Csaba G. Tóth

Boosting demand by the state and automatic stabilizers*

Since the global economic crisis broke out in 2007-2008, the theory of boosting demand by the state has again come to the focus of attention. Besides deploying the monetary tools, the individual governments and international organizations announce one after the other, sometimes even outbidding each other, what amounts from their respective budgets they plan to assign to the moderation of the economic recession. In many cases, the fiscal stimulation of demand is looked upon as a messiah, they talk about it as a magic weapon that helps everybody who has the chance to use it. What is less talked about, however, is the price of the wonder weapon, as well as the conditions required for its effective operation. Besides, the theory of stimulating demand by the state leaves its mark on all the discussions of the crisis to such an extent as if this were the most efficient tool of recovery and the only factor that contributes to becoming indebted for sure.

In this study, we primarily strive to examine these phenomena. We are seeking to answer the question whether the boosting of demand by the state is in fact such a wonder weapon, to what extent the time and pace of recovery depend on

this. Furthermore, we will try to illustrate, by describing the probable impacts, what weight is represented by the central stimulation of demand within the fiscal policy and to what extent it is responsible for the increase in state debts.

In the first part, we will summarize those conditions the existence of which may contribute to the success of boosting demand by the state, by giving an overview of the theoretical literature and the experience gained to date. After the theoretical overview, we will present the result of practical experience and model calculations. Then we will briefly sum up the direct effect of the economic crisis on the national budgets. We will describe and compare in detail the fiscal demand stimulating packages of the economic powers and the EU states, as well as the role of the automatic stabilizers. Besides the estimated impacts and results, we will also show those projections which quantify the long-term costs of boosting demand.[1]

THEORETICAL SUMMARY OF THE FISCAL STIMULATION OF DEMAND

At the time of an economic crisis, the state can influence the processes through several different channels. Fiscal policy is only one of these but this can also be divided to at least two important components. In the technical litera-

ture, discretionary measures, i.e. those decisions of economic policy which are capable (or incapable) of supporting economic growth in the short run, play a more significant part. However, at the time of crises, it frequently happens that the role of automatic stabilizers is more important than the above measures. These stabilizers include all such stabilizing features of fiscal policy which exert their influence without any specific intervention by the economic policy. Most frequently, it is the progressive taxes and the various unemployment benefits that are listed in this category but these are not the most important ones. The most significant automatic stabilizer is the helplessness of the expenses themselves. The thing is that the GDP-rated extent of the government expenses automatically increases at the time of a receding economy, while it decreases at times of upturns (Deroose et al., 2008). In the long run, however, the border between discretionary and non-discretionary measures may easily blur, since what is not the responsibility of the economic policymakers in the short term may be something that they can change in the long run.

As compared to the automatic stabilizers, the efficiency of discretionary fiscal policy is the subject of a louder dispute (see Barro, 2009; Krugman, 2008). In the opinion of *Keynes* (1936), who argued for an active government policy necessary for achieving total employment, outputs are determined by aggregated demand in the case of inflexible prices, unused resources and partial employment. However, the value of the fiscal multiplier[2] is significantly moderated by the crowding out effect. The direct form of this is when the state offers such products and services which compete with the goods offered by the private sector as replacement articles. In an indirect way, on the other hand, it is through the exchange rate and interest rate channels that the crowding out effect can be sensed.

In open economies (in the Mundell–Fleming model), the extent of the crowding out effect, and through this, that of the effectiveness of fiscal expansion, are influenced by the exchange rate policy, as well as the extent of capital mobility. With flexible exchange rates, the crowding out effect reduces efficiency through the strengthening of the exchange rate, however, it improves the situation if capital mobility is limited, or if the prices flexibly react to the movements of the exchange rates. With fixed interest rates, the efficiency of fiscal expansion does not deteriorate through the exchange rate channel but the real appreciation of the foreign exchange worsens the current account balance. In this case, it does not matter whether we assume limited or perfect capital mobility.[3]

The efficiency of fiscal expansion is affected by the Pigou effect (1943) as well, this is why it makes a difference how sensitive consumption is to the changes in the available income, and to the proportion of the net savers and net borrowers. The role of expectations is similarly relevant for the multiplier. If we assume, as opposed to the adaptive expectations assumed by Keynes, that those are rational, then a transitional fiscal expansion has no long-term effect, however, a permanent one may exert a further crowding out effect, as long as the households and the companies can count on a durable increase in the interest rates and a strengthening of exchange rates. In the case of a perfect Ricardian equivalence, however, the tax cuts financed from the decrease in government savings are fully compensated by the increase in the savings of the private sector (Barro, 1974), thus aggregate demands will not change. In such cases, the value of the fiscal multiplier is zero.

The evolution of debts affects the fiscal multiplier also through the risk premium that is added to the interest level (see Miller et al., 1990). As state debts rise as a result of fiscal expansion, so do the risks related to the issuer

and the risk premium that indicates the crowding out effect, through the interests. From this respect, credibility is of critical importance. If there is a high level of distrust of the government and there are fears that the latter will not be able to stop/reverse government spending and tax cuts later, i.e. the short-term fiscal expansion communicated by the government will be replaced by expectations of a long-term expansion, then risk premium will appear in the interest rates. It is because of the indebtedness, partially generated by fiscal expansion, and affecting several generations that the fiscal restriction that involve expansion effects are discussed more and more often.[4]

On the supply side, the most important thing is how labor supply is affected by the changes in state burdens on labor, as well as how the evolution of investments and savings is influenced by the changes in the taxes on capital. The form of financing is also an unavoidable issue in assessing the effectiveness of fiscal expansion: in the case of financing from credits, the effect of fiscal expansion on real output is stronger than if the amounts required for this are provided by the state through raising taxes (Haavelmo, 1945). In this approach, however, the long-term threats inherent in indebtedness are disregarded (see the risk premium). From among the fiscal expansions financed from raising taxes, however, those which chanell income from those with higher incomes to those with lower incomes may be more effective in the short term, since the marginal propensity to save is definitely higher in the first group of citizens (see Bessenyei, 2007).

The impact of fiscal policy on economic activity is influenced by institutional factors as well. The more slowly a government measure is taken, the lower the value of the short-run fiscal multiplier will be. In the case of fiscal measures, internal lags[5] are not uncommon, since both the process of planning and acceptance, and that of implementation may be protracted. The case of external lags is more diverse, usually they are the lowest in the case of transfers and the income tax reductions provided for not perfectly liquid individual persons.

From the theories on the fiscal stimulus of demand described up till now, it turns out that the effect of the budgetary expansion on increase, as well as its effectiveness depend on several circumstances that mutually affect each other. This was summed up by *Hemming and his colleagues* (2002a) as follows.

The fiscal multiplier is positively affected if
- there is unused capacity, the economy is closed, or if open, then there is a fixed exchange rate system in place, and the households have short-term perspectives and/or are faced with liquidity limits.
- the increase in state expenses does not replace private consumption, while it raises the productivity of labor and capital, while the changes in taxation stimulate the labor supply and the activity of investments.
- the state debt is low and the government has no financing problems.
- all this is coupled with monetary expansion with limited inflation.

The following cases exert a negative effect on the fiscal multiplier and decrease the effect of the fiscal stimulus of demand:
- the crowding out effect is significant both directly through the state services and the imports, and indirectly through the exchange rate and interest rate channels.
- the households behave in the Ricardian way, this is why the long-term fiscal expansion results in the decrease of consumption.
- due to the problems related to debt financing, the risk premium added to the interest is high, and in this case, the interests would only decrease as a result of a credible budgetary adjustment.
- a fiscal expansion implemented in an uncertain environment leaves its mark on the

investment decisions of the companies and the households will also save more, out of caution.

EXPERIENCES AND MODEL CALCULATIONS

The practical observation of the effectiveness and efficiency on the fiscal stimulation of demand is a rather cumbersome task from a methodological aspect. One of the most thorough and comprehensive research was completed in the framework of the IMF in 2002. Hemming and his co-authors (2002b) then examined in detail as many as 61 recession periods,[6] in 27 developing countries between 1971 and 1998. In 80 percent of all the cases, there was fiscal expansion, which resulted in average 2.5 percentage point deteriorations in balances, while in the remaining 20 percent, the position of the budget improved by an average 0.75 percent of the GDP. However, if the extent of decline is looked at, hardly any difference was found between the two groups of countries (recession was 4.5 and 4.25 percentage points, respectively). After those (measurable) factors which may influence the value of the fiscal multiplier according to theoretical literature and practical experience, had been involved in the survey, it was found that the fiscal boosting of demand will usually be more efficient if the lagging of the GDP from the trends in the year that precedes the recession period indicate the lack of utilizing the capacities. Similarly, the efficiency of the fiscal stimulation of demand is improved by the fact that it is done in an economy that pursues a fixed exchange rate policy. From the aspect of efficiency, it is important that the state debt is low before the stimulation of the demand, however, the status of the budgetary balance does not necessarily matter. In harmony with the expectations, the fiscal multiplier was only higher in those cases where

the demands were boosted by increasing the expenses.

As regards the correlations defined, however, the authors themselves call the readers for caution. By way of control, their descriptive statistics were supplemented by a regression analysis. As a result of this, the statement was developed that the fiscal boosting of demand may be efficient if the above-described conditions are met but in general, in the case of open economies due to the crowding out effect, the value of the fiscal multipliers is very low, and in the case of a floating exchange rate, it is mostly zero.

One of the most important conditions of the basic Keynesian model, i.e. the role of unused capacities was examined in *Benczes's* (2009) new study. After analyzing twenty-five years of experience (1980–2005) gained in the old EU member states, he came to the conclusion that the probability of the success of fiscal expansion will grow if the value of the output gap is low or negative, while if the economy is already "overheated" before the expansion, this will reduce the efficiency of fiscal expansion. Furthermore, the experience of the European countries under review suggests that the income-oriented or mixed (those which build both on the income and the expense sides) stimulation of demand, especially if it is realized through the reduction of direct taxes, will aim at success with slightly higher chances that the expense-side stimulations.

A large-scale international survey that was conducted on the turn of the millennium reports on the overwhelming power of the crowding out effect. Within the OECD, it was by using the model called INTERLINK that the effects of (fiscal) shocks on the economy were examined (Dalsgaard et al., 2001). Our experience suggests that the durable increase of community consumption results in the immediate growth of domestic demand and the real GDP. The initial increase of GDP reaches its peak in

the first or second year, depending on when the accelerator effect is the strongest from the side of the investments. Unemployment decreases under the equilibrium level, demand grows, and both the salaries and the inflation rate increase. Due to the real and nominal inflexibilities, inflation usually reaches its peak after output.

However, the growth of inflation decreases surplus output through two channels: the deterioration of competitiveness (with an unchanged nominal exchange rate) reduces net exports and consumption also declines. In the long run, real GDP, unemployment and inflation will all go back to the original levels, while the price level will remain high. Briefly, the increase in community expenses will fully squeeze out the growth of private expenses.

Beyond the uniform conclusions, the model has also explored significant differences between the individual countries and groups of countries. As a result of the sensitivity of the investments, in the year that follows the growth of expenses, the value of the fiscal multiplier is the highest in Japan (1.75), while it is substantially lower in the United States and the eurozone (1.1 and 1.2, respectively). In the

mid-term, however, the crowding out effect is the strongest in Japan as well, since it is on this island that exports react most sensitively to the real appreciation generated by internal inflation. Contrarily, the authors of the study state that the United States are able to moderate the deterioration in competitiveness by their power to define prices *(see Table 1)*.

The impact of tax cuts as compared to that of the growth of expenses is more moderated both with regard to the GDP and to inflation. According to the model, a tax cut equivalent to one percent of the GDP increases the GDP by 0.5–1 percent.

A more complex picture on the short- and long-term effects of fiscal policy is depicted in *Ardagna's* study (2000). The author examined the macroeconomic data of some Western European OECD member states of the period between 1965 and 1995 by applying the dynamic equilibrium model. She studied the effectiveness and efficiency of the following five different fiscal measures: increase in community consumption, increasing employment in the public sector, growth of transfers, raising the taxes on labor and capital. The findings suggest

Table 1

EFFECTS OF THE INCREASE OF STATE EXPENSES (BY 1% OF THE GDP) IN THE FIRST FIVE YEARS

		Year 1	Year 2	Year 3	Year 4	Year 5
USA	GDP change	1.1	1.0	0.5	0.2	0.1
	Inflation rate	0.2	0.7	1.0	1.2	1.2
Japan	GDP change	1.7	1.1	0.4	0.2	0.5
	Inflation rate	0.5	1.4	0.5	-0.1	0.4
Germany	GDP change	1.1	0.7	0.2	0.0	-0.2
	Inflation rate	0.2	0.3	0.5	0.7	0.7
Great Britain	GDP change	0.2	0.2	0.0	–0.1	–0.1
	Inflation rate	0.4	0.5	0.4	0.2	0.0
France	GDP change	0.6	0.6	0.5	0.4	0.2
	Inflation rate	0.1	0.4	0.6	0.6	0.6
Italy	GDP change	0.9	0.6	0.3	0.2	0.0
	Inflation rate	0.3	0.7	0.5	0.5	0.4

Source: Daalsgard et al., 2001

Table 2

THE EFFECT OF THE 1% INCREASE ON THE VARIOUS MEASURES

	Community consumption		Changes of work hours in the public sector		Transfers		Taxes on labor		Taxes on capital	
	Immediate effect	Long-term effect	Immediate effect	Long-term effect	Immediate effect	Long-term effect	Immediate effect	Long-term effect	Immediate effect	Long-term effect
GDP	0.05	0.07	–0.14	–0.20	–0.42	–0.59	–0.62	–0.86	–0.10	–0.33
Capital stock	0.00	0.07	0.00	–0.20	0.00	–0.59	0.00	–0.86	0.00	–0.80
Work hours in the private sector	0.07	0.07	–0.22	–0.20	–0.63	–0.59	–0.92	–0.86	–0.14	–0.09
Real interest	0.05	0.00	–0.14	0.00	–0.42	0.00	–0.62	0.00	–0.10	0.47
Salary level	–0.02	0.00	0.07	0.00	0.21	0.00	0.31	0.00	0.05	–0.24
Consumption	–0.03	–0.01	–0.13	–0.20	–0.38	–0.59	–0.55	–0.86	0.07	–0.23
Free time	–0.01	–0.01	–0.20	–0.20	0.08	0.07	0.11	0.10	0.02	0.01
Welfare costs	0.03	0.69	0.33	0.48	0.11					
Changes in primary deficit	–0.01	0.01	0.38	0.3	1.11	0.88	0.16	–0.16	0.03	–0.27
Primary deficit/ change in GDP	–0.06	–0.05	0.52	0.51	1.54	1.48	0.78	0.71	0.12	0.05

Source: Ardagna (2000)

that from among the five measures, it is only community consumption that is capable, although to a small extent, of increasing the GDP, while in the four other cases, output decreases, although to different extents. Although the positive effect is slight, this measure does not deteriorate the GDP-rated balance of public finances even in the long run.

The raising of the taxes on labor is the most detrimental to the economy, while in the short run, exactly because of its impact in hindering growth, deficits will even grow in spite of the raising of the taxes, and they will only be moderated in the longer run. As compared to this, raising the taxes on capital is more favorable, both with regard to growth, employment and the budgetary balance. The "extension" of the public sector, as well as the increase of the transfers are the factors that deteriorate the balance the most strongly, while they also exert a negative effect on growth *(see Table 2)*.

A finding similar to the latter research was reached by the co-authors *Blanchard – Perotti* as well (2002), who studied the evolution of the U.S. economy between the Second World War and the turn of the millennium by relying on a VAR model, and they found that the increase of expenses was the most suitable tool for raising output.

DIRECT FISCAL EFFECTS
OF THE GLOBAL ECONOMIC CRISIS

The global economy grew to a rate exceeding 5 percent in 2006–2007. The peak of the growth was the third quarter of 2007, then the growth rate of the global GDP started to decrease gradually, and it slowed down to 3.1 percent by 2008.[7]

The process continued in 2009. In the first three months, the rate of the decrease reached 4.2 percent in the OECD member states, while in the second quarter, it was 4.6 percent as compared to the same period of the previous year. The economy shrank by 4.7 percent in the European Union in the first quarter, while this rate was 4.8 percent in the second quarter. The decline was 2.5 percent in the U.S.A. in the first quarter, while 9.1 percent in Japan, while it was 3.9 and 6.5 percent in the second quarter, respectively. Although the rate of recovery cannot be accurately forecast, there are more and more signs that suggest that the crisis reached its bottom in the middle of 2009. According to the forecast of the European Commission, global decline was 1.4 percent in 2009, while an increase of 1.9 percent is expected for 2010 (for more details, see Rácz, 2009).

The financial and economic crisis, due to its global nature, affects each country in some way or another. However, the effects on the budget should be divided into two parts. The financial crisis brought about the reduction of the liquidity of the money markets. The price of credits increased, which has sensitively affected on all such countries which are compelled to finance their budget deficits from external resources. Besides, as a result of the crisis of the real economy, tax incomes have substantially decreased, while the management of the social problems arising from the decline of the economy increases the burdens of the expense side.

Distrust in the market, as well as the liquidity deficit arising from this affect the various countries in very different ways. This typically causes financing problems in those states against which distrust has grown *(see Chart 1)*.

In the case of the Baltic states, it is very visible how the decline in the real economy generates further problems, namely the increase in the benchmark yields of state bonds, which makes the funding of the public finances more expensive. Although the rate of the economic decline in the two Balkanese states that joined the Union later (Romania and Bulgaria) is much lower than in the Baltic states, the similar recipes of economic policy (Csaba, 2008) and the external indebtedness that developed as

Chart 1

BENCHMARK YIELDS OF LONG-TERM STATE BONDS IN SOME COUNTRIES

(%)
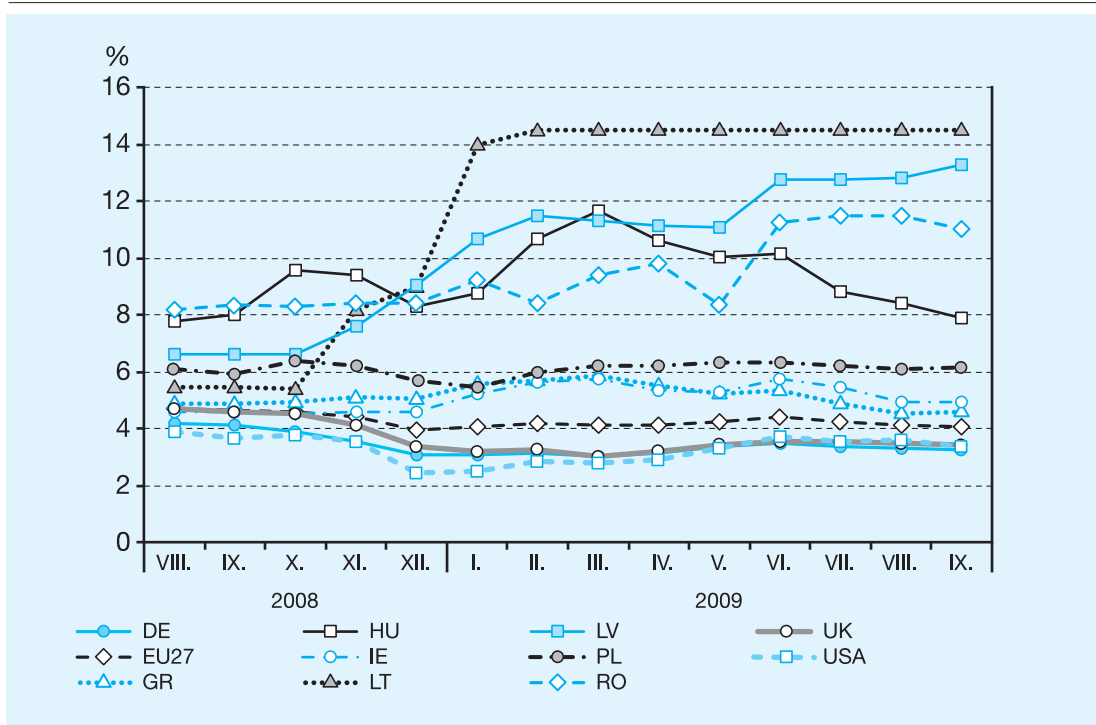
Note: The U.S. figure indicates the benchmark yield of the state bond with a 10-year term, the others mean the yield of the long-term state bonds quantified according to the ERM2 criteria.

Source: EUROSTAT

a result have significantly increased the burdens of financing in these two Southern European countries as well.

The differences within the eurozone are smaller. In Ireland, which perhaps was most affected by the crisis, as well as in Greece, which had long been struggling with structural problems, the state bonds can be sold with higher than average yields, while financing did not become more expensive in Germany. This also indicates that this phenomenon is not general. Those countries which were the targets of the escape route of capital could even profit from this. This is mostly true for the U.S., which functioned as a "safe haven" for a long time, due to its key currency and its economic hegemony.

The taxes missed by the crisis are more difficult to quantify. What we can be sure about is that the slowdown of the rate of economic growth, and even more so, the recession itself considerably moderated the tax incomes. However, it is difficult to separate the effect of this from the tax cuts announced as part of the fiscal stimulation of demand. We have meaningful data mostly on the countries of the European Union. In 2008, the total income of the states of the community was 5,563 billion euros, which is 44.5 percent of the GDP (roughly 90 percent of which comes from taxes). According to the estimates of the European Commission, in 2009, the total income will be 187 billion euros lower, i.e. 5,376 billion euros. According to our estimates,

without recession, if the economy of the Union grew by 2.7 percent, similarly to the year 2007, then the total tax income would be more than 350 billion euros higher than the amount planned for 2009. The difference makes up roughly 2.8 percent of the EU's GDP. Although we cannot accurately quantify how much of this is missed tax income, the conscious tax cuts aimed at the boosting of demands do not even reach one fifth of the missing tax incomes.

## DISCRETIONARY MEASURES AND AUTOMATIC STABILIZERS

The various countries attempt to reduce the fiscal effects of the crisis in different ways. As compared to the global crisis of 1929–1933, protectionist economic policies receive much less emphasis now, and this in itself will moderate the damage caused by the decline in the long run, as well as reduce the time required by recovery. On the other hand, the fiscal stimulation of demand enjoys ever greater popularity, in spite of the fact that it is suggested by both theoretical literature and the experience gathered to date that a very high number of conditions is necessary for its success (see Leduc, 2009) *(see Chart 2)*.

Most of the major powers of the global economy deploy fiscal policy tools as well, in some way or another, to alleviate the effects of the crisis. The G20 countries used an average 0.6 percent of their GDP on the boosting of demand in 2008, while this figure reaches 2 percent in 2009, and will be 1.5 percent in 2010. From among the superpowers, it is Saudi Arabia, the South African Republic, China, Korea and Japan that spend the most GDP-rated money on demand-boosting purposes.

Chart 2

FISCAL PACKAGES OF THE G20 COUNTRIES, GDP-RATED (2008–2010)

Source: IMF (2009a)

59
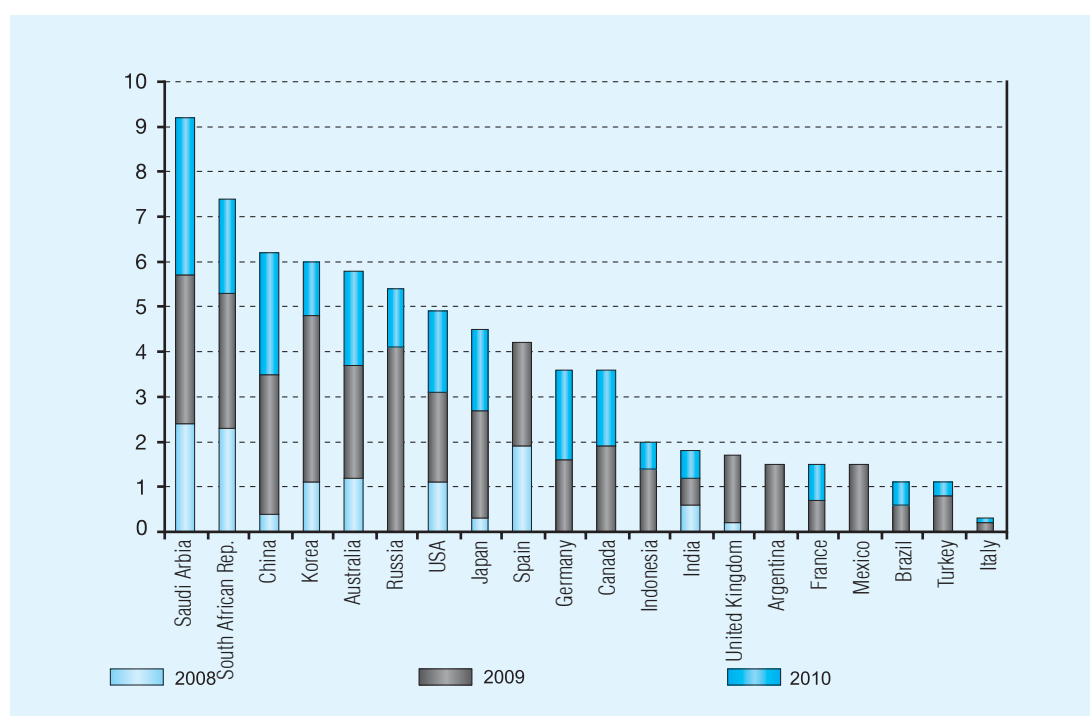
From among the discretionary fiscal tools, infrastructural developments are one of the most commonly used, and 17 out of the countries of the G20 endeavor to prevent the decline of production and trading in this way. 19 countries were compelled to increase their social expenses, which is clearly the consequence of the rising unemployment and other social tensions arising from the decline of the economy. On the expense side, the state support given to home building/renovating is relatively popular, which obviously affects one of the sectors that require most labor and thus, supports the strengthening of the construction industry. On the income side, most of the countries decided to cut the personal income taxes of private individuals but in almost the same number of states, corporate income taxes and consumption-related taxes were also reduced. It is true for the significant majority of the countries that besides the tax changes announced to be final, the majority of the measures that concern the expense side are planned to be transitory.

In the study of the OECD published in June 2009, the demand-boosting packages are described in a three-year period (2008–2010). From among the countries under review, in four, i.e. in Hungary, Ireland, Iceland and Greece the circumstances do not allow the moderation of the effects of the crisis by demand-stimulating tools. As regards the others, they will use an average 2.9 percent of their GDP for this purpose in three years. Of this, an average 1.4 percent will go to the income side, the largest part of which will affect private individuals but the burdens of the entrepreneurs and consumption taxes will decrease to some extent as well. The majority of the average 1.5 percent affecting the expense side is mostly represented in state investments, as well as transfers provided to households and private individuals *(see Chart 3)*.

As compared to the leading economies of the world, the member states of the European Union spend less on the fiscal boosting of demand, on average. According to another study (Saha–Weizsäcker, 2009), the 13 largest member states[8] of the community spent an average one percent of their GDP on the stimulation of demand in 2009. Of these, Germany, Austria and Great Britain spent most money on this purpose, while Italy, whose state debt exceeds 100 percent, bewared of doing so to such an extent that in their case, the income hoped to be reached from the tax increase is planned to exceed the expenses aimed at boosting demand. However, the difference is significant not only between the sizes of the packages but also between their structures.

In Austria and the United Kingdom, it was mostly the income-side measures that were dominant in 2009, while in Sweden, Poland, France, Spain and Belgium, the emphasis was laid on the expense side, and in Holland and Germany, the measures taken on the income and expense sides were roughly fifty-fifty percent.

➲ In the United Kingdom, the majority of the expenses on this purpose were "used up" by the temporary reduction of the value added tax (until 2009). Besides, they spent on state investments, slightly reduced the income tax burden, and increased the pensions.

➲ Austrians fought against the crisis by implementing a comprehensive income tax reform (which was brought forward), as well as smaller moderations in other tax types. On the expense side, it was the state investments that were dominant.

➲ In Sweden, the income-side stimulation was exclusively limited to the tax cuts on the renovation and building of homes. On the expense side, the largest item was the support given to R&D activities in the automotive industry and the increase in the benefits provided to the unemployed, aimed at encouraging activity.

Chart 3

STRUCTURE OF THE FISCAL DEMAND STIMULATING PACKAGES
AS A PERCENTAGE OF THE GDP (2008–2010)
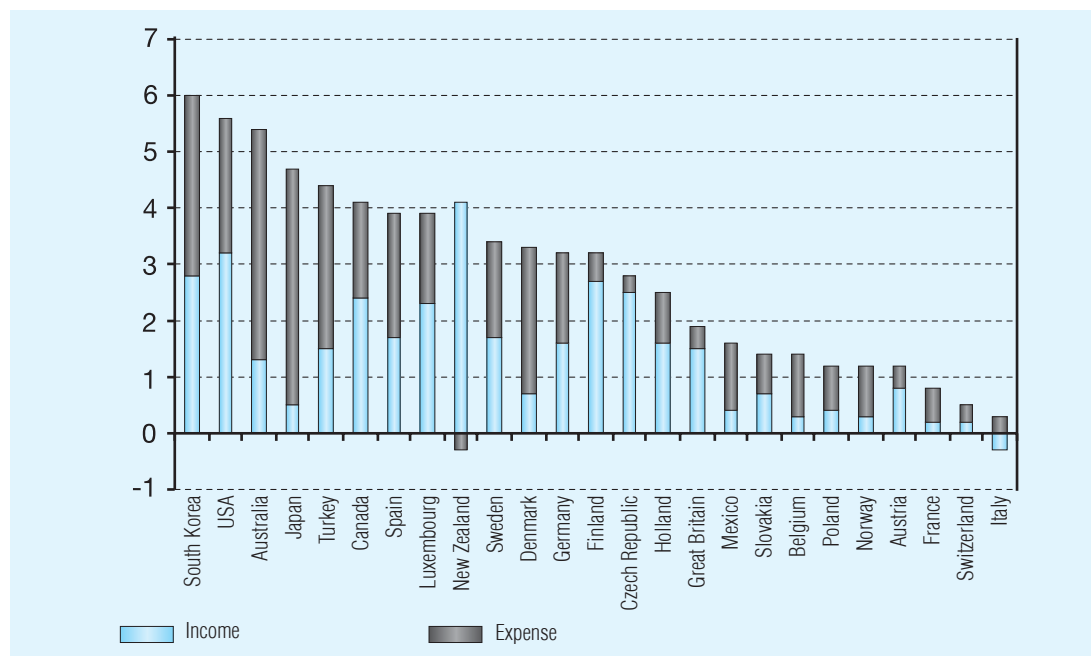
Source: OECD (2009)

➲ In Poland, there were no tax cuts but the co-funding of projects financed from the EU's structural funds was increased.

➲ In France, the salary costs of small companies were reduced. On the expense side, the greatest emphasis was laid on the investments of the state (central or local government), as well as the state-owned companies.

➲ In Spain, several different but small-scale tax cuts were implemented on the income side, while the majority of boosting demand took place in the form of state investments and sector-specific support. The main beneficiaries of the latter were the automotive industry, environmental protection and research and development.

➲ In Belgium, the main beneficiary of the tax reduction was the construction industry, the sector was supported by the state by the moderation of the VAT rate. On the expense side, the increase in welfare costs was meant to offset the effects of the crisis.

➲ In Holland, it was the tax reductions for small and medium enterprises that meant the most significant item on the income side, while the expense side of the package contained infrastructural investments, benefits in the labor market such as a reduction of work hours, as well as smaller scale measures.

➲ In Germany, the tax cuts were extended to almost all the tax types, the largest of which was the reduction of the personal income tax and the contributions. On the expense side, it was the infrastructural investments that stood out.

➲ In Italy, the balance of the changes is positive for the income side of the budget, according to the plans. The tax cuts mainly affected the companies but the income missed as a result of this will be by far compensated by the income arising from the planned stricter tax reviews, as well as voluntary self-revision.

In the above-mentioned countries, the aggregate fiscal stimulation of demand reached

an amount of 104.8 billion euros. This means an amount of 117.3 billion euros projected to the Union as a whole, which is equivalent to 0.91 percent of the Union's GDP. If we add the 9.3 billion euros planned for this purpose on the community level of the EU, which was obviously only implemented through the expense side, then we will get that the volume of the fiscal boosting of demand was 126.6 billion euros in the European Union in 2009, which makes up 1 percent of the GDP.

More than one and a half times of this, i.e. 1.7 percent of the GDP was used for the boosting of demand in the USA in 2009. Out of the 242 billion dollars, the tax cuts amounted to 122 billion dollars, which primarily affected the corporate income tax, and secondarily, the personal income tax. The other side of the package aimed at increasing the expenses partially relied on environmental, infrastructural, construction industry and agricultural investments, while the social transfers also rose.

According to the estimates, automatic stabilizers play a more significant role than discretionary measures, in their magnitude (see Derooese et al., 2008; European Commission, 2009). However, as opposed to the fiscal packages, it is not only the effects of these that are difficult to quantify but also, the size of the tool itself. When examining the operation of automatic stabilizers, it is worth starting out from that the more significant role the state takes on, the greater the anticyclical effect will be, due to the "helplessness" of the expense side.

If we measure the size of automatic stabilizers based on this, significant differences between the individual countries will be outlined. In general, in the European countries and mostly, in the Northern part of the continent, the state undertakes a more significant role. The average of the European Union (a GDP-rated 45.7 percent in 2007) is nearly ten percentage points, i.e. one quarter higher than in

the United States, and the difference is even bigger if the EU figures are compared to those of Japan, China or Korea. All this may perhaps explain the earlier statement as well, i.e. that in general, the key states of the EU spend less on discretionary measures than the other countries of the G20.

In one of the earlier publications of the IMF (IMF, 2009a), a different standpoint is taken on the issue. In this study, an estimate has been made on what extent the effect of the automatic stabilizers will deteriorate the budgetary balance. This depends on the decline of the economy and the size and helplessness of the expenses. The former is measured by the experts of the monetary fund by assessing how much the output gap, i. e. the difference between the real and potential GDP, has changed from one year to the other in a certain country. According to the latest calculations, in the case of the G20 countries, the budgetary balance deteriorated by an average GDP-rated 0.2 percent as a result of the automatic stabilizers in 2008, while the deficit grew by 1.8 percent in 2009, as a result *(see Chart 4)*.

In another study (IMF, 2009b), the experts of the monetary fund calculated the amount by which the budgetary balance deteriorated in each country as a result of the automatic stabilizers. The findings suggest that in general, this phenomenon affects those developed countries most where the extent of state involvement is higher, while those of the G20 states which belong to the emerging economies are usually towards the end of the list.

RESULTS AND COSTS

The analysis of the impacts of fiscal policy is made difficult by several factors. First of all, it is very difficult to filter those results from the growth data which may be put down to the discretionary, or the non-discretionary measures.

Chart 4

THE EFFECT OF AUTOMATIC STABILIZERS ON THE BUDGETARY BALANCE IN THE G20 COUNTRIES (2008–2010)
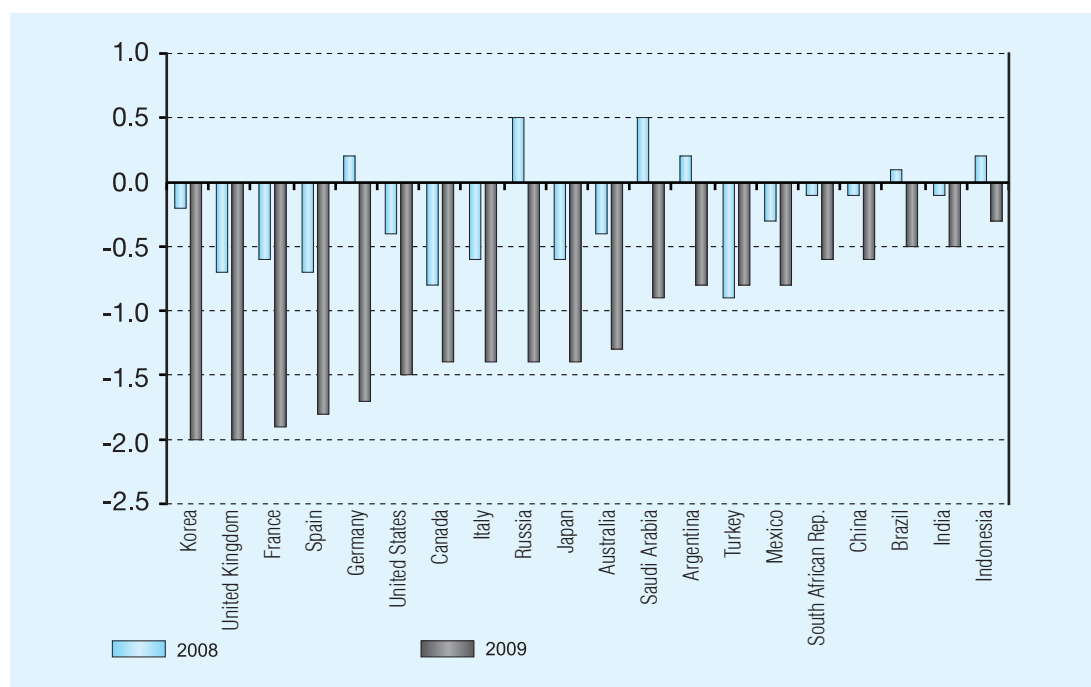
Source: IMF (2009b)

If we knew accurately to what extent e.g. a state investment contributed to growth, we would still have enough questions to ask. On the one hand, the short-and long-term impacts of the measure in question should be divided from each other. On the other hand, it should be estimated how the fiscal measure under review has affected the behavior of the players of the economy, besides the growh (see the crowding out effect).

Because of all this, we cannot talk about factual experience even in relation to the fiscal demand-boosting packages deployed in the current crisis. Those calculations which come to be published, especially within the circles of the international financial and economic organizations, are usually estimations. OECD (2009), for instance, tried to estimate the effectiveness of the fiscal demand-boosting packages by estimating the size of the fiscal multi-

plier for each country on the basis of an econometric model called INTELINK, which had been prepared earlier, and has already been mentioned in this study *(see Chart 5)*.

According to calculations, the fiscal package is the tool that is most capable of contributing to economic growth, or the moderation of decline in Australia and the United States. Although the effect is not necessarily proportionate to the costs involved by the measure, it is obvious that it is mainly those non-European countries, except for Poland, which spend relatively much on this purpose that are actually successful in moderating the decrease of the economy. Those, mainly European nations, which use smaller amounts on the fiscal stimulation of demand, cannot expect too much success according to the estimates of the model.

The findings of the OECD are in harmony with the conclusions drawn by the European

Chart 5

CONTRIBUTION OF THE FISCAL PACKAGES TO THE CHANGES IN THE GDP

(in brackets, the GDP-rated price of the package)
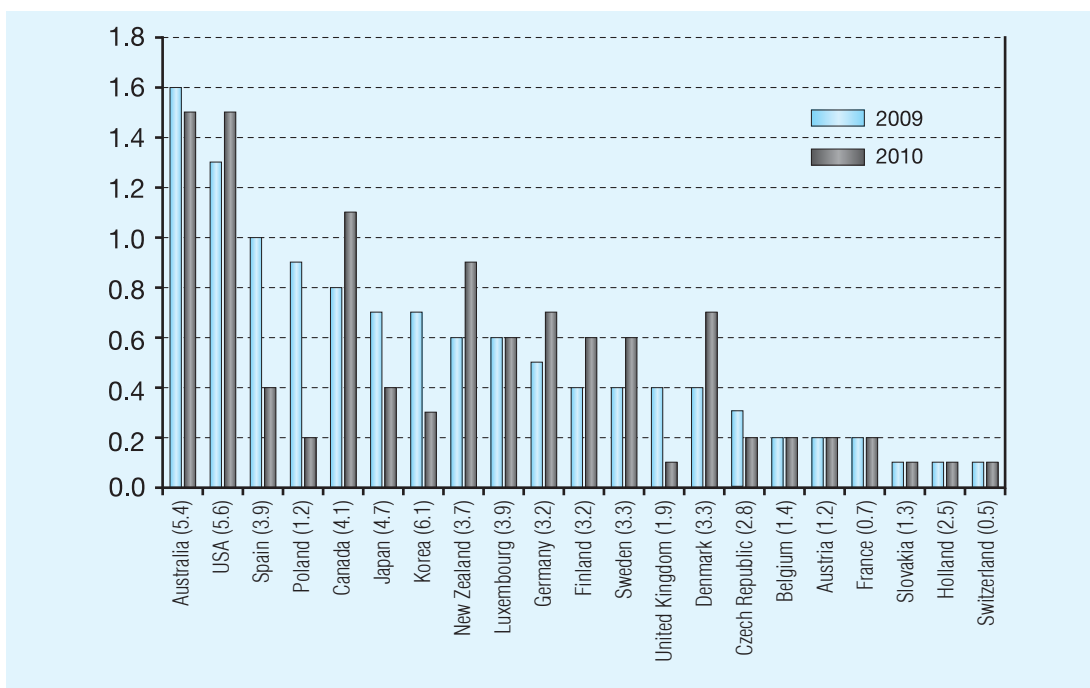
Source: OECD (2009)

Commission. According to their estimates, in the European Union, the automatic stabilizers contribute to growth by 3.2 percentage points, while the fiscal boosting packages will increase the GDP to a much smaller extent, i.e. by 1.8 percentage points in two years, i.e. in 2009–2010.

It is obvious from the above that the crisis iteslf and the crisis management measures exert a significant effect on the budget. As a result of the decline of the economy, the tax incomes are decreasing, the social expenses are growing, just like the interest burdens of financing, and besides all these, we also have to take the price of the fiscal stimulation of demand, the costs of monetary measures, as well as the so-called "below-the-line items" into account. The latter group contains those bank rescue acts and other measures taken in order to ensure the liquidity of the money market which are not

specifically represented in the budget but which increase the state debt.

The joint effect of the above-listed factors, however, can be traced in the evolution of the budgetary balance. The latest forecasts suggest that the balance of the public finances in the eurozone would deteriorate by 6.3 percent between 2007 and 2010, while in the average of the OECD member states, this figure is 7.4 percent, and in the G20 countries, 5.9 percent.

The public finance deficit will evolve between GDP-rated 7 and 9 percent in the above-mentioned countries in 2010, according to the forecasts. The fact that it is not a temporary increase in the deficit is confirmed by that IMF's long-term forecast indicates that in the countries of the G20, the deficit will be 3.4 percent even in 2014, which is more than three times the size of the 2007 deficit *(see Table 3)*.

Table 3

EVOLUTION OF BUDGETARY BALANCES EXPRESSED AS A PERCENTAGE OF THE GDP (2007–2010)

	2007	2008	2009	2010	2010–2007
Eurozone	−0.6	−1.9	−5.3	−6.5	−5.9
EU27	−0.8	−2.3	−6.0	−7.3	−6.5
OECD	−1.4	−3.2	−7.7	−8.8	−7.4
G20	−1.0	−2.8	−8.0	−6.9	−5.9
G-20 (developed countries)	−1.8	−4.3	−9.8	−8.4	−6.6
G-20 (emerging countries)	0.2	−0.4	−4.8	−4.2	−4.4

Source: OECD, European Commission, IMF

The deterioration of the budgetary balance affects almost all the countries, except for Hungary, which continues the budgetary adjustment that had been started earlier. According to the latest estimates, the balance will deteriorate by more than 10 percent in Ireland and Iceland, where this is the clear effect of the decline of the economy, and in their case, similarly to Hungary, it is not possible to boost demand by fiscal tools. The deterioration of the Spanish, British, New Zealandian and Latvian balances is also two-digit, while the size of the fiscal package does not reach 2 percent in London, and it is below 4 percent in Spain and New Zealand as well. With Norway, where even in spite of a worsening balance, an 11 percent surplus is anticipated for 2010, as the only exception, the deficit will exceed 2 percent in each EU, OECD and G20 member state, and it is only in three countries, namely Switzerland, Korea and Bulgaria, where a deficit that is lower than 3 percent is expected.

The budgetary balance leaves its mark on the evolution of the state debt as well. It turns out from the latest statistics of the European Commission which factor mostly accounts for the expected growth of the state debt in each member state. In the EU, it is mostly the Irish, the Latvians, the Brits, the Spanish, and the French whose public debt is rising, by more than 20 percent of the GDP for each. An aver-age 20.7 percentage point increase is expected in the European Union, while the same expectation is 17.8 percentage points in the eurozone.

It is usually forty percent of the indebtedness estimated for the last three years of the period that can be traced back to the deterioration of the primary balance, roughly half of it results from the increased interest rates of the credits required for financing, as well as the slight increase in the denominator. The average proportion of the below-the-line items is 10 percent.

The increase in public debts is of course not only typical in the European Union. According to the latest surveys, the state debt in the OECD member states is increasing by 26.7 percent, while this growth rate is 18.8 percent in the G20 countries. In the United States, for instance, the GDP-rated state debt will rise from 63.1 percent to 97.5 percent, i.e. by 34.4 percent between 2007 and 2010 *(see Table 4)*.

IMF (2009b) draws the readers' attention to that the stopping or reversal of the trend of the growth of debts will probably last for a long time. Their estimates suggest that the GDP-rated state debt of the U.S. mentioned above will already reach 106.7 percent in 2014, while this figure will go up to 84.6 percent in the next four years in the case of the G20 countries.

Based on all the above, it can be taken for granted that the first thing to be done after recovery from the crisis will be to handle

Table 4

EVOLUTION OF STATE DEBTS EXPRESSED AS A PERCENTAGE OF THE GDP (2007–2010)

	2007	2008	2009	2010	2010–2007
Eurozone	66.0	69.3	77.7	83.8	17.8
EU-27	58.7	61.5	72.6	79.4	20.7
OECD	73.5	78.7	91.6	100.2	26.7
G20	62.8	65.9	75.7	81.6	18.8
G-20 (developed countries)	77.6	83.4	87.7	106.4	28.8
G-20 (emerging countries)	37.8	36.4	38.7	39.9	2.1

Source: OECD, European Commission, IMF

indebtedness. This seems to be a painful process from several aspects. The affected countries will be compelled to adjust their budgets, as they will have to improve their budgetary balances by raising taxes or reducing expenses. If we come to think of it, and as we have referred to it earlier, it would not be unprecedented if consolidation was dominated by the non-Keynesian effects, i.e. it was accompanied by economic expansion but this is tied to some conditions at least as much as a successful boosting of demand by the state. In many countries, the decline in domestic demand will be unavoidable, which will again result in the moderation of the growth of the economy.

Furthermore, the globally increasing state debts may also cause financing difficulties. It is especially the financing of the state debts of smaller states that may become more expensive if the indebted "large" ones, which are more reliable in the eyes of the investors, siphon off the capital from them.

SUMMARY

In the first part of the study, we have described how the fiscal stimulation of demand works. Earlier experience and the theoretical literature, which partly relies on the former, suggest that the fiscal boosting of demand can only be suc-cessful if a highly complex set of conditions exists.

After reviewing the discretionary measures, we examined to what extent the economic policies of the individual countries adjust to this theory, as well as the regularities defined on the basis of the previous years. As regards the balance of public finances, the signs are favorable. In the case of the G20 countries, for example, the states that announced the widest fiscal expansion are the countries with the lowest state debts. In the majority of these states, the state debt does not exceed 40 percent of the GDP even in 2009. From this respect, Japan is an exception, which has strongly committed itself to the fiscal stimulation of demand in spite of the fact that its GDP-rated state debt exceeds 200 percent. The examination of the OECD member states shows a similar picture: learning from the experience of earlier stimulations of demand, it is those countries which had lower state debts that mostly brought themselves to moderate the effects of the crisis in such a way.

The situation is different if we examine another important condition, i.e. the existence of unused capacities. As has been pointed out in Benczes's (2009) study as well, due to the structural problems, the output gap was positive as early as in 2007, not only in all the member states of the European Union but also in the United States. This considerably

decreases the chances of the stimulation of demand by the state.

With regard to the structure and composition of the packages, the overall picture is more refined. The majority of theoretical literature and model calculations go for the boosting of the expense side but we cannot talk of a consensus. This is why the role of the fact that on average, the packages announced to date rely on the income and the expense sides to the same extent, should not be overemphasized. What is generally true, however, is that this means substantial differences in the case of the individual countries. From among those countries that spend a lot of money on the boosting of demand, i.e. the Czech Republic, Sweden, Korea and New Zealand, primarily lean on tax cuts, while Denmark and Australia rely more on the expense side. Most of the states, however, including the USA, Germany, Spain, Canada, have come out with mixed packages.

It is in line with the statements of technical literature that infrastructural investments dominate the expense side. On the income side, the overall picture is more diverse, but what is definitely to be pointed out is that the taxes on income are decreasing primarily, and the deductions from consumption are reduced secondarily.

CONCLUSION

One of the purposes of the study was to give a clear picture of the significance and role of boosting demand by the state. Although the state stimulation of demand financed from public funds is an important and efficient tool in crisis management, it cannot be regarded as a wonder weapon. On the one hand, it should not be considered one because it can only be successful in a certain environment, so some of the countries cannot use it at all. On the other hand, even if it is a success, it can only alleviate the effects of the crisis to a limited extent. Their annual average contribution in the European Union is lower than 1 percent of the GDP, which means nearly half of that of the automatic stabilizers.

Recovery depends at least this much on countless other factors, let us just think of the restoration of financial stability, or the arsenal of tools applied by monetary policy. The role of state stimuli in this is not dominant in either recovery or indebtedness. The changes in the primary balance have caused nearly 40 percent of the indebtedness in the EU and the tax income missed because of recession represents at least twice as much weight within this as the boosting of demand by the state.

Notes

[1] I owe gratitude to András Balatoni, László Csaba and Tamás Gáspár for their useful advice. It is of course exclusively the author who will be held liable for any errors or mistakes.

[2] A fiscal multiplier indicates how a one percent change in the balance of the public finances, or another fiscal variable affects the evolution of the real GDP.

[3] On more details, see the study by Mellár (1997).

[4] As opposed to the Keynesian and neo-Keynesian approaches, the non-Keynesian approaches empha-

size the positive effect of the reduction of budgetary expenses on outputs. From the eighties onwards, it has become obvious from the examples of several European countries that those adjustments that successfully implement the stopping or merely the moderation of the increase in the debts, which mainly focus on the expense side of public finances, stand good chances of resulting in expansive effects (Benczes, 2006). In another study (Gáspár, 2005), however, the readers' attention is called to the fact that budgetary corrections based on the reduction of expenses were generally performed in the case of significant problems in the equilibrium. In other words, unfavorable starting positions increased the willing-

ness of the private sector to consume and invest after the credible adjustment. (See also Párkányi, 2006; Horváth et al., 2006)

5 Internal lag refers to the time while the policymakers recognize the necessity of changing the fiscal policy and take the appropriate measures. External lag indicates how long it takes for the fiscal measures to exert their effect through the aggregated demand.

6 According to the authors' definition, a recession period is the year or those years when the increase of real GDP lags behind the growth trend in an extent that exceeds the variation.

7 On the factors contributing to the crisis, see more details in the works of Győrffy (2009) and Magas (2009).

8 Together, they produce over 90 percent of the GDP of the European Union. From among the 13 countries, it was in Greece and Ireland that no discretionary fiscal measures aimed at boosting demand were taken. As opposed to the OECD, the study does not list the measures taken in Denmark among the packages aimed at the fiscal boosting of demand.

LITERATURE

ARDAGNA, S. (2000): Fiscal Policy Composition, Public Debt and Economic Activity, Public Choice, *Springer, Volume 109 (3–4), pp. 301–25*

BARRO, R. J. (1974): Are Government Bonds Net Wealth? *Journal of Political Economy, Volume 82, issue 6, pp. 1095–1117*

BARRO, R. J. (2009): Government Spending Is No Free Lunch, *Wall Street Journal, January 22*

BENCZES, I. (2006): Nem-keynesi hatások érvényre jutása a keresleti oldalon (Enforcement of Non-Keynesian Effects on the Demand Side), *Competitio, Year 5, issue 3, pp. 83–105*

BENCZES. I. (2009): Expanziós költségvetési politika és hatásai az EU-ban (Expansive Budgetary Policy and its Effects in the EU), *Külgazdaság (the journal Foreign Economy), Year LIII, issues 7–8, pp. 4–22*

BESSENYEI, I. (2007): A makroökonómia és makrogazdasági politika újabb elméletei (New Theories of Macroeconomics and Macroeconomic Policy), *Pécs University of Sciences, Faculty of Economics, Pécs*

BLANCHARD, O. – PEROTTI, R. (2002): An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output, *Quarterly Journal of Economics, Volume 117, MIT Press*

CSABA, L. (2008): Az újfajta makroökonómiai populizmus (The New Kind of Macroeconomic Populism), *Pénzügyi Szemle (the journal Financial Review), Year 53, issue 4, pp. 592–606*

DAALSGARD, T. – ANDRÉ, C. – RICHARDSON, P. (2001): Standard Shocks in the OECD Interlink Model, *OECD Economics Department, Working Paper, Number 306, OECD*

DEROOSE, S. – LARCH, M. – SCHAECHTER, A. (2008): Constricted, lame and pro-cyclical? Fiscal Policy in the euro area revisited, *European Commission*

ERDŐS, T. (2002): A keynesi elméleti rendszer és a válságkezelés (The Keynesian Theory and Crisis Management), in: Akik nyomot hagytak a 20. századon 1. (Those Who have Left their Mark on the 20th Century 1.), *Napvilág Kiadó (Napvilág Publishers)*

GÁSPÁR, P. (2005): Expanzív költségvetési kiigazítás: lehetséges-e Magyarországon nem keynesiánus hatásokkal járó korrekció? (Expansive Budgetary Adjustment – Is Adjustment Involving Non-Keynesian Effects Possible in Hungary?), *ICEG Opinion, XXI, Budapest*

GYŐRFFY, D. (2009): Szép új világ Amerikában – az állam álmai és a válság valósága (Brave New World in the United States – the Dreams of the State and the Reality of the Crisis), *Pénzügyi Szemle (the journal Financial Review), Year 55, issues 2-3, pp. 318–338*

HAAVELMO, T. (1945): Multiplier Effects of a Balanced Budget, *Econometrica, 13, pp. 311–318*

HEMMING, R. – KELL, M. – MAHFOUZ, S. (2002a): The Effectiveness of Fiscal Policy in Stimulating Economic Activity – A Review of the Literature, *IMF Working Paper, 02/2008*

HEMMING, R. – MAHFOUZ, S. – AXEL S. (2002b): Fiscal Policy and Economic Activity during Recessions in Advanced Economies, *IMF Working Paper, 02/87*

HORVÁTH, Á. – P. KISS, G. – JAKAB, M. Z. – PÁRKÁNYI, B.: Myths and Maths: Macroeconomic Effects of Fiscal Adjustments in Hungary, *NBH Occasional Papers 52*

KRUGMAN, P. (2008): Fiscal expansion, *The New York Times, December 1*

KEYNES, J. M. (1936): The General Theory of Employment, Interest, and Money, *London, Macmillan*

LEDUC, S. (2009): Fighting Downturns with Fiscal Policy, *FRBSF Economic Letter, issue 20*

MAGAS, I. (2009): Ciklikusság és válságok az amerikai gazdaságban (Cyclicity and Crises in the U.S. Economy), 1929–2008, *Pénzügyi Szemle (the journal Financial Review), Year 55, issues 2–3, pp. 339–359*

MELLÁR, T. (1997): Alkalmazott makroökonómia (Applied Macroeconomics), *JPTE (Janus Pannonius University), Ph.D. Program in Business Administration, Pécs*

MILLER, M. – SKIDELSKY, R. – WELLER, P. (1990): Fear of Deficit Financing: Is It Rational? In R. Dornbusch and M. Draghi (ed.), Public Debt Management: Theory and History, *Cambridge, MA, Cambridge University Press, pp. 293–310*

PÁRKÁNYI, B. (2006): Tények és talányok: A fiskális kiigazítások makrogazdasági hatásai Magyarországon (Facts and Mysteries – Macroeconomic Effects of Fiscal Adjustments in Hungary), *MNB-szemle (NBH Review), June, pp. 34–40*

PIGOU, A. C. (1943): The classical stationary state, *Economic Journal 53, (212), pp. 343–352*

RÁCZ, M. (2009): Vélekedés a válságról az Európai Unióban kialakult helyzet alapján (Opinion on the Crisis based on the Situation that has Evolved in the European Union), *Pénzügyi Szemle (the journal Financial Review), Year 55, issues 2–3, pp. 303–317*

SAHA, D. – WIZSACKER, J. (2009): EU Stimulus Package – Estimating the size of the European stimulus packages for 2009: an update, *Bruguel Policy Contribution*

European Commission (2009): Public Finances in EMU, 2009, *European Economy. Commission Staff Working Document*

IMF (2009a): Fiscal Implications of the Global Economic and Financial Crisis, *IMF Staff Position Note, SPN/09/13*

IMF (2009b): The State of Public Finances: Outlook and Medium-Term Policies after the 2008 Crisis, *Companion Paper*

OECD (2009): Economic Outlook, *Preliminary Edition, 85*