed to reduce, at least temporarily, the government debt-to-GDP ratio to 104.9 per cent from the 107 per cent observed in 2001.⁶ The Greek crisis may result in the enhancement of auditing powers. A Commission initiative was aimed at this issue in 2005 already, but it was not approved by the heads of state and government.

Another deficiency of *the institutional system is related to the reference interest rate of the European Central Bank and to EMU Member States' reaction to it.* Based on the experiences collected during the existence of the EMU to date, the inflation target of the European Central Bank (Harmonised Index of Consumer Prices between 0 and 2 per cent, closer to the upper edge of the band) and the reference interest rate – which applies to the whole Economic and Monetary Union – determined in order to achieve this objective do not – and as a matter of course cannot – take into account deviations from the average and the peculiarities of individual Member States. Based on model calculations, with the increase in size and liquidity of the financial market, the adoption of the euro contributed to the lowering of real interest rates (interest rates adjusted

for the inflation rate) in the EU, not only in government securities markets. In the countries where domestic demand was weak and inflation was low, real interest rates were high (which already led to deflationary pressure, for example in Germany). However, in the countries with buoyant domestic demand and high inflation the trend was just the opposite of the above, i.e. low or even negative real interest rates were observed. The lower interest rates, in turn, encouraged borrowing and thus investment and construction activity as well. Accordingly, they also added to the lending and within that to the real estate market bubble, thus strengthening the business cycle especially in the less developed South European member countries of the EU and in Ireland.

During the years of accelerated economic activity that preceded the crisis, owing to low or negative real interest rates prices and wages increased faster in Greece, Portugal, Italy and Spain (and to some extent in Ireland) than the EMU average, weakening the international competitiveness of these countries. Wages are determined centrally in Greece, Spain and Italy, without paying much attention to the differences in productivity of individual industrial sectors and companies. As the euro is the common currency in these countries, the deterioration in international competitiveness could not be mitigated by the devaluation of the national currency.

The success of the euro has contributed to the public debt crisis threatening the South European Member States of the EMU at least as much as its imperfections. The euro was intended to be a more favourable debt financing instrument than the former national currencies, and it fulfilled that role. The success of the EMU also delayed the long overdue implementation of general government reforms. The implications of this are most evident in the case of some South European countries (primarily Greece, Portugal and Italy), which *were able to finance*

their general government deficit and government debt at a low real interest rate for a long time, thereby generating disincentives to structural reforms.

However, in integrated government securities markets there is nothing to prevent individual EMU Member States from moving their sovereign risk – or a part of it – across the border.⁷ In addition, the Maastricht Treaty, which established the Economic and Monetary Union, was too lenient about admitting countries with a poor financial history.⁸ However, it would not be justified to hold the European Central Bank and its monetary policy directly and exclusively responsible for the equilibrium problems of South European Member States. The fiscal policies of these countries also contributed to the problems, as well as the fact that *the Stability and Growth Pact did not contain sufficient compelling force to ensure that EMU Member States achieve budget surpluses during the period of economic boom.* This is why they had no reserves to address the crisis situation with fiscal means.

Since in most EMU Member States the conversion rate of the national currency against the euro was properly chosen, it took a relatively long time for the above divergences to surface. The problems were temporarily concealed by the fact that the Member States concerned were able to finance their increasing external imbalances with inflows of speculative capital. Once the credit and real estate market bubbles burst, this practice could not be maintained any longer.

While the above policies and the related rules encourage primarily EMU Member States to pursue *non-cooperative strategies*⁹, their implications affect the entire European Union. Non-cooperative strategies are typical in the fields of *competitive wage cuts, the curtailment of pensions and services provided by the state and fiscal competition* (reduction of taxes and the general government deficit), and as such, repre-

sent new forms of *competitive disinflation*. Even before the establishment of the Economic and Monetary Union there had been antecedents of non-cooperative strategies, including competitive currency devaluation or depreciation. However, while it was countries with weak currencies that took recourse to the policy of competitive devaluation or depreciation at the time, all EU Member States take advantage of the existing non-cooperative policies today. Some experts also call this *internal devaluation*. While the costs of external devaluation are covered by external creditors, the costs of internal devaluation are paid by households. Such strategies applied by major EU Member States exacerbate unemployment in the EU, and undermine the European social model. Today, by emphasising the differences, they jeopardise the viability of the single currency as well. As the EMU does not have a sufficient common budget, or adequately coordinated tax and expenditure policies to tackle the impacts of the crisis, the economic – in particular, the fiscal – policy of Germany, the largest and strongest Member State, plays an especially important role. German policies in general and Germany's restrictive income policy in particular, proved to be especially dysfunctional from the perspective of the Economic and Monetary Union.

Against the background of internal devaluation, including the restrained increase in domestic income – especially wages –, exports became the main source of demand. This resulted in a considerable polarisation of general government positions. Germany (as well as the Netherlands and Austria) accumulated a substantial *current account surplus*; while other countries (such as Ireland, Greece, Spain and Portugal) piled up *high deficits* simultaneously. Although the German fiscal policy became looser in the last two years as a result of the crisis, the steps taken so far have been insufficient to correct the polarisation. Obviously, further analysis is required to assess the nature of the

deficits. It is not irrelevant, for example, whether the deficit is financed by debt-generating or non-debt generating capital inflows (foreign direct investment), or whether the deficit finances investment or consumption, etc. It is unfortunate to build policies exclusively upon quantitative criteria.

Although inflation was rather low in the Economic and Monetary Union, restrictive German policies brought the country's inflation rate well below the 2 per cent target of the European Central Bank. As a result, many partner countries of Germany faced significant losses in competitiveness. As currency devaluation at Member State level is not possible in the EMU because of the single currency, the only way for these countries to restore their former competitiveness would have been through deflation. Under these circumstances, new equilibrium can be created at a lower level, with declining GDP and increasing unemployment.

We might also interpret the developments outlined above as *having a substantial current account surplus, Germany used to supply the EMU with cheap credit which, in turn, increased demand for the products of the German manufacturing industry*. This model stopped working once the creditworthiness of the buyer (the South European countries with increasing current account deficits) became questionable. Now the balance of payments surplus of Germany has to be reinvested outside of the European Union. As long as the imbalances among EMU Member States are unsolved, official capital flows will play a greater role in maintaining the status quo. All Germany can do is extend its own credit rating to Greece or other EMU Member States until either they become 'look-alikes' of Germany in terms of competitiveness, or Germany becomes 'Anglo-Saxon' based on its consumption habits. Accordingly, Germany plays a very important role in maintaining the Economic and Monetary Union. One might also come to the conclusion

that the management of the sovereign debt crisis may also result in the strengthening of 'deglobalisation', once cross-border private capital flows are replaced by the flow of state capital, i.e. *global capital is replaced by regional or national capital* amid the escalating risks of the target country. In addition, the sovereign debt crisis has brought a change in the sense that user costs have become or are becoming less determined at EMU level by the integration which was implicitly subsidised by Germany, and the newly evolving user cost level will better reflect the economic fundamentals of individual EMU Member States.

The consequences of non-cooperative strategies were fairly significantly exacerbated by *large transnational companies*. These firms have a vested interest in the tax competition among Member States, especially as it relates to the reduction of the corporate tax burden. As large transnational companies pursue global strategies, they are less motivated in the increase in the domestic demand of EU Member States. Consequently, they tend to reduce wage costs in their respective home countries. In both regards, large transnational companies registered in the Member States of the European Union reap the benefits of the current situation, while they hinder further integration.

The imbalances that evolved in the Economic and Monetary Union obstruct efficient responses to internal and external challenges. Demand should be strongly increased in the EU to tackle rising unemployment; however, this hinges on the moderation of the imbalances between Germany and its trading partners. Germany should therefore switch its economic policy to encourage domestic demand instead of endorsing net exports. In order to implement such a change, the lowest incomes should be aggressively increased, while incentives for the creation of low-income areas should be eliminated. For the time being

it is unforeseeable how permanent the recovery observed from the second quarter of 2010 in domestic demand will be.

The lack of a coherent budget policy is the main obstacle to an efficient macroeconomic response to the crisis, which could imply a serious threat even to the Economic and Monetary Union over the long term. What is considered to be one of the biggest weaknesses of the Economic and Monetary Union is that raising the monetary policy to community level was not followed by fiscal federalism which, in turn, undoubtedly presupposes political union over the longer term. In addition to eliminating free riders, the Stability and Growth Pact was intended to make up for one of the most important elements of political union by adopting rules for fiscal policy, which is the most important tool of national economic sovereignty. The provisions of the Stability and Growth Pact and the general government criteria laid down in the Maastricht Treaty (the general government deficit has to be below 3 per cent of GDP) considerably restrict the room for manoeuvre available to the fiscal policies of EU Member States. Moreover, this system of rules is combined with very *limited fiscal federalism*; the expenditure and revenue sides of the EU budget barely exceed 1 per cent of the aggregate GDP of Member States, i.e. the tight fiscal room for manoeuvre in Member States is not offset by the Community budget. At the same time, developments in recent years raise concerns about the credibility of the SGP itself.

For a monetary union to function smoothly there must be tools and mechanisms in place for handling the diverging development trends of member states. In this respect, some kind of *coordinated or central budgetary authority* is indispensable. This necessity was ignored when the Economic and Monetary Union was established, as the founders surmised that market economies stabilise themselves automatically. The maintenance of stability can then be

ensured by simply avoiding the accumulation of excessive deficit. The validity of these assumptions has been refuted by the current global financial and economic crisis. The European Central Bank has proposed to set up an independent fiscal authority or some kind of other body.

RESPONSE TO THE CRISIS

Largely reflecting the German position, which attaches great importance to fiscal discipline, the EMU has been based upon *three pillars* thus far. The first pillar is the independent European Central Bank, the primary objective of which is to achieve and maintain price stability. The second pillar is the Stability and Growth Pact, which is designed to enforce fiscal discipline, and the third pillar is the no-bail-out clause, which prohibited the ECB as well as EU institutions and Member States from assisting other Member States.

This structure has weakened in the wake of the global financial and economic crisis, although the credibility of the no-bail-out clause and the Stability and Growth Pact had been called into question even earlier. The major EMU states (Germany and France) managed to breach the latter without any consequences; granted, they did not destabilise the Pact or the EMU by doing so.

■ As far as the *first pillar* is concerned, in an effort to mitigate the turmoil in securities markets, in the middle of May 2010 the European Central Bank decided to disregard its former rules and start purchasing – by way of money creation – the government securities of distressed countries in the secondary market, i.e. bail them out despite statutory provisions. Purchasing the government securities of countries struggling with liquidity problems does not belong to the competencies of monetary policy

in a traditional sense. What this is about, however, is that the ECB allocates certain funds to certain creditors and borrowers at the expense of others. Being independent of governments, ensuring price stability and thereby facilitating economic growth is a part of the responsibilities of this institution, while such allocation of loans is not. Some experts believe that the ECB made this decision under political duress, which compromises its independence. It is closer to the truth, however, that the ECB acted under the pressure of circumstances at a time when governments procrastinated in tackling the crisis, and the heads of states and governments of the EU failed to adopt coordinated and timely decisions. The ECB itself considered the bond purchase programme a temporary crisis management tool rather than a permanent practice. It was necessary only until the European Financial Stability Facility started functioning.

Another change introduced by the ECB deviating from its original rules was to extend the scope of eligible collaterals to lower-rated government securities (those issued by governments with a lower creditworthiness, e.g. Greek, Portuguese and Irish government papers). If – in an effort to avoid quantitative easing – the ECB decides to offset the purchase of Greek and other lower-rated government securities by selling other government securities, the tax burdens of the countries concerned will increase.¹⁰ With a view to reducing the inflationary effects of its government security purchases, the ECB sells other papers to ‘sterilise’ the money created by the purchase of Greek, Portuguese and Spanish government securities with a typical maturity of 1 to 3 years. Nevertheless, many are concerned that continuing this practice will lead to quantitative easing which, given its inflationary effects, has been considered undesirable by the ECB until now. Moreover, the more government securities are bought by the ECB, the more difficult it will be to say no to further demands. All this, however, would match the profile of the proposed

European Monetary Fund¹¹, which is to be funded by the governments of Member States.

It is justified criticism that the turnaround in the ECB’s monetary policy was not aligned to the economic programme adopted by Member States for the next several years in relation to fiscal austerity; addressing the bad debts in the portfolio of Member States’ commercial banks; labour market reforms, the reform of the control system of the EMU and the establishment of a single government securities market, even though the programme could have legitimised the open-market operations of the ECB.¹²

As a possible consequence of such *monetisation of government debts*, the shareholders of the ECB could face considerable losses if the states whose government securities the ECB purchased were unable to meet their payment obligations. The losses could be covered either by fiscal means or by the issuance of money. In the first case the burden is borne by the taxpayers, mainly Germans, as Germany is the biggest shareholder. In the second case the outstanding debt of the ECB is inflated, i.e. socialised, which means that consumers are made to pay for it through higher prices.

Finally, liquidity does not translate into solvency. The opportunities provided by the ECB do not reduce general government deficits, which would require further fiscal and economic policy steps.

■ As far as the *second pillar* is concerned, the global financial and economic crisis brought the weaknesses of the Stability and Growth Pact to the surface; the Pact’s system of rules failed to ensure discipline in public finances at the level of the integration due to deficiencies in the enforcement of rights and, in the lack of adequate national incentives, in individual Member States’ compliance with the relevant legal regulations of the European Union. The evaluation of the *Stability and Growth Pact* is controversial in literature; its presentation

exceeds the content and scope of this study.¹³ Without being exhaustive, a shortcoming to be highlighted in the context of the global financial and economic crisis is that the SGP was unable to enforce the rule which requires the Member States of the Economic and Monetary Union to reduce the government debt-to-GDP ratio, and accumulate a surplus in the general government balance in the rising stage of the economic cycle, bearing in mind the lean years ahead.

Another shortcoming of the SGP is that, *with an exclusive focus on public finances*, it did not pay adequate attention to other elements of the macroeconomic criteria system. Spain and Ireland had pursued a disciplined general government policy for a long time. From 2008, however, the deficit and government debt started to accumulate fast as the state had to take on the burden of rescuing a banking sector reeling from the consequences of the crisis, i.e. socialise private sector debt. Total debt reflects the equilibrium position of individual countries better than the general government debt-to-GDP ratio. In the case of the United Kingdom, for example, the total debt of the public and private sectors as a proportion of GDP increased from 350 per cent in 2000 to 449 per cent in 2009.¹⁴

The evaluation of the situation may be refined further by taking account of the so-called floating debt, the majority of which resides in the banking sector. In Germany, for example, the amount of bad debts of banks controlled by federal states was estimated to be EUR 800 billion, i.e. one third of Germany's GDP.¹⁵ Spanish savings banks (Cajas) are struggling as well, and even French, Belgian and Austrian banks are undercapitalised for the most part. Therefore, transparency is of utmost importance and may be improved by the stress tests on which, urged by many experts, the European Council decided at its meeting in June 2010. At the same time, owing to the

rather lenient boundary conditions, many experts do not consider the results of the stress tests published in the summer of 2010 realistic. It also deserves attention that the European Central Bank proposed to set up an independent supervisory authority within the European Commission.¹⁶

Sanctioning was not a lucky step either, because suspending the disbursement of certain Community funds in the case of non-EMU members and ordering the payment of penalty in the case of EMU Member States would only add to the general government deficit of the countries concerned.

The ideas to amend the SGP are aimed at reinforcing automatism through, for example, a stricter supervision of general government positions, the tightening of implementation rules and procedures, a more thorough preliminary assessment of Member States' budgets by EU institutions, incorporating the rules regarding national budgets into law and a stricter sanctioning of Member States that violate European Union legislation.¹⁷ The proposal regarding the suspension of the voting right of countries that breach general government discipline is not reasonable. It is also being considered that greater importance would be attached to government debt as well as the current account and external debt than to general government deficit.

■ Regarding the *third pillar*, the no-bail-out clause was overruled by the crisis as, in addition to the financial assistance of EUR 110 billion provided to Greece earlier, in May 2010 the European Council adopted a financial package amounting to EUR 750 billion to manage and contain the Greek sovereign debt crisis. EUR 440 billion of it is disbursed through the so-called *European Financial Stabilisation Mechanism* (EFSM)¹⁸, EUR 60 billion is allocated to the facility regulated by Council Regulation (EC) No 332/2002, and EUR 250 billion is provided by the International

Monetary Fund. *This can also be viewed as an initial set of tools and institutional system for community-level crisis management.*

The EFSM is based on Article 122(2) of the Treaty on the European Union. Pursuant to Council Regulation (EU) No 407/2010 on establishing the mechanism, for a period of three years, Member States are prepared to grant assistance to an EMU Member State threatened with difficulties caused by occurrences beyond its control. Obviously, the mechanism applies to the Member States of the EMU. Assistance is provided in the context of a joint EU/International Monetary Fund support. The mechanism does not affect the validity of the facility regulated by Council Regulation (EC) No 332/2002, designed to provide assistance to EU Member States outside the euro area. Within the framework of the EFSM, implementing powers are exercised by the Council of the European Union. It is the European Commission that borrows on behalf of the European Union in the capital market and from financial institutions. The loan or credit facility can be provided under strict economic policy conditions that serve the sustainability of public finances. The European Commission and the Economic and Financial Committee (ECOFIN) provide an opinion on the economic and financial adjustment plan prepared by the beneficiary Member State, and the implementation of the programmes is reviewed by the Commission. The financial assistance is granted by a decision adopted by the Council, acting by a qualified majority on a proposal from the Commission. In addition to the 16 Member States of the EMU, Poland and Sweden also participate in the mechanism. The EFSM is a temporary, provisional scheme, envisaged to operate for three years.

In practice, the EFSM is a Luxembourg-registered *limited liability company* set up for a duration of three years with the capacity to issue bonds, and it is owned by EMU Member

States. EU decision-makers would like the company to receive AAA, i.e. first-class rating from international credit rating agencies. The company will be activated when it is approved by the national parliaments representing 90 per cent of the registered capital. All EMU Member States (as well as Poland and Sweden) will be required to guarantee the debt instruments of the EFSM. In the event that an EMU Member State needs a loan prior to the setting up of the mechanism, it may temporarily use the EUR 60 billion facility intended for the remedy of current account deficits of non-EMU Member States, which is guaranteed by the EU budget. In practice, it will be difficult to abide by the duration of three years, as withdrawing from the obligations undertaken under the EFSM will not be an easy matter.

In many respects, the philosophy behind the European Financial Stability Facility calls to mind Article 5 on mutual defence of the North Atlantic Treaty signed in Washington, which can also be interpreted as the beginning of the institutionalisation of solidarity among Member States.¹⁹ Many experts believe that *the no-bail-out clause thus became a clause designed to prevent the bankruptcy of sovereign debtors*, which transformed the Economic and Monetary Union into a *'hidden transfer union'*, which lacks wider social legitimacy at that. In this context, however, some politicians claim that the package is not an aid but a loan to be repaid; and as such, this exercise cannot be considered *assistance in the 'classical' sense*.²⁰ Together with other European Union measures adopted in recent months with a view to uniting the resources of the EMU Member States, the European Commission and the ECB, the EFSM goes beyond the Stability and Growth Pact, and can even be considered as a shift in the direction of fiscal federalism.²¹ At the same time, operating the EFSM is mainly based on intergovernmental cooperation (the implementation rights are in the hands of the European Council),

rather than Community legislation, which is probably due to the fact that Germany wanted to maintain its controlling role in the scheme.

At the time this study was prepared it was not clear whether the European Financial Stabilisation Mechanism would be allowed to borrow from the money and capital markets even before a Member State had officially submitted its urgent request for assistance. It is also not clear what lending rate will be applied. The interest rate of the EUR 110 billion facility approved for Greece was defined at 5 per cent.²² The AAA rating, which the EU considers justified although there is no guarantee for getting it, would be more favourable than the average of individual EMU member countries – that is, if individual countries did not act in a coordinated manner – since only Germany and France have an AAA rating.

■ Another weakness of the scheme is that *it is intended to ease liquidity tensions at a time when the South European EMU Member States are struggling with a payment crisis*. The facility improves liquidity, but it does not provide a long-term solution to the solvency problem or to the prevention of further debt accumulation in an already indebted country. The mechanism postpones the debt problem rather than resolves it. It intends to remedy a large debt with an even larger one. The structural problems and risks of the scheme will become apparent once assisting a larger country is put on the agenda. The mechanism is inherently controversial in that a group of countries struggling with financial problems are expected to assist countries in a similar predicament.

Obviously, in the case of a national bankruptcy a redistribution of income will take place from Northern Europe to Southern Europe. Thus far, the sovereign debt crisis has not imposed costs on EU taxpayers. This may change in the event of a restructuring or rescheduling of the Greek government debt, in

which case the bulk of the Greek government debt will be held by the European Financial Stabilisation Mechanism.

It is a risk factor that the Constitutional Court in Germany may find the EFSM unconstitutional. To ward it off, in October 2010 the German Chancellor proposed that the TFEU should be amended. The proposal is unacceptable for many EU Member States. They intend to mitigate the risk of a guaranteeing country not paying up the amount it is committed to by raising the contributions to the subscribed capital of the ECB by an additional 20 per cent, which means that Member States have to pay 20 per cent more than the share determined for them. Conceivably, this will become necessary right at the beginning, considering that the new government and parliament of Slovakia said no to the payment of the EUR 816 million Community contribution undertaken by the previous cabinet to assist Greece.

For the sake of completeness, it should be noted that beside the revaluation of the ECB's role, more stringent fiscal rules and crisis management mechanisms, the EU attaches great importance to the incentives for economic growth and competitiveness. To this end, work is under way to develop the *Europe 2020 Strategy* for the replacement of the Lisbon Strategy, which was launched in 2000 and is set to expire this year. Finally, it is also imperative to address the governance of the EMU. In the current structure, none of the institutions has adequate control functions.

Based on the analysis of economic growth and general government trends, studies focusing on the sovereign debt crisis do not exclude the possibility of an eventual government debt restructuring or rescheduling in Greece²³ and/or Portugal. Although apparently the ECB does not support the restructuring or rescheduling of the debt – as it would be an easy solution for countries that have lost control over public finances and would increase the moral

hazard weakening general government discipline –, it is necessary to consider the establishment of certain institutions and mechanisms which would not only allow for the restructuring or rescheduling of the government debt of EMU Member States, but also minimise moral hazard. Further research should focus on analysing whether a reasonable solution could be provided from a political and economic perspective by a potential cross subsidy between EMU Member States, which would ensure the avoidance of the restructuring or rescheduling of government debt. There have been discussions about setting up a *European Monetary Fund*, however, it has not been included in the official objectives of the EU to date, and its analysis would exceed the content and scope of this study.

SUMMARY, CONCLUSIONS

The US mortgage market crisis, which started in the summer of 2007 before it engulfed the real economy and became global, revealed the institutional and operational deficiencies of both the European Union and the Economic and Monetary Union. Originally laid down in the Maastricht Treaty and subsequently adopted in the same format by amended and supplemented versions of the Treaty, the initial objective of the *no-bail-out clause* as a general rule was to enforce and guarantee general government discipline. While it also entailed the bankruptcy of sovereign debtors, such eventuality was considered to be extremely unlikely, a mere theoretical possibility. *The EMU did not have any crisis management institutions or mechanisms*; partly because its designers must have assumed that the provisions of the Maastricht Treaty, the Stability and Growth Pact, economic policy coordination and other complementary statutory provisions would provide sufficient institutional guarantee for the avoidance of sovereign debtors' crises.

At the same time, the successive Treaties include a provision legalising assistance to distressed Member States in case of force majeure. Therefore, within certain limits, developing the institutions and tools of crisis management does not require any amendments to the Treaties.

However, in the wake of the global financial and economic crisis the bankruptcy of sovereign debtors has become a valid risk and a real possibility, which can be primarily attributed to the nature of the crisis itself (the recession leads to a decline in tax revenues, while the recapitalisation of the affected banks and a number of other factors generate an increase in general government expenditures).

Institutional and operational deficiencies also contributed to this. Such deficiencies included *the potential creative applicability of general government statistics* and *the pass-through of the numerous dysfunctional effects of the ECB interest rate to the EMU as a whole*, which did not occur on their own, but were transmitted partly by the economic policies of the Member States concerned, and partly by the shortcomings of the Stability and Growth Pact.

Such a dysfunctional effect was that high real interest rates evolved in the countries where inflation was low, and low real interest rates evolved in countries with high inflation, i.e. mainly in the less developed South European Member States and Ireland. The low real interest rates fuelled the economic activity in the latter countries, which generated credit market, real estate market and securities market bubbles, while their international competitiveness deteriorated in the context of increasing price and wage levels. *Low real interest rates* ensured the cheap financing of general government deficit and government debt, which generated disincentives to the long overdue structural reforms. In addition, with a view to improving competitiveness internationally and within the EMU, several developed Member States, main-

ly Germany, also resorted to *internal devaluation* (disinflation, relative wage reduction etc.) randomly, i.e. not driven by any competitive strategy. This increased the *differences between current account balance positions* within the EMU, and the growing surpluses of northern, more developed Member States (Germany, the Netherlands, Austria) restricted export opportunities for those with a deficit: South European Member States and Ireland. As long as the imbalances among EMU Member States remain high, official *capital flows* will play a greater role in maintaining the status quo. Amid escalating risks, cross-border private capital flows are being replaced by the flow of state capital, i.e. global capital is being replaced by regional or national capital. In addition, the sovereign debt crisis has brought a change in the sense that *user costs have become or are becoming less determined at EMU level by the integration* which was implicitly subsidised by Germany, and the newly evolving user cost level will better reflect the economic fundamentals of individual EMU Member States.

The global financial and economic crisis altered the three pillars of the EMU as well. As far as the first pillar, *the independence of the common bank* is concerned, in the context of crisis management the European Central Bank started to purchase government securities of Member States, including those with low credit ratings. First, the proper legitimacy of this activity is questionable as it does not comply with the medium-term economic strategy adopted by the Member States. Second, it raises concerns about the independence of the ECB. The monetisation of government debts increases the risk of growing inflationary pressures, and may also lead to a redistribution of government debt within the EMU if the governments that issued the securities purchased become insolvent. The system of *rules of the Stability and Growth Pact*, which constitutes the *second pillar*, failed to ensure discipline in

public finances at the level of the integration due to deficiencies in the enforcement of rights and, in the lack of adequate national incentives, in individual Member States' compliance with the relevant legal regulations of the European Union. Moreover, with an excessive focus on public finances and government debt, it paid less attention to the imbalances and indebtedness of the private sphere. Finally, the crisis overruled the third pillar of the EMU – the *no-bail-out clause* – as a result of the creation of the European Financial Stabilisation Mechanism.

Thus far, the EU and the EMU have responded to the global financial and economic crisis under the duress of circumstances. The responses were mostly reactions by nature, did not form parts of a coherent strategy, and very often lacked coordination. Consequently, it is reasonable to assume that the costs of crisis management (especially those of the Greek sovereign debt crisis) were higher than necessary. As a result of the changes and drafts adopted in recent months, *the conceptual and institutional outlines of a crisis management has started to take shape along with its own toolkit*; however, following from its nature, it is still surrounded by much uncertainty and a great number of risks. It is promising that beside crisis prevention crisis management is also being addressed, and beside the financial sector the ideas cover the real sector as well. Accordingly, aligned to the Europe 2020 Strategy currently in preparation, the concepts include a long-term incentive to competitiveness. The EFSM may become a suitable basis for a crisis management institution to be developed.

At the same time, there are many tensions and problems to be resolved. One of them is – mainly in the context of Greece and Portugal – the need to *develop mechanisms for the restructuring or rescheduling of government debt*, which appears to be unavoidable over the medium term (indeed, the EU has merely gained some

time by setting up the EFSM, which does not provide a solution in itself). Another issue is the need to reduce non-cooperative strategies, such as those based on internal devaluation, and hence, the imbalances (current account surpluses and deficits) within the EMU. The governance of the EMU, including the reform of the Stability and Growth Pact, needs to be

addressed as well. *Although the events related to the sovereign debt crisis have put the EMU to the test in recent months, its dissolution is unlikely at the moment.* Despite its controversial crisis management, EMU membership remains attractive, as confirmed by Estonia's forthcoming accession and Iceland's interest in EU and EMU membership.

NOTES

- ¹ In a general sense, national bankruptcy (which, in my opinion, is an inept expression that requires careful interpretation) means that the state is unable to meet its payment obligations. They may be external and internal payment obligations (*vis-à-vis* non-residents and domestic economic agents, respectively). Pursuant to the relevant articles of the TFEU, this is a limited interpretation of national bankruptcy, when a given state is unable to raise external and internal funds to finance the general government deficit and the government debt, i.e. it cannot meet its interest and principal repayment obligations stemming from the debt denominated in euro on schedule. In practice, this may be some kind of moratorium regarding the interest repayment as well as a restructuring of government debt and an amendment to the conditions of repayment. Some experts believe (George Magnus: The spectre of sovereign default returns to rich world, *Financial Times*, 14 January 2010, p. 30) that national bankruptcy can have a milder, more lenient form as well, which occurs in the wake of a significant acceleration of inflation through the redenomination of the legal tender (for example, by slashing two or three zeros off the numbers on the banknotes in circulation), restrictions on capital flows and the imposition of special taxes that break private contracts. Others also consider the restructuring of government debt a form of national bankruptcy, except if it takes place on the basis of an agreement. Instead of restructuring, rescheduling may be a solution, when short- and long-term debts are converted into long-term ones.
- ² The source of this train of thought and the next one is: Daniela Schwarzer: Getting around the no-bail-out-clause. *Eurozone Watch*, 20 February 2009. <http://www.euro-area.org/blog/?p=198>
- ³ Tony Barber: Danger zone. *Financial Times*, 17 May 2010, p. 7
- ⁴ Jennifer Hughes: Greek woes raise eurozone questions. *Financial Times*, FM Supplement, 12 April 2010, p. 3
- ⁵ Jürgen von Hagen – Guntram Wolff: What Do Deficits Tell Us About Debt? CEPR Discussion Paper 4759, November 2004. When the German federal government took over the debt stock of the East German privatisation agency in 1995, it did not state it as a deficit of the given year, but put it in a special fund. However, this transaction was reflected in the public debt.
- ⁶ Satyajit Das: Greek window dressing puts derivatives' role on full display. *Financial Times*, 18 February 2010, p. 26
- ⁷ Data released by BIS indicate that the total value of Greek, Irish, Portuguese and Spanish government securities within the portfolio of banks registered in GMU Member States was EUR 1,579 billion at the end of 2009. The share of French and German banks amounted to 61 per cent.
- ⁸ Kenneth Rogoff: Europe finds that the old rules still apply. *Financial Times*, 6 May 2010, p. 11
- ⁹ EuroMemorandum Group 2010: Europe in Crisis: A Critique of the EU's Failure to Respond and Alternative Proposals in Times of Crisis. <http://www.lwbooks.co.uk/ebooks/EUROMEMORANDUM%202009-2010.pdf>, p. 42
- ¹⁰ John Taylor: Central banks are losing credibility. *Financial Times*, 12 May 2010, p. 9
- ¹¹ Daniel Gross. – Thomas Mayer: How to deal with sovereign default in Europe: Towards a Euro(pean) Monetary Fund. CEPS Policy Brief, No. 202/February 2010

- ¹² Wolfgang Münchau: History warns over slippery slope of debt monetisation. *Financial Times*, 13 May 2010, p. 4
- ¹³ Of the latest see: European Central Bank: Reinforcing economic governance in the euro area. Frankfurt, 10 June 2010
- ¹⁴ McKinsey Global Institute: Debt and deleveraging: The global credit bubble and its economic consequences, January 2010
- ¹⁵ Wolfgang Münchau: Give us the figures on Europe's toxic banks. *Financial Times*, 21 June 2010, p. 11
- ¹⁶ Jean Pisani-Ferry: Towards a system to secure the euro. *Financial Times*, 23 June 2010, p. 9
- ¹⁷ European Central Bank: Reinforcing economic governance in the euro area. Frankfurt, 10 June 2010, p. 14. European Commission: Enhancing economic policy coordination for stability, growth and jobs – Tools for stronger EU economic governance. Brussels, COM(2010) 327, p. 14
- ¹⁸ Council Regulation (EU) No 407/2010 of 11 May 2010 on establishing a European financial stabilisation mechanism. Notably, as of early 2010 until 2012 Spain, Greece, Portugal and Ireland have to raise EUR 448 billion, EUR 158 billion, EUR 70 billion and EUR 69 billion, respectively, to renew government debt.
- ¹⁹ The opinion of the French Minister Pierre Lelouche is quoted by: Ben Hall: Eurozone bail-out plan 'alters EU treaty', *Financial Times*, 28 May 2010, p. 1
- ²⁰ José María Aznar: Europe must reset the clock on stability and growth. *Financial Times*, 17 May 2010, p. 9
- ²¹ Romano Prodi: A big step towards fiscal federalism in Europe. *Financial Times*, 21 May 2010, p. 9
- ²² Tony Barber: A tent to attend to. *Financial Times*, 17 June 2010, p. 9.
- ²³ Lee C. Buchheit – G. Mitu Gulati: How to restructure Greek debt. May 7 2010. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1603304

Katalin Botos – Péter Halmosi

Mortgage Markets in the United States of America and Europe

The authors provide a brief overview of the characteristics of the different housing financing systems of the two continents. The varying, but everywhere important role of housing in household savings is analysed separately as well. At the same time, they point out the interdependence between the factors of modern money based upon credit and the wealth effect that can be related to housing. Finally, they highlight the thoughts – stable savings rate, liquidity, rational housing policy – that should, perhaps, be considered by the Hungarian financial policy-makers as well.

It is common knowledge that there is a significant difference between the financial systems of the Old World and the New World. Capital market financing is more developed and therefore more decisive in America, while bank financing continues to be typical in Europe. Data for 2007 make it perfectly clear: the capital market amounted to 375 per cent of GDP in the United States of America, and only to 311 per cent in the euro area. At the same time, stock market capitalisation equalled 165 per cent of GDP in the United States of America, but it reached only a mere 81 per cent in the euro area. The underlying reason is that Europe traditionally prefers bank financing, where a relatively high ratio of household savings and the financing of the operation of companies mainly from loans are typical. The ques-

tion arises whether the usual, established divergent financial structures and institutional systems influence today's economic developments in individual regions, and if so, how and through what transmissions.

Recently published analyses clearly show that the evolution of the international money market crisis is closely linked to the bursting of the earlier real estate market bubbles analysed by many. However, the crisis had different impacts in terms of time, space and strength in the various regions. It is widely known that it was the strongest in the United States of America. Consequently, it is worth comparing the real estate financing practices in the United States of America and in the less affected Europe. And, considering that the most important and at the same time politically most sensitive area of real estate financing is the housing market, it is worth focusing on it.

HOME CREATION IN THE USA: HISTORICAL ROOTS OF MORTGAGE FINANCING

A mortgage loan is a basic form of housing financing in both regions. However, significant differences are observed in this field, resulting precisely from the general differences between the financial systems. Exactly these differences

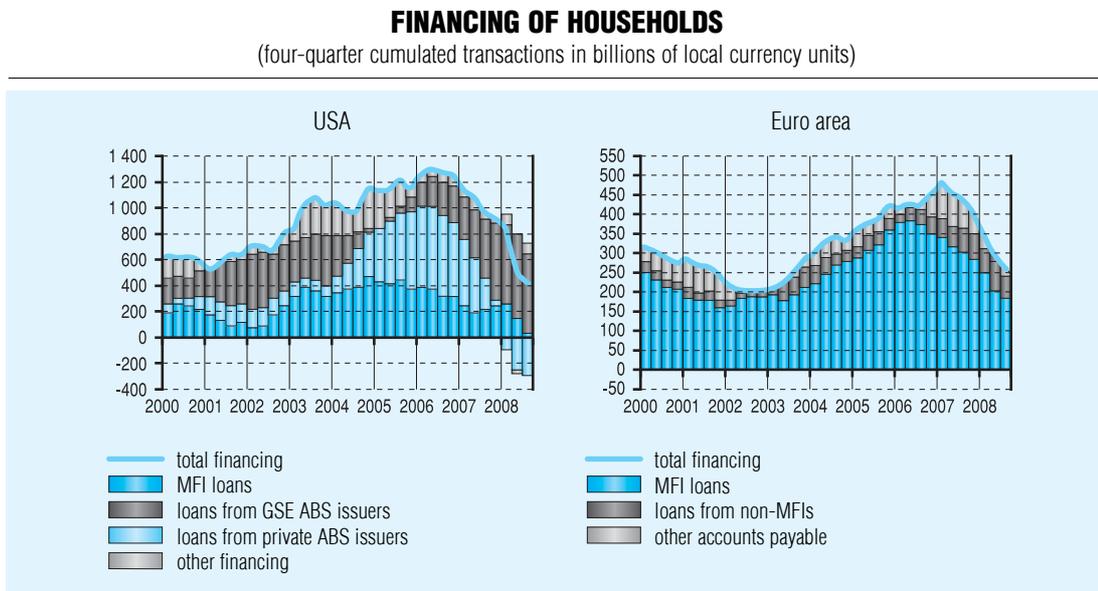
may explain the variances in households' indebtedness, the various roles of securitisation, and ultimately they even help answer the question regarding the crisis. (The differences are shown in *Chart 1*)

The peculiarity of the American system is primarily the existence of government-sponsored enterprises (ECB, 2009d). Namely, in 1934, following the Great Depression, the National Housing Act was adopted in order to prevent the masses of housing creditors from getting into a completely impossible financial situation. The relevant implementing institution, the Federal National Mortgage Association (FNMA), was established in 1938. However, the Federal Association was privatised in 1968; since then it has been known as Fannie Mae. By means of funds raised with advantageous conditions through its own-issued securities, its objective is to enable companies that actually provide mortgage financing to have access to refinancing at an acceptable price. Passing on – by means of negotiable instruments – the loans that finance real assets, their 'transformation' is called *securitisation*.

Mortgage-backed securities (MBS) are also called *pass-through* schemes because they direct specific income flows to investors.

However, when the government sold Fannie Mae, at the same time it established another state-owned company as well, nicknamed Ginnie Mae. Its declared economic policy task was to provide safer refinancing for the housing financing of mainly the lower- and medium-income social strata. Ginnie Mae guarantees to investors that it will pay the loan repayments and interests on the mortgage-backed securities of the issuers that it has accepted in a timely manner. It means that Ginnie Mae does not sell or buy mortgage-backed securities, but provides guarantee if the loans of the institutions accepted by it are acknowledged and approved as desirable instruments of the government's housing policy by the Federal Housing Administration (FHA), the Department of Veteran Affairs (DVA), the Rural Housing Service (RHS) or the Office of Public and Indian Affairs of the Department of Housing and Rural Development. The intention is clearly visible that the Administration wants to

Chart 1



Source: ECB (2009c), p. 77

facilitate the access of certain social strata, mainly those with low earnings, taking account of their income, to housing under preferential conditions. For this, of course, funds that can be obtained with better conditions have to be collected for the borrowers. Therefore, it has to be assumed, and has to be achieved, that investors buy sufficient quantities of mortgage-backed securities as well, which provide relatively modest yields. (The target group comprises mainly those for whom safety is more important than the magnitude of yields.) The explanation for the marketability of the securities lies precisely in this: in view of their quasi state guarantee, these low-interest securities are very safe. The reason is that even if the debtors fail to pay, investors will receive their income, which consists of the instalment and the interest. Namely, in the event that the issuer is unable to perform, Ginnie Mae intervenes, because it has to pay to the investors for the funds received in any case.

By establishing Ginnie Mae, the Administration implemented a one-off investment. It was assumed that the institution would support itself on the guarantee fees until an economic downturn takes place when masses of borrowers of housing loans become unable to meet their payment obligations. Then, however, pursuant to its statutory obligation, the state has to honour the liabilities. (And this is exactly what happened on the occasion of the crisis in 2008.)

Moreover, another, although privately owned, institution that serves a similar purpose was also founded in 1970. It is the Federal Home Loan Mortgage Corporation, also known as Freddie Mac. Freddie Mac bought up the mortgages on the secondary market, financing the transaction by selling the mortgage-backed securities it issued. It gained an especially significant role in providing funds for savings banks (credit unions), which provided mortgage loans in the primary market. However, the market considered both Fannie Mae and

Freddie Mac essentially to be government-sponsored enterprises (GSE), although only Ginnie Mae was an expressly public enterprise. Their role in the mortgage market became really important and decisive at the time of the savings bank crisis in the eighties.

The then crisis of the savings banks restructured the whole US mortgage market. Until the end of the seventies these banks extended long-term mortgage loans with fixed interest rates, which they provided mainly from short-term, but stable and low-interest deposits. However, the interest rate levels that increased because of the inflation – in view of the interest ceiling of deposits – resulted in a leakage of funds from the savings banks. Savers invested their money in instruments that had higher yields. (Essentially this is what was called disintermediation, i.e. a process aiming at the elimination of intermediary institutions.) This, in turn, resulted in a serious shortage of funds and then a shortage of capital at the savings banks, which was only exacerbated by some improvident investments following the bank deregulation. Then their mortgage loans were taken over by the central institutions of the mortgage market, thus they remained able to provide further loans at a lower deposit/loan ratio as well. As they had transferred their fixed-rate outstanding loans, they were no longer sensitive to the rising interest rates either.

Accordingly, fixed-rate mortgage loans were either transferred to the government sponsored enterprises, or they were purchased by private institutions that also issued similar asset-backed securities (ABS). These institutions that implemented large volumes of ‘securitisation’ had been and remained much less regulated than banks, which played a major role in the diffusion of the present financial crisis.

The importance of Freddie Mac was increased by its creating the first collateralized mortgage obligation (CMO) in 1983. It meant the forming of bond tranches where only a cer-

tain part of the money flows originating from the common financing pool assigned to a tranche provides cover. Therefore, the organisation of a market like this is reminiscent of the secondary market of government securities, and in fact it is also directly related to it: for example, it is operated by the same dealers, active and passive repo transactions can be concluded the same way etc. These initiatives achieved great success, and by 1985 the turnover of the market exceeded that of the New York Stock Exchange (Kohn, 2003).

These financial innovations that play an important role in the supply of the modern US capital market with funds have become determinants in the financial crisis that has developed by now. It is worth pointing out how important the role of politics was in the development and shaping of the mortgage market. Considering that they collect local savings, the US legislature put the banks under an obligation to spend a portion (10 per cent) of their funds on local financing in any case. One of the expedient solutions is the satisfaction of households' demands, as they are local, accordingly the law is also complied with. And, as we have seen, since the state and semi-state institutions provided implicit guarantee, lenders also extended their activity towards the population with less high income with a relatively high level of courage. It was particularly true in those periods when interest rates became very attractively low as a result of the global liquidity abundance, and even the poorer strata of the population wanted to realise the American dream, i.e. having a home of their own.

However, on the occasion of the current crisis, privately-owned institutions were obliged to acknowledge that they would be placed under state supervision, because by accepting subprime clients they had accumulated such high losses of capital that they needed assistance from the state. In the US practice, this measure is called *conservatorship*, which actual-

ly means placing under supervision, i.e. practically speaking a looser form of nationalisation.

FINANCING OF HOME CREATION IN EUROPE; THE GERMAN EXAMPLE

On our continent home financing is typically based on direct banking relationships. Here the financial cover was raised by 'building societies' and then by the combination of banks that provided long-term mortgage loans.

According to the German example, those who wish to have a home of their own collect the initial amount through the advantageous and state-subsidised method of a building society. For this, they receive a favourable borrowing opportunity from the building society, and then the initial amount and the loan together are accepted as one's down payment by the mortgage bank that provides long-term financing. Building societies receive state subsidy as well to raise funds with more advantageous conditions. Mortgage banks, in turn, usually raise funds by issuing mortgage bonds. Obviously, as a result, interest rate fluctuations in the international money market seriously affected this sector as well. Therefore, it is not by chance at all that following the outbreak of the current crisis, Hypobank, the large mortgage bank was the one that ran into the biggest trouble. The advantage of a building society is that its members are seriously compelled to save, as they simultaneously have to pay the rent and the instalments to the building society. When this tough period is over for the – usually young or middle-aged – client, then (s)he does not pay much more as instalment than the rent was. Accordingly, there will be some kind of harmony between rents and instalments. Consequently, by the time the debtor has paid the instalments protracted for several decades, (s)he may reach retirement age. At this point, however, a substantial

amount of income becomes available, as the rent and instalment no longer have to be paid. Accordingly, elder people, even if their pension is a little bit lower than their labour income was, do not have to significantly reduce their standard of living. Discernibly, there is a long-term conception behind this institutional system, which takes into account the life and income cycles of the population. Naturally, this scheme is able to function without problems only if inflation is low, because increasing interest rates would make the initial burdens much heavier, and thus the whole building society model would be unable to operate properly. Consequently, there must be harmony among economic, social and monetary policies. Therefore, it is clear why the German monetary policy – and thus the most important economic factor of the euro area – insists on maintaining low inflation to such an extent. Of course, we do not want to claim that this is the only reason for the anti-inflationary monetary policy objective of the European Central Bank, but it seems indisputable that the aspect of real estate financing is also very important in it. Nevertheless, the home ownership rate in Germany is much lower than, for example, in Hungary following the political transformation; this was especially true after the municipality-owned flats had been sold. It means that it is not a problem to rent a flat in Germany, as the supply is sufficient, and people can afford it from their salaries. The underlying explanation is that the German social security system essentially covers only those who earn wages or salaries. Entrepreneurs operate their own saving schemes as well, within, or as a part of, which very many people put their savings in residential real estate that they sublet on a long-term basis. Consequently, the supply of tenement flats is rich, sufficient and affordable for most of the population. No wonder that mainly only those with a higher income strived for home ownership; fortunately, in the current

crisis the specific German financing model mitigated insolvency problems in Europe.

HOUSEHOLD WEALTH AND CONSUMPTION LEVEL

As it is widely known, the money of modern economy is money based upon credit. It is created with credit, and ceases to exist upon its repayment. Textbook examples usually mention the case when the aim of borrowing is the financing of enterprises. Of course, money can be borrowed not only for expanding production or for investment, but for consumption as well. In this case, consumption is brought forward at the expense of our future incomes. However, the decisive portion of loans to households is used for purchasing real estate, which is an important element of private property, while the remaining part of loans is spent on increasing current consumption expenditures. The principle of ‘proprietary solicitude’ requires banks to provide loans with adequate prudence and against appropriate collateral. The possibility of a mortgage is self-evident in housing financing. On the other hand, in the case of consumer credit, the bank usually examines the potential borrower’s income situation, the security of his/her sources of income etc. In developed markets, however, not only buying real estate from a loan, but also the opposite of it, i.e. borrowing and using the real estate as collateral also occurs. This, in fact, means that the savings embodied in the property are used up in the present, if, for example, no sufficient savings are available for future repayments. A very concrete example of this is the so-called *reverse mortgage* pension scheme. It means that by changing the ownership of the real estate to an annuity, elderly citizens also allow companies specialising in this business to obtain ownership.

Reverting to bank loans, the crucial point is always the value of the real estate that is pledged

as a collateral of the loan. The most important thing of course is how this real estate value will change as a result of the demand and supply conditions in the market. This is why it has become a popular form of increasing current consumption that in view of and having an increased collateral value, the mortgage loan is raised to or replaced by one of a higher amount. And as the property has already been mostly paid for, the free part of the increased loan amount can even be spent on consumption. Therefore, ultimately, the same dwelling – as collateral – plays a decisive role either when it is used as collateral for purchasing housing, or when consumer credit is provided with real estate as collateral.

Normally, the bank is repaid the loan with interest, as the money is usually received, even if the property has to be sold for it. Except if real estate prices start to fall, i.e. an earlier real estate bubble bursts. If, for some reason, masses of borrowers become unable to repay their respective debts, banks are also compelled to sell the real estates by auction, one after the other, because prices in this case decline sharply, resulting in increasing losses for those creditors that wait for too long. This was practically the case at the beginning of the crisis in 2008. However, the magnitude of the problem caused by the collapse of real estate prices largely depends on the financing system and the level of institutional development of the given economy.

TYPICAL RELATIONSHIP BETWEEN HOUSEHOLDS' WEALTH AND CONSUMPTION LEVEL

Household wealth primarily consists of financial investments and real estate wealth (housing wealth). The value of housing wealth as a proportion to disposable income is much higher in the euro area than in the United States of America, while in terms of financial wealth the situation is just the reverse.

At the same time, the indebtedness of European households with its rate of 60 per cent lags far behind the more than 100 per cent ratio of the United States of America. In the euro area, the ratio of net wealth to disposable income increased from the level of 530 per cent in 1999 to 640 per cent in 2007. The increase in wealth to be invested in one's own home played a decisive role in the developments in households' net assets, as the ratio of the value of housing wealth to disposable incomes increased by some 4 percentage points between 1999 and 2007. During the same period, the ratio of indebtedness to disposable income also increased markedly, by 20 percentage points, from 40 per cent to 60 per cent. Accordingly, the increase in financial wealth amounted to half of the indebtedness at most, and this ratio displayed a much higher level of volatility in households.

The ratio of private consumption to disposable income is lower in general in the euro area than in the United States of America (ECB, 2009b). The traditions of household savings are significant in the euro area, while it is not so typical any longer – especially in recent decades – in the United States of America. Of course, in the 1980s and most of the 1990s, consumption grew together with the value of housing wealth in Europe as well. However, in recent years the European trend of consumption fell behind the upswing in real estate values, and thus co-movement with financial wealth has become more typical.

All in all, the correlation between consumption and housing wealth is not very strong in the whole of Europe either. Of course, there are significant differences among countries in terms of their housing wealth, and it also has to be taken into account that the developments in housing prices are closely linked to demographical trends as well, evidently through the generational demand. In addition, wealth effects, which stem from the developments in real estate prices, primarily affect those who already own a flat or

house. The ratio of owner-occupied homes within the total population is a good approach for estimation. However, this ratio strongly varies on our continent; for example, it amounts to 44 per cent in Germany and to almost twice as much (83 per cent) in Spain.

The wealth effect also depends on the ratio of the given loan to the total value of dwellings. The higher this ratio, the greater the effect of the developments in real estate prices on the magnitude of further borrowing may be. The usual and average value of the coverage is around 80 per cent in Europe, i.e. banks provide this much credit compared to the value of the dwelling. However, it became only 60 per cent in Greece, while the borrowed amount may even exceed 100 per cent in the Netherlands. The difference may be explained by the sophistication of public guarantee systems or the lack thereof. Where one exists – see the Netherlands or Finland, for example – banks dare to lend in higher ratios as well. It is also important how easy or difficult it is to collect the debts from defaulting debtors through real estate auctions.

The costs of early repayment (i.e. earlier than laid down in the contract) and the possibility or exclusion thereof also play a role in the unfolding of the wealth effect. Since if it is possible to repay a loan from another loan, using the same real estate as collateral and paying reasonable fees and costs, the opportunity of additional borrowing resulting from the increase in real estate prices can be used for consumption as well. However, the differences across countries are remarkable in this respect as well. The wealth effect is also facilitated if selling real estate is relatively simple and cheap, as this is also a way to rapidly recover the savings from the real estate.

The indicator that summarises all these factors best is the change in the ratio of total housing loans to GDP, as it reflects the impact of several influencing factors. Within the euro

area, this ratio ranges between 8 per cent in Slovenia and 68 per cent in the Netherlands. However, it can be established in any case that the ratio of lending for housing that threatens with possible mass insolvency is substantially lower in the euro area than in the Anglo-Saxon countries.

The effect of real estate prices on tenants is, of course, contrary to the interests of the owners. An increase in rents triggers a reduction of the consumption of the former, while the latter can spend more. Naturally, it also depends on the level of regulation of rents, and as something of the kind exists in most countries; this factor of the wealth effect can only prevail to a limited extent.

Surveys were conducted and estimates were made regarding the developments in marginal willingness to consume taking place as a result of an increase in wealth. Accordingly, it is 6–19 cents/dollar in the United States of America, 9 cents/dollar in Canada, 4 pence/pound in England, 2 cents/euro in Italy, i.e. an increase in wealth measured in one unit of the local currency adds this much to general consumption. Consequently, on the whole, this wealth effect is always greater in the country that has a more developed financial system. This is also one of the reasons why sensitivity to house price shocks is lower in the euro area, which insists more on traditional savings, than in the Anglo-Saxon countries, which are accustomed to a more developed, more modern and more sophisticated financial culture (ECB, 2009/a).

CHANGES IN THE FINANCING OF HOUSEHOLDS IN THE USA AND IN THE EURO AREA (2000–2008)

The debt level of households was already relatively high in both areas in the period under review. In the euro area, it was stable between 2000 and 2002, before increasing strongly

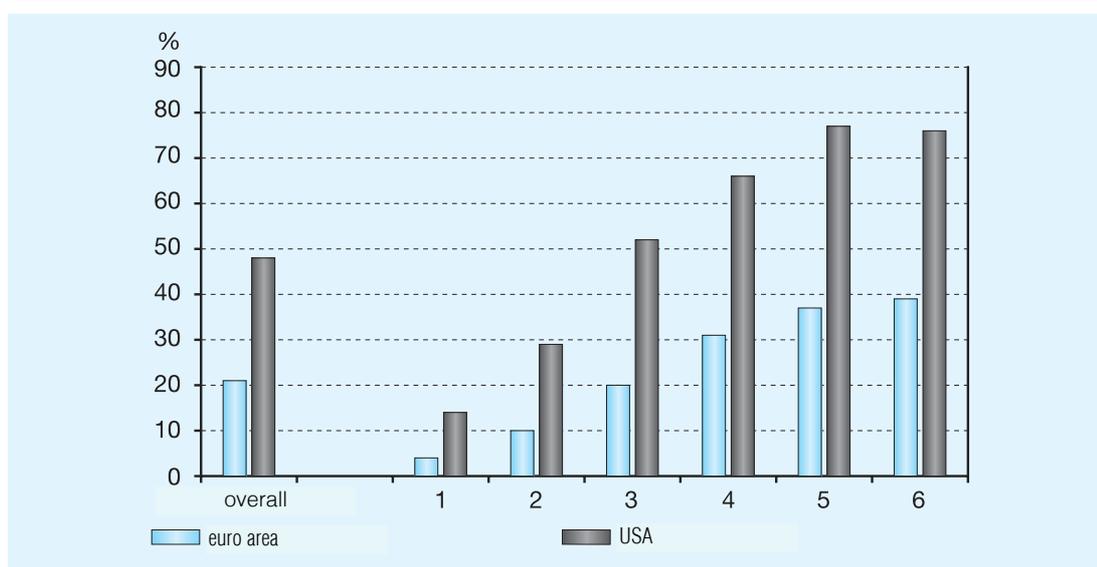
between 2003 and 2007. By the beginning of the last quarter of 2008, household debt in the euro area amounted to 93 per cent of the disposable income, compared to 130 per cent in the United States of America. Accordingly, the data suggest a favourable financing situation and strengthening real estate market trends in Europe. Starting from the turn of 2007/2008, the debt level began to stagnate, in which the restraint of mortgage loans played an important part. (This was already closely related to the crisis, as real estate prices had started to fall.) As a result of the convergence process, both inflation and interest rates declined in the euro area in the years preceding the crisis. Consequently, credit became cheaper, contributing to an increase in household debt.

Household debt is higher in the United States of America, which also means higher debt service. This is also shown by the fact that 48 per cent of US households had mortgage loans in 2004, while only 20 per cent had mortgage loans in the euro area in 2005. The devia-

tion was observed in all income classes, but the difference between the indebtedness ratios of the highest and lowest income bands due to real estate was already fourfold. (See Chart 2) This and the fact that households in the United States of America have several other loans in addition to mortgage loans meant that they were much more vulnerable, and not only financially. Between 2004 and 2007, experts observed further involuntary replacement and renewal of mortgage loans among the poorest, which by then was already related to rescheduling. Earlier, fixed-rate mortgage schemes had been widespread in the United States of America as well, but in the period between 2004 and 2007 indexed, variable rate conditions with low initial interest rates gained more and more ground. This was based on the unlimited trust in the boundless increase in US real estate prices. The decline was partly triggered by the fact that lending simply came to a sudden halt, and thus further investment could no longer be financed.

Chart 2

SHARE OF HOUSEHOLDS WITH MORTGAGE DEBT BROKEN DOWN BY INCOME LEVEL



Note: according to number of inhabitants belonging to income categories; the categories increase by 20 per cent each, each of the last two include the upper 10 per cent of the population.

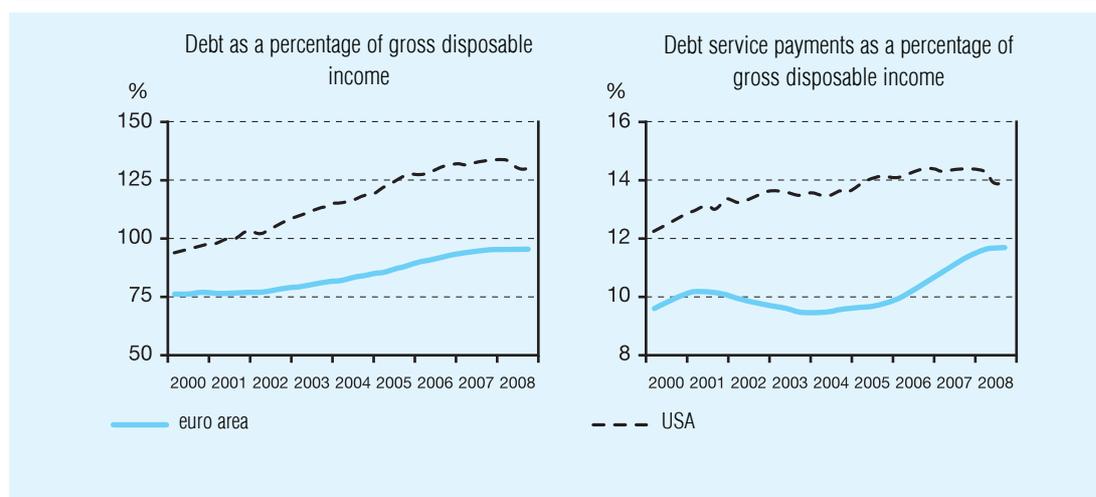
Source: ECB (2009c), p. 75

By contrast, in the euro area the significance of the withdrawal of lending became much lower on average, despite the fact that flexible-rate mortgage loans in some countries that had experienced a real estate boom played an even greater role than in the United States of America. Overall, however, risk exposure of households was still higher in the USA. This is especially well justifiable with and discernible from the developments in savings rates: while the personal income benchmark had been around a stable 13–15 per cent in the euro area since 2000, in the United States of America it stagnated around a mere 4 per cent or even sank below that in certain years. (See *Chart 3*) It means that in the period of benign business conditions the average increase in households' net wealth in the euro area could exceed that in the USA. The data also reveal that while households in the euro area as a whole got stuck in a net lending position, households in the USA found themselves in a net borrowing position. (However, the ratio of liquid financial instruments to debt was higher in the United States of America, which may have helped more people to survive.)

Real estate financing was on the wane in the euro area between 2000 and 2003, while it was already stable in the United States of America. As a result of favourable changes in loan conditions all over the world, similar benign developments in economic activity took place in both areas between 2003 and 2006. However, between 2007 and the third quarter of 2008 the increase in real estate prices slowed down everywhere, the demand fell, and the availability of funds tightened, resulting in a decline in the financing of new constructions. In spite of the essentially very similar trends, many different phenomena were also observed. For example, bank loan financing reached its peak in the euro area as early as the beginning of 2006. By contrast, in the United States of America additional funds were provided to households by the government-sponsored housing loan institutions until 2003 and then by private equity-backed offerings between 2004 and 2006. Together with the fall in real estate prices and the increase in interest rates they only exacerbated the evolving financial crisis. From the second quarter of 2008 on, the direction of private offerings reversed, and from then only the government-sponsored

Chart 3

HOUSEHOLD DEBT AND DEBT SERVICE PAYMENTS



Source: ECB (2009c), p. 75

Fannie Mae and Freddie Mac programmes tried to maintain the financing of households, albeit without much success.

The direction of the process of securitisation of loans was also similar in both regions, but with different magnitudes and ratios. Although the annual transactions doubled every year between 2003 and 2006, they amounted to a mere 3 per cent of GDP in the euro area, compared with 17 per cent in the USA.

Accordingly, households' debt level was high in both areas in the period under review. It had been stable in the euro area between 2000 and 2002, but increased strongly between 2003 and 2007. It reached its peak by the beginning of the last quarter of 2008, i.e. the already mentioned 130 per cent in the United States of America, compared with the level of 93 per cent in the euro area. The then data still promised a favourable financing situation and strengthening real estate market trends, but not for long.

CLOSING THOUGHTS

Fixed-rate mortgage schemes had been widespread in the United States of America earlier.

In the period between 2004 and 2007, adjusted variable rate conditions with a low initial rate became increasingly popular; they were based on the unlimited trust in the boundless increase in real estate prices. One of the reasons for the decline was that lending came to a sudden halt, and thus further investment could not be financed the same way any longer. By contrast, the withdrawal of lending was of much less importance on average in the euro area. Overall, however, households in the United States of America were still more exposed to risk, which is mainly proven by the developments in savings rates: while the indicator had been around a stable 13–15 per cent in the euro area since 2000, in the United States of America it was a mere 4 per cent. The data also reveal that while households in the euro area found themselves in a net lending position, households in the USA got into a net borrowing position. However, fortunately for a part of the US population, the ratio of financial instruments to debt remained relatively high there. And this high liquidity saved millions of middle-class Americans who overborrowed in the period of lending for housing that fulfilled the American dream of the previous decade.

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István Benczes – Gábor Kutasi

Crisis and consolidation

Is there a way back to fiscal rules?

For long decades, it had been a prevailing opinion in economic science that the state has to formulate its classical functions – such as stabilisation, allocation and redistribution – in a discretionary manner, i.e. conforming and reacting to the current circumstances. In the past decades, however, more and more developed and emerging economies chose the way of limiting the discretionary policy with rules. While prior to the early 1990s fiscal rules had been introduced only in some and decisively developed countries, in the last two decades – not irrespective of the waves of indebtedness of the 1970s–1980s and the start of monetary cooperations (especially the European Economic and Monetary Union) – an increasing number of states decided on applying fiscal policy rules. In 1990, only seven countries used national-level rules. Barely twenty years later, already some eighty states limited the scope for action of their respective fiscal policies in this manner (Kumar et al., 2009).

It is an undeniable fact that, by definition, an ad hoc economic policy is a more flexible or even more efficient means of stabilisation than rule-based policy, which requires commitment, and can only be considered as the second best solution (Barro and Gordon, 1983). Nevertheless, numerous countries were of the opinion that the additional benefit stemming from following

the rules would be able to adequately compensate for the lost opportunities, which is reflected, inter alia, in the strengthening of long-term fiscal sustainability. The popularity of fiscal policy rules – similarly to the rules implemented in monetary policy, then to institutional independence – was primarily explained by the fact that their use allowed the control of the self-centered discretionary policy, which jeopardised social welfare. The introduction of the rules paved the way for depoliticising budget policy (Kopits, 2001).

The popularity of fiscal rules had proven to be unabated all the way until the economic crisis that erupted in the USA in the spring of 2008, and subsequently became global, gained ground. *The responses to the crisis*, which basically concentrated on artificial incentives to aggregate demand, especially on making money cheap and on the upswing in fiscal expenditures, *put rule-following economic policy in brackets in most countries* for quite some time. Almost without exception, the countries affected by the crisis started to refer to the various relief clauses or, if such did not exist, simply ignored the limits posed by the rules.

In our paper – which is based on the research results and findings in our recently published book entitled *Költségvetési pénzügyek (Fiscal finances)*¹ – we examine what *could have justi-*

fied the application of discretionary economic policy following the crisis and together with this the violation of fiscal policy rules that had previously been said to be successful, and *whether there is any return to rule-based economic policy*. First, the crisis is outlined in brief, then the practical side of crisis management is scrutinised, reviewing the reactions of the USA and the large decisive countries of the EU. Finally, the forms of actual use of fiscal policy tools are evaluated with the obvious intention to prove that there is a way back to fiscal discipline.

CONNECTION POINTS BETWEEN THE CRISIS AND PUBLIC FINANCES²

Prior to the crisis, a sizable real estate market boom and bubble evolved in the USA.³ Owing to expectations regarding price increases, it was possible to encumber real estate with additional (*subprime*) mortgage borrowing. Demand for real estate of a speculative nature (not with an intention to live in, but to rent or sell at a higher price) increased substantially, which pulled real estate prices upwards, and increased the ratio of real estate intended to be sold in the short or medium term within the stock of real estate.⁴ Mortgage loans were financed by financial institutions by issuing mortgage bonds, in the forms of various so-called mixed mutual fund shares and bonds, which then were typically included in the highest categories by rating agencies. However, these ‘structured’ debt bonds represented the AAA quality, which is considered risk free, to a lesser extent, and were typically included in the category of the so-called junk bonds. The ‘packaged’ securities, in turn, were bought up in good faith by numerous US and European financial institutions as well as investment and pension funds.

The international shock triggered by AIG and Merrill Lynch, which in September 2008

took refuge in chapter eleven, and by Lehman Brothers, which asked for protection in vain, entailed two important consequences. First, confidence among financial institutions was shaken, which froze the functioning of the interbank credit market for a short time, and contained it in the medium term as well. Second, it was also unclear what exactly would happen to the financial giants that got into a difficult situation. The financial institutions that went bankrupt were either to be liquidated (as it happened to Lehman Brothers), leaving large amounts of debts behind and risking a rippling bank panic; or the state would make up for the funds that disappeared in the bond market. An argument for liquidation would have been that banks with a bad capital structure would have disappeared from the markets in a relatively short time, and the money market would have rapidly punished and terminated the hidden defects of the banking system. However, two peculiarities of the banking sector had to be taken into account: (a) liquidation results in further panic in the market, and (b) non-financial enterprises cannot effect payments to one another, or cannot borrow from others’ savings. Therefore, in terms of economic strategy, owing to the unforeseeable risks, bank consolidation and replenishing the banking sector with money in the USA became inevitable in the short term.

Following the developments outlined above, the economic crisis, which became global by the autumn of 2008, resulted in a shrinkage of the gross domestic product, or at least in a deceleration of its growth rate. The downward branch of the growth cycle started: employment declined, households lost a part of their income, which also resulted in a deterioration of their creditworthiness. The income loss and the deterioration in creditworthiness resulted in a considerable fall in the consumption of the private sector as well. This process was exacerbated by the fact that

the household sector, seeing the protracted nature of the crisis, was not only unable to spend its lost income, but it even increased (more precisely: it had to increase) its reserves (savings) compared to the previous years in order to finance living in the medium term and to mitigate the risks of indebtedness. For the corporate sector all this meant a fall in demand for products/services, triggering and strengthening a decline in employment. At the same time, the declining demand also entailed a considerable fall in prices, not only in the markets of energy inputs, but also in the markets of finished products, consumer durables, food and real estate. Following from the demand/supply correlations of the commodity market, the declining prices – depending on the extent of price elasticity – encouraged enterprises that produced the supply to cut their output. And this can be done by using fewer employees as well. *Therefore, the global economy was compelled to face a shrinkage spi-*

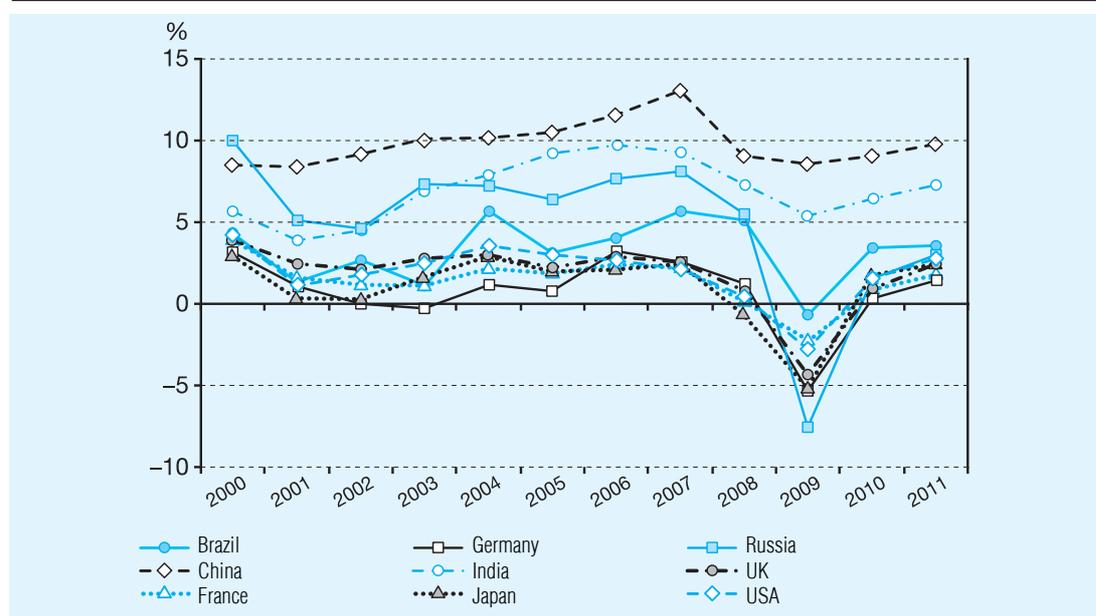
ral in which the reduction of consumption and the termination of jobs could become mutually reinforcing developments, which was exacerbated by the danger of deflation. Chart 1 depicts the changes in economic performance in the 2000s.

As the US economy, which absorbs around one fifth of the world trade as imports, was the first to be affected by the slowdown/shrinkage, the fall in demand made its impact felt in other parts of the world as well through trade relations within a relatively short time. As a result, in the last quarter of 2008 world trade already fell by 6 per cent compared to the last quarter of the previous year (WTO, 2009). As the growth of Europe and of the developing and emerging economies is also of a strongly export-oriented nature, the shrinking of the demand in the US market imposed a significant burden on the economies of these countries as well.⁵

Thus the US financial crisis of 2007 already led to a crack in the global loan market and to

Chart 1

ECONOMIC GROWTH IN MAJOR ECONOMIES OF THE WORLD, 2000–2011



Note: change in GDP, per cent. The year 2009–2011 values are based on forecasts.
Source: IMF (2009a)

the shrinking of the real economy by 2009. Distrust prevailed in global credit markets, financing the public debt in certain countries posed significant challenges, as a result of risk aversion investors were fleeing from the market of lower-volume currencies, which resulted in considerable depreciation and monetary crisis. Partly as a result of the real estate market shock and partly as a consequence of the depreciation of national currencies, the ratio of non-performing household loans also increased. Governments were compelled to apply expansive solutions to stimulate the economy in a creative manner, first of all to prevent the financial sector from collapsing.

The Fed already reached the zero interest rate level in the last quarter of 2008. The objective was to supply the economy with cheap money and discourage the saving of income to an extent that would result in a recovery in domestic consumption. Besides the zero interest rate level, *the only active tool that remained in the hands of economic policy makers was the fiscal adjustment channel.*⁶ Banks were saved using budgetary sources and public investment was increased significantly in order to offset the fall in household consumption.⁷

Damages occurred from a money market standpoint as well. *A substantial stock of bad debts evolved; moreover, through the transmissions of securitisation it also deteriorated the bond market, and the holdings of investment funds also suffered a serious loss in value through the bond market.* The US federal government had to rescue banks. Some banks were compelled to merge. Between September 2008 and February 2009 the interbank credit market froze, i.e. in view of bankruptcies of banks, commercial banks did not dare to lend to one another either. As a result, bank transactions of non-financial corporations also became partly impossible. This solvency trap, in turn, affected inter-company trade as well.

Some of those who analyse the 2008–2009 crisis compare it to the Great Depression in 1929–1933. One of the clearest similarities between the two crises is that fiscal expansion was the main tool of crisis management 75 years ago as well. This form of government incentives also played a role in the 2008–2009 crisis. However, it must be emphasised that the current global crisis – contrary to the Great Depression in the USA in the thirties – occurred as the aggregate of several known institutional and fundamental problems of money-market, general government, monetary policy, supervisory and sectoral nature, which had always been neglected by influential political decision-makers before 2007. The 2007–2008 US mortgage market crisis – as it turned out later – rather served as a focal point only, which subsequently partly buried under itself the financial systems as well, and resulted in a decline in real economy.

CRISIS MANAGEMENT IN PRACTICE

By 2009 and 2010, the global economic crisis that occurred in 2008 significantly overwrote the budget policy trend intended to be followed originally in the developed and emerging economies. Earlier efforts to attain fiscal equilibrium were relegated to the background, and stimulation of the economy became the main objective in the short term. International organisations (including the International Monetary Fund and the European Union as well) practically accepted the barely limited expansion, although emphasised that they consider it justified only temporarily.⁸ However, the method of crisis management was not the same at all in the influential centres of the world. While the USA stood up for the stimulation of aggregate demand with monetary and fiscal means, Europe strived to redraw the financial architecture.

USA

Since 2008 the US central bank – and budget policy as well – *have been trying to offset the economic downturn in an anti-cyclical manner*, stimulating aggregate demand in various ways. It must be emphasised, however, that the US economic policy between 2000 and 2007 was strongly pro-cyclical, because in the period of economic growth (i.e. between 2003 and 2007) it was heated artificially (as well) by the state with the tax reduction programme and the increasing of military expenditures.⁹

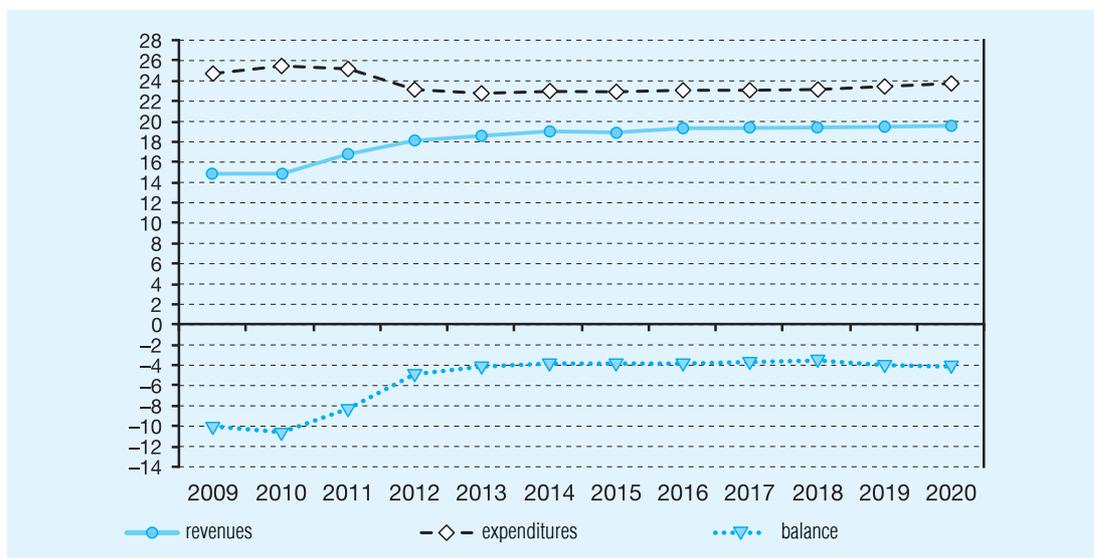
The Fed, which plays the role of the US central bank, set the central bank base rate to zero already in December 2008. Therefore, economic policy makers of the USA *could only use the means of public finances for further incentives*. In 2009, the deficit of the federal budget amounted to 9.9 per cent of the gross domestic product, which – considering the very low redistribution rate (24.7 per cent of GDP) – means

that 40 per cent of public expenditures in 2009 was covered by government bonds issues. The deficit of unprecedented magnitude was the result of a two-directional process. First, expenditures as a proportion of GDP increased from 20 per cent, which had been typical of the previous years, to 24.7 per cent. Second, public tax revenues declined from 18 per cent to 14.8 per cent.

The question arises: *How is the USA able to finance this extraordinary degree of deficit and indebtedness?* The answer is complex. First, the US budget – as a result of, inter alia, the zero central bank base rate – can obtain funds from international money markets extremely cheaply. The yield on two-year government bonds remained continuously below one per cent during the crisis, but that on the five-year ones did not reach two per cent either. Second, despite or precisely because of the crisis, high demand evolved in the market of US government bonds, as financial investors

Chart 2

SCHEDULE TO RESTORE EQUILIBRIUM. LONG-TERM BUDGET PLANS OF THE WHITE HOUSE IN 2010



Note: data as a percentage of GDP

Source: Office of Management and Budget, White House, U.S. Government Printing Office

consider these instruments the least risky. The underlying explanation is that the crisis undermined primarily the risk-seeking sentiment of previous years, thus resulting in a withdrawal of funds from those typically emerging markets that by now have become extremely vulnerable, which was not independent of the withdrawal.

The US government engaged in expenditure expansion in order to restore money market confidence and protect jobs, hoping that it would be able to return the US economy to the growth path as soon as possible. In 2008, an 8.1 per cent unemployment rate (equalling some 5.1 million people) was recorded in the USA, while the unemployment rate reached 10.2 per cent (6.4 million people) in 2009. Such a high value was last recorded in the USA in 1983. (U.S. Bureau of Labor Statistics, U.S. Department of Labor).¹⁰ Therefore, one of the main objectives of the economic incentive programme became to keep four million jobs. The government tried to achieve this aim mainly through construction, by launching infrastructural investment, and by rescuing automobile manufacturers from bankruptcy.

Beyond the bank rescue packages, *the deficit increasing programme of the USA cannot simply be considered as rehashing the traditional Keynesian economy stimulating policy, but – to some extent – as a change in conception and shifting of accent* in the US market economy. Thus the new emphases fell on the extension of health care, the wider scope of public financing in education, the enhancement of the spreading of clean, environment-friendly sources of energy as well as on raising the tax of those with higher incomes. Therefore, the success of crisis management in the USA mostly depends on how the social and environmental sustainability pillars can be reinforced within total consumption.¹¹

Nevertheless, the economic incentive plans for 2009–2010 follow the so-called Keynesian economic policy almost as it is written in the

textbooks, according to which the loss of market demand has to be offset by increasing public consumption and investment as well as by adding to households' income through tax reductions. However, crisis management in the United States also reveals one of the weaknesses and the source of the vulnerability of the development of the country: *the momentum of the economy is maintained by the consumers of its own, internal market*. This has been in the background of dynamic economic growth. Consequently, the limits of the incentive programme are clear-cut. *Neither the bank consolidation, nor the rescue of the automotive industry – in themselves – are able to rev up the US economy, as all this is only sufficient to keep alive those enterprises that otherwise went bankrupt (or are very close to bankruptcy)*.

The reason why infrastructural investments increase the performance of the economy over the long term is not that they come into being, but that they create an opportunity for the spreading of cost-effective or higher-capacity economic solutions. In the near term, however, precisely a fall in production can be observed. Consequently, no need for capacity expansion is shown. *Accordingly, the crisis management package of the USA is based on the requirement that the economy should be able to survive the temporary crisis with a relatively small loss*. Therefore, the key to success, *inter alia*, is for money market confidence to be restored as soon as possible. This may ensure continuous money supply and credit supply (i.e. liquidity) as well, and banks will also extend loans to one another with (more) confidence. Only if this process gets underway could there be a chance that the government's investment projects will result in additional demand and that the private sector will create new capacities and jobs. The produced additional income, in turn, may spill over as purchase orders or household consumption to other sectors as well.¹² (See Chart 2)

Large states of the EU

The US financial crisis that had unfolded in the middle of 2007 reached the European states as well by the autumn of 2008, and even the largest economies of the single European market faced deflation and economic downturn. Most of the EU Member States, including the largest ones, were compelled to give up their equilibrium targets undertaken in their respective stability and convergence programmes and to introduce economic incentive packages to offset the shrinkage in consumption, the decline in production and the number of jobs as well as the collapse of key sectors. As it is shown by the estimate of the European Commission's Directorate General Economy and Finance (*see Table 1*), 2007 and 2008 were the years of slowdown, while 2009 was the year of shrinkage for the EU. Only slow recovery can be expected in 2010 and 2011 as well, and in

2011 the Community will only reach the pre-2007 output level. As a result of the growth trend diverted by the crisis in the medium term as well, employment will also deteriorate indefinitely (in the medium term). *Accordingly, the stimulation of the economy financed from the indebtedness of the general government may only attain partial results, and in the 2009–2011 period will be unable to neutralise the loss in output.*

As it is shown by the cyclically adjusted and structural values in *Table 2*, the stimulation of the economy that offset the crisis swung out the EU, and within that the euro area, from the state of budgetary equilibrium in the medium term as well. As a result, 2010 and the following years are expected to be spent with the challenges of managing the increasing public debt and terminating the large discretionary expenditure items.

The recovery of the 'large Member States' that represent the driving force and internal

Table 1

MAIN AGGREGATE MACROECONOMIC INDICATORS OF THE EU AND THE EURO AREA

(%)

	2006		2007		2008		2009*		2010*		2011*	
	EU	euro area	EU	euro area	EU	euro area	EU	euro area	EU	euro area	EU	euro area
Changes in GDP	3.2	3	2.9	2.8	0.8	0.6	-4.1	-4	0.7	0.7	1.6	1.5
Changes in private consumption	2.2	2	2.1	1.7	0.8	0.4	-1.7	-1	0.2	0.2	1.2	1
Changes in public consumption	2	2.1	1.9	2.3	2.2	2	2	2	1	1.1	0.6	1
Changes in total investment	6.2	5.5	5.9	4.8	-0.3	-0.4	-11.4	-10.7	-2	-1.9	2.5	2.1
Changes in employment	1.5	1.4	1.7	1.7	0.9	0.6	-2.3	-2.3	-1.2	-1.3	0.3	0
Unemployment	8.2	8.3	7.1	7.5	7	7.5	9.1	9.5	10.3	10.7	10.2	10.9
Inflation	2.3	2.2	2.4	2.1	3.7	3.3	1	0	1.3	1.1	1.6	1.5
Balance of the budget (as a percentage of GDP)	-1.4	-1.3	-0.8	-0.6	-2.3	-2	-6.9	-6.4	-7.5	-6.9	-6.9	-6.5
Public debt (as a percentage of GDP)	61.3	68.3	58.7	66	61.5	69.3	73	78.2	79.3	84	83.7	88.2
Balance of current account (as a percentage of GDP)	-1.2	-0.1	-1.1	0.1	-2	-1.1	-1.7	-1	-1.5	-0.8	-1.3	-0.7

Note: *end-2009 estimate and forecast

Source: EC (2009a)

Table 2

CHANGES IN BUDGET BALANCE INDICATORS IN THE EU AND THE EURO AREA

(%)

	2008		2009*		2010*		2011*	
	EU	euro area	EU	euro area	EU	euro area	EU	euro area
Total revenue	44.6	44.8	43.4	44	43.2	43.7	43.2	43.7
Total expenditure	46.8	46.8	50.4	50.4	50.6	50.5	50.1	50.2
Balance of the budget	-2.2	-2	-7	-6.4	-7.4	-6.8	-6.9	-6.5
Interest payment obligation	2.7	3	2.8	3	3	3.2	3.2	3.4
Primary balance	0.5	1	-4.2	-3.4	-4.4	-3.6	-3.7	-3.1
Cyclically adjusted balance of the budget	-3.2	-2.9	-5.5	-5	-6	-5.5	-5.7	-5.3
Cyclically adjusted primary balance	-0.5	0.1	-2.7	-2	-3	-2.2	-2.5	-1.9
Structural balance	-3.1	-2.8	-5.4	-4.9	-5.9	-5.3	-5.7	-5.3

Note: *end-2009 estimate and forecast. Data as a percentage of GDP

Source: EC (2009a)

Table 3

COMPARISON OF DISCRETIONARY ECONOMIC STIMULATION PACKAGES OF EU MEMBER STATES

	Budgetary package total		Expenditures		Budgetary package total		Expenditures	
	(EUR billion)		(EUR billion)		(as a percentage of GDP)		(as a percentage of GDP)	
	2009	2010	2009	2010	2009	2010	2009	2010
Austria	4.9	4.6	1.4	1	1.71	1.63	0.48	0.36
Belgium	1.3	1.2	0.9	0.8	0.36	0.33	0.27	0.24
Germany	25.9	48.4	18	13.6	1.44	1.93	0.72	0.54
Greece	0	0	0	0	0	0	0	0
Spain	26.8	14.7	12.1	0	2.44	1.34	1.1	0
Finland	2.4	2.4	0.4	0.4	1.25	1.25	0.23	0.23
France	17	4	16.3	4	0.87	0.2	0.83	0.2
Ireland	0	0	0	0	0	0	0	0
Italy	-0.3	-0.8	3.1	0.2	-0.02	-0.05	0.19	0.01
Netherlands	3.1	2.9	0.2	0	0.53	0.49	0.03	0
Portugal	1	0.3	0.9	0.3	0.6	0.18	0.54	0.18
EU-11	92	77.6	53.2	20.4	1.01	0.85	0.58	0.22

Source: Cwik and Wielander (2009)

market of the EU (Germany, Great Britain, France and Italy) is an especially important element of the recuperation of the single European market from the shock caused by the crisis. In view of their relatively homogeneous economic and economic policy structures, nearly the same solutions cropped up in the management of the crisis as well. As a result of

previous years' similar economic policies, which strived for budgetary equilibrium and price stability, these four countries have had to cope with similar problems. In each country under review, deflationary processes began in the fourth quarter of 2008 and in the first quarter of 2009, and there was a danger of the start of a deflationary spiral, i.e. that the declining

prices would result in a further shrinkage of production instead of an expansion in consumption. The deflationary spiral could have further reduced the number of jobs and the wage bill paid, which, in turn, would have further deteriorated consumption demand. *All four governments attempted to break this deflationary vicious circle with tax reductions, income supports and public investment. In addition, the rehabilitation of two driving force sectors had to be carried out everywhere at the same time.* In the automotive industry, primarily the non-competitiveness problems of past decades strengthened as a result of the fall in demand in the global market (not only in Europe, but in the USA as well), while the banking sector succeeded in ‘conjuring away’ several hundred billion euros at a European level during the financial crisis, through US mortgage bonds as well as with the increase in default risk of loans to households in East and Central East Europe. (*Table 3 provides information on the estimated magnitude of stimulating the economy.*)

At the same time, the similarities also allowed the leading countries of Europe to jointly tackle international challenges that affected all four of them unfavourably, including, for example, offshore taxation or the ‘Buy American’ protectionist policy. It is another matter that the leaders of the four states criticised one another as well because of their protectionist measures. This criticism was primarily aimed at France and Italy, where – in exchange for government subsidies – automotive manufacturers ensure the maintenance of capacities and even the domestic implementation of capacity expansion planned to be done abroad. As far as the joint action is concerned, it mainly took the form of protesting against US protectionism and – on the initiative of former British Prime Minister *Gordon Brown* – a strict review of incomes flowing into tax havens. There was no community-level har-

monisation in the areas of the bank rescue¹³ or the stimulation of manufacturing, the reduction of taxes¹⁴ or expenditures that facilitate consumption. Thus, eventually, *no community-level crisis management aiming at the growth, reinforced with synergies, of the single market took shape.* Although it is true that at the banks consolidated from the German, French, Italian, Austrian etc. budgets primarily the non-performing loans in eastern Member States were reorganised, but instead of an attitude of stimulating the overall growth of the single market, Member States clearly strived to provide domestic incentives and keep jobs within their own respective countries. A good example of this is that the French automotive job creation deprived Slovenia, where labour is cheaper, of capacities. Although French jobs were saved this way, but only with a worse relative wage cost, resulting in a deterioration in the aggregate efficiency of the EU. The French government announced it only at the end of January 2010 that France and Germany were preparing a joint strategy for recovering from the crisis, which would harmonise the relevant EU policies in institutional and regulatory issues, namely in terms of improving the financial regulation and the reform of the international financial administration, and not in fiscal issues.

However, already when the crisis erupted, there was an important difference in the scope for fiscal action to stimulate the economy, and it was the magnitude of public debt. For example, at the end of 2008, the public debt to GDP ratio stood at 44 per cent in Great Britain (compared to 68 per cent in 2009). The relevant figures are 66 and 76 per cent for France, 76 per cent for Germany in both years, while Italy recorded 104 per cent and 114.6 per cent, respectively (IMF, 2009b and EC, 2009a). *The magnitude of indebtedness that had developed by then determined the magnitude and cost of the issuance of government securities allowed by the expenditure increasing and revenue reducing*

measures. However, this is influenced by the debt stock considered acceptable in individual Member States. The Italian government only received an international (IMF) warning, while the actors of British economic and political life already call the attention of the government to the hazards of the debt stock that is above 45 per cent. Accordingly, the crisis resulted in a strange convergence of the wrong direction: contrary to the value limit declared in the Stability and Growth Pact, Member States' public debt levels converge to 100 per cent of GDP or even to a value exceeding that in the period between 2009 and 2011. This 'convergence' is strengthened by the fact that the countries whose debt level had been lower at the outset of the crisis allowed themselves typically higher deficits.

Nevertheless, in connection with economic incentives it can be established that the large countries of the EU were basically cautious and self-controlled. The total volume of expenditures was also far below the amounts spent by the Bush and Obama Administrations on stimulating the economy and rescuing the banks. It was the Toronto Summit of the G20 when the difference of opinion between the USA and the EU on whether fiscal incentives or the management of the public debt risk is a better way to avoid/mitigate the W-shape crisis was sharply displayed. The clear position of the USA was that where public debt is at a sustainable level, and the government securities of the country concerned can be sold at a relatively low price in the market (the USA, Japan, Great Britain and Germany are considered to be countries like this), states should continue to apply fiscal incentives, and the EU, the IMF and other financial organisations as lenders of last resort should 'generously' allocate credit facilities. Nevertheless, politicians of the leading economies of the Union – perhaps precisely because of the financing and sustainability limits of public finances and the public debt – did

not (and do not) consider fiscal easing to be the (only) solution to overcome the crisis. In their opinion, the solution is rather the improvement of the institutional regulation and supervision of the international monetary system, aiming at the restoration of confidence in the interbank loan market.

*One of the greatest risks of further fiscal stimulus may be that it continues to strengthen the contagious nature of debt crises, deepens the already existing sustainability problems, and at the same time puts off the solution.*¹⁵ Of course, theoretically it is conceivable that market participants' confidence can be preserved in spite of further fiscal stimulus as well, in the event that it is announced together with a credible and long-term programme that creates equilibrium. However, the first decade of the euro area has proven that countries tendentiously deviate in a negative direction from their convergence and stability programmes aimed at fiscal equilibrium and sustainability. Moreover, the low central bank base rates and the generosity of international lenders of last resort (including the EU itself) most probably elicit the effect that the cheaper and higher credit lines give false information to decision-makers, indicating that the position of the general governments concerned can substantially be improved. This in turn ultimately strengthens moral hazard.¹⁶

FISCAL CONSOLIDATION FOLLOWING THE CRISIS

In connection with the economics of crisis and recovery, Csaba (2010, p.10) – quoting Lámfalussy's (2000) book analysing financial crises – concludes that individual downturns 'are of different natures and mechanisms. It means that they cannot adequately be treated with the cycle theory, which is popular in theoretical model creation as well, because the recurrent and

repetitive phenomena are not of the same, but of different natures.’ Consequently, comparing the current crisis to the Great Depression of 1929–1933 may also lead to misconclusions, if only because the then crisis management was much less coordinated and more against the market than the current one. The energy crises of the 1970s cannot be compared with the one in 2008 either. Namely, the former ones made it expressly clear that Keynesian tools are unable to treat structural distortions. The only effect of the expansion of aggregate demand is stagflation. In the case of the currency crises between 1997–1999, in turn, ‘a new model of financial crisis came into being [...], where the ‘fundamentals’, i.e. the fundamental growth and equilibrium indicators of the national economy, do not play a decisive role at all any longer’ (Csaba, 2010, p. 11).

Several scenarios have been prepared for how the current crisis will subside. The illusion of the so-called *V-shape crisis* was fed by the production expansion that started at the end of 2009. According to this approach, the worst of the crisis is over for the world economy, and a renewal of economic growth is only a matter of time. By contrast, in the opinion of those who forecast a so-called *W-shape crisis*, the upswing perceived from the second half of 2009 will be followed by another downturn, and an increase in economic performance is expected only after that, extending the crisis by up to two to three more years. Of the pessimists, *Krugman* (2009) compared the economic stimulus programme of the US general government to the unsuccessful practice of Japan in the 1990s. Although the Asian government rescued the banks then, it did not deal with the consolidation of the bad debt stock. Consequently, in view of the risk of further insolvencies, mistrust consolidated in the interbank credit market, and the Japanese financial supervisory authority started to rate bad debts as ‘defaulting’ only a decade later, from 2001 on (Callen and Mühleisen, 2003).

Since then, this phenomenon is called *L-shape crisis*, which means the protraction of a period without significant growth and with persistently high unemployment.

In terms of the actual, quantitative effects of fiscal policy there is high uncertainty in international literature. Namely, the problem is not only what econometric method is used for calculating the effects, but rather what the theoretical model or framework in which we try to interpret the effects is. *Those who argue for fiscal activism expect discretionary fiscal stimulus of their governments based on the Keynesian multiplier effect.* The multiplier effect, in turn, relies on the simple assumption that – assuming sticky prices – an increase in government expenditures results in a growth in national income (ideally not only to the extent by which the government increased its expenditures additionally). The effect can be derived from the well-known income equation and the Keynesian consumption function.¹⁷

If total expenditures grow as a result of additional government purchases, in a Keynesian model it adds to income, and increases the consumption of the private sector, which again adds to total expenditure etc. Inter alia, the traditional Keynesian model assumes that private consumption depends on disposable income, and is not affected by the individual’s path of life or future events and changes. It assumes that individuals are not far-sighted, rational persons, i.e. they do not take account of the future effects of additional spending in the present (for example that one day the government may be compelled to introduce tightening measures etc.). Moreover, in times of crises the Keynesian models also often assume that the crowding out effect does not succeed, as the central bank keeps the base rate low in order to supply the market with an adequate amount of liquidity.

However, many questions may be raised with regard to the reality of the Keynesian mul-

multiplier effect. *Do the zero base rate of the central bank and the inherent abundance of liquidity mean at the same time that enterprises are willing to implement additional investment? Are banks willing to lend to credit applicants and to one another? Do the investments that are implemented add to employment (or on the contrary: it is substituted with capital, for example to avoid the problem of downsizing in the time of a future crisis)?*

Keeping the central bank base rate at zero level may be a realistic assumption in a large country that has a relatively autonomous monetary policy, but it is not realistic in a small, open economy that cannot independently decide on the level of the interest rate, as it is determined by the willingness to finance of international money markets. Initial conditions may also prove important: if a state pursued an expansionary policy prior to the crisis as well, then during the crisis – especially if it also means a confidence crisis – it may easily realise that it is compelled to conduct a procyclical policy, as it happened, *inter alia*, first in Hungary, then in Greece as well.

However, over the long term the zero level of the reference interest rate cannot be guaranteed even in large, relatively closed economies. If individuals and corporations are far-sighted and pursue an optimising behaviour, they will take account of the future consequences of the current stimulation of demand, which is reflected in the magnitude of interest rates as well. Players in the private sector price all this already in the present (for example, in the form of positive long-term interest rates). As it is unreasonable to suppose that a company would not perform a cost/benefit analysis of the planned project (calculation of net present value) prior to the implementation of an investment, this behaviour should be true for all rational players, even in times of crises. And if individuals and corporations expect tightening in the future, they may now increase their savings, at present, and thus the multiplier

effect of the additional government spending may even dramatically subside. The weaker the liquidity constraints are in the economy, the stronger this effect is. Accordingly, in an economy, the lower the ratio of those who decide on their consumption on the basis of disposable income, the higher the probability of the postponement of consumption and thus of a decline in the multiplier is.

Relatively numerous studies have attempted to quantify the size of the fiscal multiplier. In their review of the relevant literature, *Hemming et al.* (2002) concluded that although the value of the multiplier is typically positive (at least in the short term), it is relatively low. The common denominator of the studies is that the fiscal multiplier of the USA was measured to be significantly higher than that of European states. Upon examining the large countries of the EU, *Roeger and Veld* (2002), for example, found that – assuming monetary policy support – the value of the fiscal multiplier fluctuates around one in the near term, and is zero over the long term. *Blanchard and Perotti* (2002) calculated a value around one in the USA over the short term, but the cumulative effect already amounted to 2–3 per cent of GDP. The quantifying attempt of *Robert Barro*, a prominent representative of the new classical macroeconomics, seems to contradict this (Barro, 2008). Barro clearly professes that the only real effect of additional government expenditures is the rearrangement of income, i.e. the periodic value of private investment declines in line with the increase in government expenditures, and thus the GDP itself remains unchanged. According to his calculations, a multiplier larger than one was not attained in the USA even during the Second World War: in 1943–1944, at an annual level, the US government spent 540 billion dollars (44 per cent of GDP) on military expenditures (calculated at year 1996 prices), while real GDP increased by only 430 billion dollars. Accordingly, the value

of the multiplier was 0.8 (430/540). For normal times, Barro calculated a multiplier of zero.

Calculations to assess the effects of the economic policy expansion were made in connection with the year 2008–2009 crisis as well. However, the results are not unequivocal in this case either. Barack Obama's advisor, Christina Romer and her colleague, Jared Bernstein (2009) found in their study, which was one of those that elicited most criticism, that a one per cent increase in government spending results in a 1.6 per cent growth in national income (i.e. the multiplier effect exists). At the same time, Cogan *et al.* (2009) as well as Cwik and Wieland (2009) criticised the method and finding of Romer and Bernstein, as – in their opinion – Romer and Bernstein made their calculations on the basis of the traditional Keynesian model, and thus were unable to properly model the fact that individuals and corporations change their behaviour if they perceive a change in economic policy. If we assumed what co-authors Romer and Bernstein assume, i.e. that expenditures grow permanently, and no adjustment is expected in the future (moreover, the Fed would not change its zero interest rate policy either), sooner or later the economy would inevitably face a crowding out effect and hyperinflation. Considering that individuals and corporations are far-sighted, and that the present expansion in expenditures will be replaced by tightening in the future, Cogan *et al.* (2009) measured a much lower multiplier for the USA: a mere 0.6. The findings of Cwik and Wieland (2009), in turn, were similar with regard to European states: the fiscal multiplier remained below one in this case as well. Both studies warn of the dangers of the crowding out (rising real interest rates) and negative wealth effects (increasing tax burden in the future) of the fiscal expansion implemented in 2009 and 2010: the impact of government incentive packages leads to a shrinkage of the consumption and willingness to invest of the private sector even

in the short term (and even more strongly in the medium and long term).¹⁸

The low-value multiplier is also rendered probable by the fact that the crisis affected precisely the financial sector most (including the mortgage markets as well), which would be able to facilitate the multiplier effect in practice as well. Clarida (2009), among others, also pointed out that in the last fifty years the private sector's (including households and corporations) borrowing requirement had never fallen as dramatically as in the time of the current crisis. The dramatic depreciation of shares and housing markets meant the loss of wealth of households as well, which makes the increase in consumption impossible, or at least difficult. For the year 2008, the author estimated households' net loss of wealth to be ten trillion dollars, which especially affected older generations, who are now compelled to re-accumulate savings even more strongly.

Corsetti *et al.* (2009) go even further beyond the new-Keynesian models described above,¹⁹ and take into account whether the government chooses the raising of taxes or the reduction of expenditures upon returning to the equilibrium-oriented policy.²⁰ The model of the authors of the IMF is original also because earlier estimates typically expected tax increases in the future, and assumed that the expenditure side would remain unchanged (i.e. an increase in expenditure in the short term meant a growth in the magnitude of redistribution in the medium term). However, in the authors' opinion, this assumption is not realistic for several reasons, as an adjustment implemented only with a tax increase is not a viable assumption, especially in small, open economies. Another novelty of the model is that such a temporary rise and subsequent definite decline in public spending project a moderation in expectations regarding future short-term real interest rates. This, in turn, may have a mitigating effect on long-term real interests already at present, which induces a process

in a direction contrary to the crowding out effect, strengthening consumption and investment.²¹

One of the important conclusions of the study of the IMF staff is that fiscal stimulus can truly be successful if governments credibly commit themselves to the subsequent rearrangement already upon launching the stimulation, i.e. the current increase in expenditures will be followed by their decline in the medium term. One of the relevant elements may be the return to fiscal policy rules and fixing the probable time of this return now, also determining the expected fiscal policy and the magnitudes of balances of the transition period.

The strengthening of the importance of planning and foresight is essential, inter alia, because the current short-term decisions that are deemed to be necessary (and have an expansionary effect) have long-term consequences as well. Therefore, political decision-makers and voters have to see what concrete sustainability risks are entailed by fiscal policy (discretionary) decisions adopted at present. Through the strengthening of future-orientation, planning also makes those long-term objectives and priorities (such as the management of an ageing society or of labour market inflexibility) clearly determinable, the remedying of which cannot be ignored by any responsible government.

The rules are supposed to ensure medium-

term sustainability, but the crisis required immediate, short-term intervention, thus the short-term attitude became prevalent in the states concerned, which, in turn – in our opinion – repealed fiscal policy rules only temporarily. The after-effect of the crisis is that debt settlement will be required in almost all countries to stabilise the debt at a sustainable level. Consequently, *the application of fiscal rules and institutional limits will be necessary in a(n even) wider scope.* Of course, this also follows from the anti-cyclical Keynesian economic philosophy, which is often referred to in the crisis, as expansion may be justified in lean years, but containing overheatedness is the desirable economic policy in a period of growth. The significance of fiscal rules may strengthen especially in those countries where the fiscal structure has not been built on automatic stabilisers earlier either. Consequently, it was the discretionary solutions that added to the debt stock in the crisis as well.²² As a result of the effect of the discretionary fiscal policy that destroys sustainability, the credibility of public finances fades away rapidly. Therefore, in countries like that it is expedient to introduce fiscal rules with a short deadline to be able to control the process of indebtedness and to make public debt renewable this way as well.

NOTES

¹ István Benczes - Gábor Kutasi (2010): *Költségvetési pénzügyek*, Akadémiai Kiadó, Budapest. The researches of István Benczes and Gábor Kutasi are supported by the Bolyai János scholarship of the Hungarian Academy of Sciences and the Corvinus TÁMOP (Social Renewal Operational Programme) Project, respectively.

² Within the framework of this paper we cannot undertake a deep and systematic analysis of the crisis as a whole. There are several relevant studies available in Hungarian; see, in particular: Csaba (2010),

Gyórfy (2009), Király et al. (2008), Kutasi (2010), Magas (2009) and Szakolczai (2009).

³ For details see: Király et al. (2008)

⁴ This is what Minsky's financial crisis theory calls the stage of pre-crisis euphoria, when, motivated by the upturn in prices, many engage themselves in speculative real estate or securities business in the expectation of high returns (Minsky, 2008). On the basis of Minsky's financial crisis theory, Losoncz (2008) deduces the global economic crisis of 2008–2009

starting from the early 2000s. Accordingly, the fundamental shift resulting in the crisis is the reduction of/decline in interest rates that started at a global level in 2001. Low interest rates did not stimulate investment, as there were significant unutilised capacities, but resulted in the indebtedness of households, which, inter alia, led to a dynamic increase in real estate market prices until 2007.

⁵ At the same time – as George Soros pointed out – the crisis destroyed economic growth prospects to various extents. Thus the crisis did not simply result in a decline in income, but also in a significant realignment, primarily in favour of emerging economies, such as China, India and the Far East in particular and, to a lesser extent, Latin America (Soros, 2008).

⁶ For details on the effect mechanism of the zero interest rate and an analysis of the practice between 2007–2009 see Kutasi (2010)

⁷ Mainly in Europe, banks did not have to be saved from bankruptcy at a national level, but rescue packages had to be separated in the countries where parent banks are registered, owing to the hazard of bankruptcy of German, Austrian and Italian banks' Central and East European affiliate banks (Baldacci et al., 2009, p. 3).

⁸ cf. Freedman et al. (2009)

⁹ In 2000, the Bush Administration started with a considerable tax reduction, while the war in Iraq cost the USA more than 3,000 billion dollars. According to the calculations of Bilmes and Stiglitz (2006), the management of the financial crisis of 2008–2009 amounted to at least another 800 billion dollars on the general government side. This compares to the total annual US income of 14,300 billion dollars.

¹⁰ In 2008 and 2009, the annual number of jobs lost amounted to several hundreds of thousands in almost all sectors of the US industry. Only the health sector showed an increasing trend. Obviously, the US government used the extension of health services as well to offset the downturn. However, even this way they were able to make up for only 10 per cent of the jobs lost (600 thousand jobs within a year). Moreover, this is not fully compatible with construction, the financial sector and manufacturing production, which are the main producers of unemployment. However, in connection with the doubling of unemployment one must also see that its magnitude has become so drastic not only because of the temporary reduction of capaci-

ties that have turned redundant in view of the crisis. Under the pretext of the crisis many US companies – mainly in the financial and advisory sector, as well as the marketing and sales divisions – strived to get rid of a significant portion of the workforce. Therefore, it is not sure that employment will automatically expand with the easing of the crisis. And if many of the dismissed employees will not be needed in the same activity or sector, that already projects the protracted continuance of structural unemployment.

¹¹ US President Barack Obama recommended high-volume public spending aiming at the maintenance of consumption as an adequate means of recovery from the crisis to European leaders as well. As it will be demonstrated later, European states only partly took his advice, which among other things may be explained by the fact that these countries are unable to raise funds as cheaply from the money markets as the USA can.

¹² An expansion of disposable income through the reduction of the taxation on personal income may also be able to mitigate (or perhaps stop) the slowdown in the economy only if it directly covers the consumption of American products, and not the purchase of imported ones.

¹³ Banking sectors of countries became heavily affected by the collapse of the mortgage bond market and the shortage of money supply resulting from the distrust that developed in the interbank credit market. The crisis management packages in the autumn of 2008 mainly served the purposes of banks' recapitalisation and the purchase of bad securities. Germany spent 250–300 billion euros on interbank credit guarantee, and appropriated 150 billion euros to bank rescue, most of which was used to save Hypo Real Estate and NSH Nordbank. The magnitude of the problem was much smaller in France; 10.5 billion euros were spent on bank rescue, financing mostly the loan losses of the financial institution Société Générale. IMF (2009f)

¹⁴ In the field of tax reduction, France got rid of the local business tax, while other countries took comprehensive measures with regard to the tax burden on personal and corporate incomes as well as to the value added tax (VAT). Only France did not consider a reduction of the VAT at all, primarily referring to the lowering of the VAT in Great Britain, which had not resulted in the expected upturn in consumption in the British economy. In all probability, it is justified to treat the reduction of VAT

with reservations, as consumer credit becomes more expensive and households' willingness to save increases in a recession period, thus making households considerably insensitive from this aspect to the declines in gross prices.

¹⁵ See all this formalised as well by Benczes and Kutasi (2010).

¹⁶ A development of the Greek debt crisis is that in three years the IMF and the EU support the general government by approximately 50 per cent of the Greek GDP in order to avoid bankruptcy. In exchange for the rescue, the Greek government undertook to restore the equilibrium in the medium term (pursuant to the Greek stability programme, the planned deficit should sink below the Maastricht 3 per cent by 2012). However, the experience of debt crises is that bridging loans are unable to terminate the debt management problems, as the unchanged general government structure reproduces the problems continuously (Reinhart and Rogoff, 2009). According to the estimate of the DG ECFIN, with the nearly 134 per cent public debt to GDP ratio in 2011 it is simply unbelievable that Greece will be able to repay its debt in line with the original schedule (determined upon the issue of government bonds). The Greek CDS value on 4 May 2010 amounted to 689 basis points. Taking only this as a basis, irrespective of the structural reforms and the fiscal consolidation, around one tenth of the Greek aggregate income should be spent only on interest payment in the next years. Therefore, there is always a heavy political burden on the current Greek government, whose behaviour

was strongly characterised by bad planning and deliberately deceptive and misleading data supply earlier as well. The credibility of the commitments of the Greek government is low, forecasting further bankruptcy problems.

¹⁷ Namely: $Y = C(Y_d) + I(r) + G + (X-M)$, where Y is the national income, $C(Y_d)$ is private consumption, $I(r)$ is the investment of the private sector, G is the value of government purchases, and $(X-M)$ is the balance of foreign trade

¹⁸ The authors of the European Commission (see Ratto et al., 2009) also came to a similar conclusion despite assuming in their model that one third of the actors in the private sector face liquidity constraints.

¹⁹ The new-Keynesian model means sticky prices as well as rational and far-sighted individuals and corporations.

²⁰ The model consists of five equations: household maximisation function, equation of the budget line, corporate optimisation function, fiscal expenditure function (deviation from the debt objective) and interest rate function.

²¹ Actually, this is a case when a mechanism that is very similar to the non-Keynesian effects prevails.

²² However, where automatic stabilisers work (in Sweden, for example), as the crisis comes to an end, medium-term developments in revenues and expenditures restore the balance even without any special consolidation.

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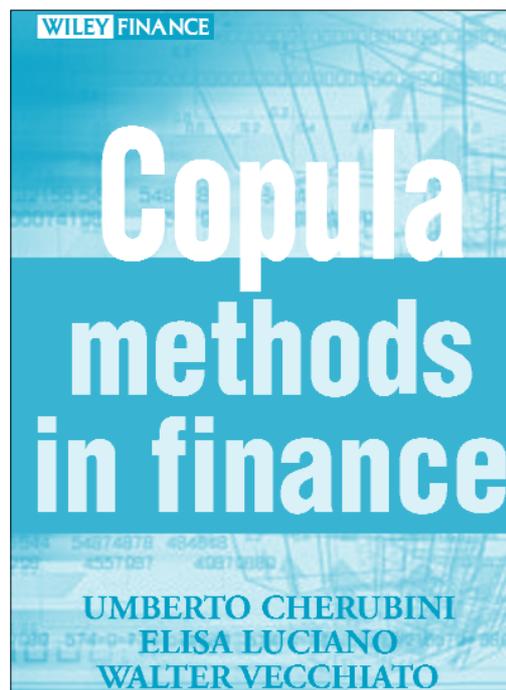
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Copula methods in finance



JOHN WILEY & SONS, LTD., 2004

The book focuses on the use of copula functions in financial applications. The copula function (*copula* – word of Latin origin, meaning band, rope, bond) connects the joint distribution functions of two or more random variables with the marginal distribution functions. Therefore, one may often read the definition that the copula is ‘the world of distribution functions enclosed in a cube’. The name ‘copula’ was introduced by *Abe Sklar* in 1956, in his theorem that connects the copula function with the joint distribution function and the marginal distribution functions, and interprets copulas in the theory of probability. Put even more simply: the use of the copula function allows the formulation of new joint distributions, which also provides an opportunity to define new dependence indicators.

The book highlights three important areas that argue in favour of the use of copula functions: the first is the non-normality of returns, which

questions the further use of the standard Black and Scholes option pricing model; the second is the choice of the right ‘pricing kernel’ in the pricing of financial products; and the third area is the applications in credit risk.

The tools used in the pricing and evaluation techniques of financial products originate from the theory of probability. The prices of derivative products may be described as the discounted expected values of their future pay-offs under a specific probability measure derived from ‘non-arbitrage’ arguments.

The copula methods used in finance are based on the standard hypothesis assumed for stochastic dynamics of the rates of returns on financial products. Until the 1987 crash, a normal distribution for these returns was held as a reasonable guess, and most of the modern finance theory was based on this assumption. In the field of pricing, it corresponds to the standard Black and Scholes approach to con-

tingent claim evaluation. In risk management, assuming normality led to the standard parametric approach to risk measurement, which has been disseminated by J. P. Morgan, the leading global investment bank, under the trademark of RiskMetrics since 1994, and which is still being used by many financial institutions in their risk analysis. It is attributable to the assumption of normal distribution that the method relies on the volatility of the returns on the assets in the portfolio and on the correlation among them. However, the reality of this assumption was strongly questioned by market data, even in the case of standard financial products like stocks and bonds. At the same time, the latest products of financial innovation – for example plain *vanilla* options as well – show non-normal returns. This trend was further strengthened by the returns on credit derivatives and credit-linked products, the returns of which are also non-Gaussian. One of the values of this book is that from beginning to end it proves that tackling the issues of non-normality and non-linearity in portfolios composed of various financial products and securities would be a hopeless task without the use of copula functions.

The book consists of three main parts.

■ The first one is the introductory chapter, which discusses those fundamental models and correlations that are essential for understanding the other chapters. They are as follows: derivative pricing basics: the binomial model; the Black–Scholes model; interest rate derivatives; ‘smile and term’ structure effects of volatility and credit risk models. In this part, the reader may learn about the foundations of copula methods and the definitions of copula functions, and may also gain insight into their use in financial analyses.

■ The second part consists of the subsequent three chapters. These chapters are expressly theoretical. Chapter two introduces

the concept of the copula function and its probability interpretation, which allows it to be considered a ‘dependence’ function. This latter can be understood on the basis of Sklar’s theorem, i.e. in multivariate continuous distribution functions the marginal distribution functions of individual variables and the multivariate dependence structure can be separated and interpreted with copula. Another consequence of this theorem is that it points beyond the world of normal distribution. It examines the notions of survival copula and density as well, together with the canonical representation, and also mentions the use of copulas in determining the probability limits related to the sum of random variables. In addition to the theory, it collects numerous financial applications as well to present the usefulness of copulas, which are further developed in the subsequent chapters. Chapter three discusses market comovements and copula families. First it presents the correlations among copula functions, then the measures of association of randomly selected pairs with regard to market indicators, such as prices or returns.

Here it is worth briefly mentioning measures of association. Generally, random variables X and Y are ‘associated’, when they are not independent. However, there are numerous interpretations of association. They are as follows: concordance, linear correlation, marginal dependence, positive quadrant dependence and the related measures: Kendall τ , Spearman ρ , linear correlation coefficient, the indices of marginal dependence and the indices of the positive quadrant dependence. Each of these measures may be linked to the relevant copula, because in connecting the joint distribution function with the marginal distributions it ‘captures certain (...) aspects of the relationship between the variates, from which it follows that (...) dependence concepts are properties of the copula’ (Nelsen, 1991).

Thereafter, the authors explain the parametric families or classes of bivariate copulas, describe the density and conditional distribution through copulas, as well as discuss the concordance order and the so-called comprehensive properties of the family. They describe each family with a parameter or parameter vector which show the correlations between the measures of concordance and marginal dependence. The families or classes presented here are as follows: Gaussian copula, bivariate Student's copula, the Fréchet family, Archimedean copulas and the Marshall–Olkin copula.

Chapter four discusses the extensions of bivariate copula functions to the multivariate case.

■ The chapters that can be classified into the third and final part basically present empirical practical applications for the latest products of individual financial innovations.

Chapter five discusses estimation and calibration from market data. From a statistical point of view, the copula function – contrary to most multivariate statistical models – is a simple multivariate model, for which the classical statistical conclusion theory can be applied. (The only theory that can be applied to some extent is the asymptotic maximum likelihood estimation.) The authors devoted this chapter, *inter alia*, to the presentation of the statistical conclusion theory applied for the copula models. All the methods discussed here by the authors require the numerical optimisation of the objective function, as the copula is essentially a multivariate function, and its probability comprises mixed partial derivatives.

Copulas provide an efficient tool for describing joint distribution as well as modeling marginal distribution and joint distribution. Accordingly, for each data series one may select the marginal distribution that matches the sample best, and then, using the relevant copula, treat all of them together. The problem stems from the simple fact that the number of com-

binations is infinite, and it is easy to make a mistake in selecting the best combination of marginal distributions and the appropriate copula. As a remedy for the problem, the authors present some non-parametric methods, for example the canonical maximum likelihood method, the IMF method etc., for the modeling of marginal distributions and the copula, assuming the continuity of random variables. They give a non-parametric estimation for stock market data by introducing the empirical copula and the so-called kernel copula.

Chapter six presents simulations of market scenarios by applying the Monte Carlo and Marshall–Olkin methods. The *Clayton*, *Gumbel* and *Frank* n-copulas are used in conditional sampling.

Chapter seven is about credit risk applications. Credit derivatives, such as collateralised debt obligations (CDO) or credit default swaps (CDS), are financial contracts that allow the transfer of credit risk from one market participant to another. Undoubtedly, one of the main issues is the modeling of the joint distribution of default times. According to the proposal in *Li's* (2000) study, the Gaussian copula may be an adequate tool for treating this problem. The key issue in this framework is how it is possible to shift the focus of the examination from the dependence modeling of default times to a fixed time horizon to a dependence between default times that are random variables and do not depend on the discretionally chosen time horizon.

Let's have a look at *Li's* (2000) copula method, namely the simplest case, when only single survival time is taken into account in modeling and calibration. *Li* describes the default with a survival function $S(t) = \Pr(t < \tau)$ that gives the probability that the security reaches age t . Survival time τ is called the time that elapsed until default or simply default time. If S is differentiable, and the risk rate can be given with the $h(u) = -S'(u)/S(u)$ function,

and the survival function expressed in the risk rate is

$$S(t) = \exp\left(-\int_0^t h(u) du\right),$$

then the occurrence of the default is an inhomogeneous Poisson process. A typical assumption is that the risk rate is constant, in which case survival time follows an exponential distribution with parameter h , and then the occurrence of the default is a homogeneous Poisson process. The authors show in their book that it is easy to generalise the distribution of the survival time for the case of Weibull distribution, and they also touch upon generalisation in the case of multiple survival times and multiple default times both in modeling and calibration.

The eighth and final chapter discusses option pricing with copulas. Here the authors demonstrate how copula functions are used in the pricing of multivariate contingent claims. Their primary objective is to exceed the standard Black–Scholes framework, and derive pricing formulae that are valid for very general distributions as well, namely with closed form solutions. It is known that the Black–Scholes model uses two assumptions that have been refuted by market data. One of them is that

returns do not show a normal distribution, which was suggested by the ‘smile and term’ structure of volatility. The other is market imperfection, i.e. the difficulty arising in the selection of the exact replication strategy relating to all contingent claims and in giving the pricing kernel. Both problems are exacerbated in multivariate cases. Evaluating multivariate contingent claims in imperfect markets means the solving of two tasks: the selection of the pricing kernel for each asset in the basket separately and the selection of the copula function that is in compliance with the dependence structure between them. The authors also go into the details of special cases, for example, the pricing of ‘two-color options’ or barrier options. They present the application of the Monte Carlo method in the pricing of multivariate options, through the so-called basket option.

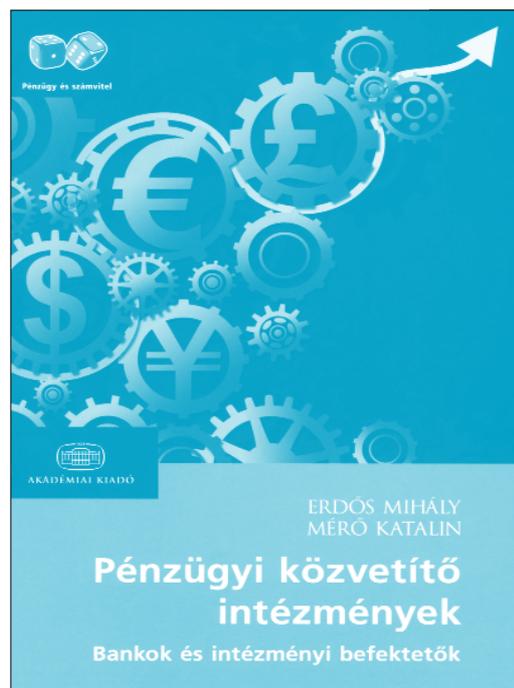
The book discusses in a clear and simple style many issues that are in the forefront of modern risk calculation. It is recommended for study by university students, researchers and value analysts dealing with risk calculation in various financial institutions.

József Móczár

Mihály Erdős – Katalin Mérő

Financial Intermediary Institutions

Banks and institutional investors



AKADÉMIAI KIADÓ, 2010

In the past three years, a number of books and articles have been published focusing on the ongoing financial crisis which broke out in 2007. Most of them analyse the causes and ripple effects of the crisis, with a frequent use of sensational tools. Some claim that the events were the consequence of the excessive risk-taking by the financial intermediaries (obviously in the hope of higher yields), while others highlight the responsibility of the regulatory and supervisory agencies. The spread of securitisation and structured financial instruments was accompanied by significantly larger risks and the appearance of new risks, often unknown even to the issuers. In the meantime, the supervisory and regulatory agencies like ostriches stuck their heads into the sand and, apart from a few fire-fighting measures, almost idly watched the events. It is no wonder, therefore, that the trust of society in the financial markets was shaken by the crisis. Today's

economies are money-based economies, in which the existence of heavily trust-based financial intermediation and the implementing institutions thereof, and the institutional system itself are of major importance for the operation of the economy. In relation to the crisis, the role of institutional stability and transparent operation, coupled with more effective and internationally co-ordinated supervisory work have appreciated. The competent organisations have already taken the first steps towards restoring the stability of the financial system. However, the trust of society is a more sensitive issue than a particular legal regulation or recommendation. Perhaps we should start by speaking the same language, make the structure of the financial intermediation system clear, and clarify the role and specificities of the particular institutions.

The book by *Mihály Erdős* and *Katalin Mérő* is a bull's eye both in terms of content and

timing. In their book they not only dissect the causes of the crisis but, relying on the latest international literature, also endeavour to present the financial intermediation actors, relevant from a Hungarian standpoint. The book also fills a gap in the sense that it presents and captures all closely related institutions playing a role in intermediation in their complexity instead of providing an isolated picture of all of them. Apart from the clarification of basic concepts and definitions, the book, relying on the results of research and analyses, also describes the specificities, key issues, pronounced problems, regulatory features and latest developments of each area. The book is equally useful for readers interested in finance and students studying at various levels of higher education, as through its diversity it inspires further reflection and debate. Although due to the crisis the regulatory issues are put in the forefront of attention, the book is excessively dominated by issues related to banks and banking regulations. In addition, it would have been nice to read more about the activities of the credit rating agencies and the regulatory problems related to them.

■ In *Chapter 1* the authors analyse the relationship between economic growth and the degree of development of the intermediary systems from several aspects. *Schumpeter's* views, according to which the role of the bank is to select market participants worthy of credit within their scope of competence granted by society and the delegated observer role defined by Diamond, economic history experience, i.e. the mathematical and statistical analysis of data series of many decades, all confirm that advanced financial intermediation has a favourable impact on economic growth. The research results of *Levine* and *his co-authors* go even further and prove that banks and capital markets affect economic growth primarily through the increase of productivity. The following conclusions cited from *Levine* put an

interesting light on the events of the world economy: 1. in countries where the financial intermediation system is more advanced, faster economic growth may be expected, 2. it is important that economic policy decision-makers attach high priority to the reform of the financial system.

■ *Chapter 2* deals with bank models and the specificities of banking operations, the main banking risks and various options available for their management, while the description of the bank crisis adds colour to this chapter. We can also learn about the paradigm shift in the banking sector, i.e. the reasons for the emergence of the so-called *originate to distribute* banking model, and the specific features of the bank of today. In this model, a bank provides a loan for the purpose of passing on its risks to other market actors either in part or in full, through securitisation. Irrespective of the banking model, it is a fundamental expectation towards banks to be liquid and solvent, as well as profitable at all times. However, there is a contradiction among the three basic principles, which may lead to a conflict in the operation of banks. The authors list the main risk types, and describe and summarise the various techniques and methods available for measuring and managing those risks. The chapter finishes with the description of a few bankruptcies and bank crises which created big scandals in the recent past.

■ Institutional investors collectively manage a large amount of assets, collected for specific, pre-defined purposes. Institutional investors include investment funds, life insurers, pension funds and other non-classic investment funds, such as hedge funds or venture capital companies. In *Chapter 3*, the authors present the specificities of institutional investors and the financial products and services offered by them, illustrating the origins of establishment of such financial intermediaries, the legal background of their operation and the advantages

inherent in them. Among others, this chapter provides insight into the indicators used for expressing the riskiness of a portfolio, and the asset-liability management that is a supporting tool for the co-ordination and planning of life insurance payments. There are minor or major differences between the pension systems in each country. However, this is not the only thing that makes their comparison difficult; the lack of a standard set of terms and common interpretation also exacerbates comparison. The authors, by clarifying the concepts and correlations relating to the pension systems, attempt to provide guidance in the interest of easier understanding.

■ *Chapter 4* deals with the regulation of two large groups of institutions: banks and institutional investors. In banking regulations, the Basel Capital Accords (Basel I and Basel II) can be considered milestones. The biggest problem of the previous recommendations and requirements (prevailing prior to the outbreak of the crisis) is that they did not place enough emphasis on liquidity risk, they did not deal with securitisation, gave an excessively large role to unregulated credit rating agencies and ignored the pro-cyclical nature of regulations, which had been stressed for decades. Attempts are made to remedy the inadequacies listed above and make the activities of banks even more transparent within the framework of the Basel III regulation package. With regard to institutional investors, the starting point is that the risk appetite of their customers (savers) is greater and investors use them in the hope of gaining ever higher yields instead of putting their savings into bank deposits. Thus the epicentre of the regulations includes sufficient information, disclosure, transparent operation, enabling investors to assess the risks associated with the intermediary institution and the

financial products offered by it based on the published information. The authors list the information and disclosure obligations of the three large institutional investor groups (life insurers, pension funds and investment funds) and present the latest regulatory challenges and developments.

■ As the authors conclude in *Chapter 5*, there is no standard financial supervisory structure in the world economy, despite this diversity, there are some features the existence of which is a primary requirement in the operation of the supervisory authorities. As financial services are provided across state borders, it is a justified requirement for financial supervisory authorities not to limit their activities only to a national scope. The legal background, at least on an EU level, has been partly established, and the elaboration and implementation of legal regulations are in progress. The co-ordination activities aiming at more effective co-operation and harmonisation of the activities of the national supervisory agencies are continuing based on the recommendations of the de Larosière report analysing the causes of the crisis.

■ The book, which is the latest addition to the finance-accounting series of the publisher, fits well with the previous books of the series [Pénzügy(rendszer)tan (*Financial (system) studies*); Pénzügyi piacok a globális térben (*Financial markets in a global environment*); Költségvetési pénzügyek (*Fiscal finances*)]. The professional, complex and balanced approach is accompanied with didactic, understandable and high-quality editing work. The book by Mihály Erdős and Katalin Mérő enriches Hungarian language financial literature and the available range of higher education textbooks.

Gabriella Lamanda