KÖLTSÉGVETÉSI FELELŐSSÉGI INTÉZET BUDAPEST

BASELINE PROJECTION (2011-15)

29 September 2011

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1 Summary

The objective of this study is twofold. Firstly, it gives a non partisan portray of the medium term macroeconomic and fiscal path emerging from economic developments and from legislation promulgated by 8 September 2011. Secondly, it may be used by any analyst or economic actor to assess the expected fiscal effects of legislative bills discussed in this parliamentary session.

We should note two things at the outset:

The transparency of fiscal policy was compromised on at least five counts during the drafting of the year 2012 budget.

1. the Government has published no sufficiently detailed information on its own calculations of the fiscal baseline in the absence of any measures;
2. the term 'Pension Reform and Debt Reduction Fund' and its presentation technique continues to misleadingly confuse the issues of budget balance and financing;
3. the Government's communication is ambiguous as to how much of the debt to be assumed from MÁV and BKV is included in the budget balance target set for 2011 and which existing PPP agreements can be terminated in accordance with the target;
4. it is unclear when and how the part of the private pension fund assets fully recorded in 2011 in the Maastricht balance but not reflected under the Hungarian presentation (a sum above HUF 528 billion) will be included in the budget, and there is no clear justification for the persistence of this extremely large discrepancy between the Hungarian and EU presentations in 2012;
5. contrary to the requirements of the Public Finance Act, the substantive laws that the figures in the Budget Bill rely on are not known in full at the time of the submission of the Bill.

Our second comment relates to the factors taken into account in the projection. A professionally sound baseline projection needs to rely on the facts. In this respect, the data of the Hungarian Central Statistical Office (HCSO) and the legislation promulgated in the Official Gazette are considered to be facts. Thus the calculation results presented are not forecasts as they consciously and consistently disregard future economic policy decisions - irrespective of the probability of their adoption. While we ourselves have not made assumptions about any future decisions, we could not overlook the fact that the expectations, and thus the decisions, of economic actors may be affected substantially by legislative changes not yet officially promulgated. These changes are reflected to some extent, for instance, in the recent extremely hectic fluctuations of long term interest rates, which in turn directly effects the cost of financing the public debt.

Our calculations substantiate the following key statements:

1. Since the baseline projection of April, economic growth along the baseline course has slowed considerably. Our model calculations yield growth rates around 1.2 percent in 2011 and 2 percent after 2012. There is no substantive inflationary pressure; if the base rate is maintained at the current level, the 3 percent inflation target can be achieved.

2. Along the baseline, fiscal policy is extremely loose, the primary balance per GDP ratio shows a continuous and substantial deficit.
3. Net interest expenditures increase continuously even without any rise in short term interest rates.
4. When the financial developments in the central subsystem are incorporated in the calculation of the Maastricht balance, an adjustment of more than HUF 900 billion becomes necessary in the figures of the current convergence programme in 2012, which is to increase to over HUF 1400 billion in subsequent years.

Taking into account the bills not yet promulgated but already in the public domain before 8 September and the Government's declarations made in recent weeks, we have compiled a presumed package of measures and quantified its direct and indirect fiscal effects. We have not included among these the already promulgated act facilitating the prepayment of foreign currency denominated loans or the 18 percent minimum wage increase to enter into force in 2012.

In addition to the phasing out of supergrossing in the PIT system as of 2012, the package contains 9 tax raising measures, with a combined effect of approximately HUF 700 billion in 2012 and approximately HUF 1200-1400 billion after 2013. In aggregate, on its own even the presumed package of tax hikes will not allow for the withdrawal of the crisis taxes in the period under review, if the convergence programme is to be complied with.

2 Analysis of macroeconomic developments

In our projection, we started from long term trends of the economy, assuming the legislation promulgated before 8 September 2011 to remain unchanged. We present the baseline scenario we should expect to see unless there is a change in the economic policy.

In our macroeconomic baseline (see Table 1 and Annex 1) we reckon with weakening external demand and the expansion of the weighted imports of our trading partners along a course close to the IMF World Economic Outlook.

In our macroeconomic path we have reckoned with the fact that in addition to the legislation already promulgated, certain legal changes have, primarily due to the Government's communication, already been incorporated in the expectations of economic actors. Examples include the reincrease of the tax rate on corporate income in excess of HUF 500 million from 10% to 19% after 2012, the maintenance of the special taxes on financial organisations, retail chains, energy and telecommunications companies throughout the projection horizon as well as the excise tax raise already submitted to Parliament.

In the baseline scenario, the growth rate of the Hungarian economy will be at the modest rate around the potential level in the second half of the projection period, but the price to pay for this is a loose fiscal policy and the concomitant interest premium increase.

Household consumption will decline in 2011, staying below GDP growth in 2012 and slightly exceeding that rate after 2013. On the whole, in the 2010-2015 period real GDP will grow by 10.4 percent and household consumption by a mere 8.5 percent. This is mainly because households will increase their net savings due to cautionary considerations and the increased instalments payable on their existing loans. All these factors make it possible and necessary for the central bank to keep the base rate at a constant level in order to achieve the 3 percent inflation target. It should be emphasized that in our calculations we have not taken into account the act facilitating the prepayment of retail foreign currency denominated loans at preferential terms.

Gross fixed capital formation will continue declining in 2011 and it will reach the 5-6 percent growth range, which appears sustainable in the longer term, by 2013. This is attributable, in addition to the generally inclement economic climate, to the incorporation of the continuation of the crisis taxes into expectations. We should emphasize that from the microeconomic aspect, investment growth is extremely fragile as most part of it is generated by a few major projects.

Our calculations continue to show that, assuming minimum wages to remain constant, the business sector will be able to increase employment by some 90 thousand persons in the 2010-2014 period. If average wages in the public sector remain unchanged in nominal terms across the entire horizon, then due to the technical assumption of the projection the number of persons employed in the public sector may increase in line with inflation, but only as long as the balance of discretionary items is kept constant in real terms.

1: **Macroeconomic trajectory (annual real change, percent*)**

	2011	2012	2013	2014	2015
			Forecast		
GDP	1.2	2.2	2.3	2.0	2.3
Household consumption expenditure	-0.2	1.5	2.4	2.2	2.4
Social transfers in kind	-0.3	-0.6	0.0	0.0	0.0
Actual final consumption of the government	0.1	-0.5	0.0	0.0	0.0
Gross fixed capital formation	-1.3	4.2	5.5	6.2	5.3
Export	8.9	8.0	7.9	7.5	7.5
Import	7.7	7.9	8.6	8.4	8.0
Consumer price index	3.9	3.4	2.9	3.1	2.9
Private sector wages	5.0	5.6	4.3	4.6	4.8
Private sector employee no.	0.5	0.7	0.9	0.8	0.8
Employee no. in national economy	-0.6	1.3	1.3	1.2	1.2
Unemployment rate (%)	10.6	9.7	8.7	7.9	7.3
HUF/EUR	280.5	283.6	286.0	289.6	293.2
Three-month interest rate	6.1	6.1	5.9	6.0	5.8

** With the exception of the unemployment rate, the HUF/EUR exchange rate and the three-month interest rate, where the table contains annual average levels.*

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3 Analysis of changes in budget items

3.1 Mandatory items

The development of mandatory items (tax and contribution revenues, welfare expenditures) are driven by the components of growth and legislative changes entering into force in the period under review.

2011-15

The ***mandatory revenues*** to GDP ratio will decline by almost 3 percentage points between 2011 and 2013 along the baseline course. This is attributable to the phasing out of supergrossing in the PIT system and the cut in the corporate profit tax rate. Even though we expect that these measures are no longer included in expectations, they are still in effect under the current "Official Gazette status". The excise tax revenue figures for 2011 and projected for subsequent years do not contain the effects of the tax raise approved after 8 September.

In 2011 the contribution receipts of various funds (pension insurance, health insurance and labour market) have rocketed due to the redirection of private pension fund payments, whereas in later years they will expand more or less in parallel with the wage and salary bill. During the forecasting of pension contributions payable by the insured persons we have taken into account the fact that persons staying in the private pension fund system will pay the 8% pension contribution to an entity outside the budget from 2012 on.[1]

[1] Even though only 3% of private pension fund members stayed in the private system, we assumed in our calculations that, "portfolio-proportionately", the state system will forego 10% of the contribution revenues as

In the same period, the ***mandatory expenditures*** to GDP ratio declines by only 1 percentage point. Of this, 0.3 percentage point is explained by pension expenditures; that is because throughout the projection horizon the GDP growth rate remains below 3 percent, consequently, under the current regulations, pensions are indexed solely to inflation. The projection does not reckon with any expenditure cuts relating to disability pensions and early retirement pensions. The family subsidies to GDP ratio will decline for two reasons. On the one hand, the law specifies the support rate in nominal terms, and on the other hand, the number of births has dropped by approximately 10 percent in the past twelve-eighteen months. In our projection we have assumed that the number of births expected for this year (85 thousand) will stabilise around the 90 thousand level in 2012-15. Predominantly due to the regulatory changes enacted in the summer of 2011, passive benefits will drop by almost 70 percent (more than 0.3 percentage points in proportion to GDP) as compared to 2011. Of mandatory expenditures, EU payments will increase slightly.

3.2 Discretionary items

Forecasting the development of discretionary items in 2011 is not a problem for economists as the Government has an extremely wide manoeuvring room, in excess of 1 percent of GDP, to change the balance directly due to the assumption of the debt of MÁV and BKV announced earlier then declared to be uncertain and the buyout of infrastructure investment implemented in previous years under PPP arrangements.

In the 2012-15 period, we have taken as our basis the discretionary balance approved in the budget act of 2011. We have reduced this by the HUF 244 billion frozen funds (subsequently incorporated in legislative amendments) and indexed it to inflation.

3.3 Interests and NBH loss reimbursement

Since our April baseline projection, both net interest expenditures and the level of losses to be reimbursed to the NBH have declined slightly along the baseline. In the projection period the GDP proportionate interest expenditures will increase slightly due to the rising debt to GDP ratio and the increase in the interest rates on euro bonds and loans, which represent a significant portion of the debt.

4 The fiscal effect of a presumed package of measures

In order to illustrate the magnitude of the required adjustment while abiding by the stringent rules of the genre of baseline projection, we have compiled a presumed package of measures. This test calculation is in no way to be construed as a value choice in respect of the measures examined; it is simply a not overly unrealistic illustration.

4.1 Direct effects of the presumed package of measures

1. Excise tax raise (with compensation to producers)

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the persons who opted in have above-average earnings. At this point, no accurate information is available about the contributions of persons staying in the private funds.

a. The excise tax of diesel oil will increase by 13 Forints but agricultural producers and carriers will receive compensation. In theory, the sale of diesel oil would generate excise tax of HUF 340 billion, but this is reduced by the approximately 30 billion reimbursement to agricultural producers and 10 billion to carriers. Accordingly, the net revenue amounts to HUF 300 billion. If the excise tax is increased from HUF 97 to HUF 110, the notional tax revenue increases from HUF 340 billion to HUF 385 billion. The tax reimbursement to agricultural producers grows proportionately from HUF 30 billion to HUF 35 billion, while the reimbursement to carries will be trebled from the former HUF 6.5 per litre to HUF 19.5, thus the reimbursement will grow from 10 billion to 30 billion. As a result, net revenues amount to HUF 320 billion, that is, in a static approach tax revenues increase by HUF 20 billion. As the overwhelming majority of diesel oil is used by producers, who will be able to pass most of the effects of the raise on to consumers, the price elasticity of the demand for diesel oil is very low at 5 percent. As the market price of diesel oil is in the order of HUF 400, the 13 Forint tax increase corresponds to a price increase of 3.25 percent, which, given the 5 percent elasticity, results in a 0.16 percent drop in demand. Projected to the total tax revenue of HUF 300 billion, this means a loss of only HUF 0.5 billion.
b. The excise tax on alcoholic beverages will increase by 50 percent. As the amount of tax generated from this source is in the order of HUF 40 billion, the 50 percent increase results in additional revenues of HUF 20 billion, in a static approach. As the price elasticity of demand for alcoholic beverages is 70 percent, the 10 percent price hike resulting from the tax increase will bring about a 7 percent drop in demand and thus HUF 2.7 billion of foregone tax revenues.
c. The excise tax on beer will increase by 5 percent. As the amount of tax generated from this source is in the order of HUF 40 billion, the 5 percent increase results in additional revenues of HUF 2 billion in a first approximation. The demand reducing effect of the resulting 1 percent price rise - given an elasticity of 40 percent - will result in foregone tax revenues of HUF 0.2 billion.
d. The effective excise tax of cigarettes, as a combined result of the specific and percentage excise tax hikes, will increase by an average of HUF 2500 by 2012 and by HUF 3600 by 2013 per thousand cigarettes. Reckoning with annual sales in the order of 14 billion cigarettes, this is HUF 35 billion, and from 2013 on, HUF 50 billion. Calculating with elasticity of 40 percent, the demand reducing effect will be HUF 9.3 billion in 2012 and HUF 13.4 billion in 2013.

The above calculations take into account the fact that due to the substitution effect, the excise tax revenue growth is smaller than it would seem in the purely static approach. However, the substitution effect does not influence the VAT increasing impact of the excise tax rise. Accordingly, the direct impact on VAT revenues will be HUF 19 billion in 2012 and HUF 23 billion in 2013.

2. Public health product tax

Even though officially not an excise tax, in practical terms the public health product tax or, as better known, the “hamburger tax”, can be analysed analogously. As a direct effect, we assume a static effect of HUF 20 billion for 2012. Just as in the case of excise products, we also expect substitution effects here (in theory this is the primary objective of the introduction of this tax). Considering that we have insufficient data for a more sophisticated estimate, we have assumed that the static revenue impact will be reduced by product substitution at the same rate as in the case of cigarettes, i.e., by 25-30 percent. Accordingly, we estimate the direct tax revenue impact to be HUF 16 billion. Considering that we are dealing with food, most of the substitutes are also likely to be foodstuffs, which are subject to the preferential VAT rate. In view of this, we estimate the VAT revenue impact to be HUF 3 billion.

3. VAT increase from 25 percent to 27 percent

Approximately 82 percent of the purchased consumption of households falls into the highest tax bracket. In case of these products, the implicit tax rate will increase from 20 percent to 21.26 percent as a result of the measure. Projected to the entire consumer basket, this means a notional average rate increase of 1 percentage point. The amount of VAT on the consumption of households is in the order of HUF 2300 billion, thus the static effect is HUF 130 billion. The amount of VAT on household investments is in the order of HUF 220 billion, but this falls in its entirety under the 25 percent rate, thus the static effect is (21.6/20-1)*220= HUF 14 billion. Consequently, the estimate total static impact in 2012 is HUF 144 billion.

4. The elimination of the tax credit in one step in the PIT system

In 2011 the employee tax credits reduce the personal income tax revenues of the state by an amount in the order of HUF 360 billion. This amount will not grow substantively as a result of the gross wage raises because the amount is increased at closely the same rate by the nominal rise of the allowance to persons in the lower (increasing) section of the tax credit band and decreased by the nominal decrease of the allowance to persons in the top section. Accordingly, throughout the horizon we have kept level, in nominal terms, the direct impact of the elimination of the tax credit.

5. Elimination of supergrossing in one step from 2012 in the PIT system

As from 2013 on supergrossing will be eliminated in the baseline scenario as well, only the 2012 effects need to be estimated. To this end, first we need to increase the PIT revenues as per the baseline by the amount of the tax credit, then the algebraic effect of the elimination of the supergross must be calculated from the result. Expressed as a formula:

$$d=0.135/1.135 * (T+\alpha)$$

where T is the tax revenue along the baseline course, α is the value of tax credit and d is the calculated direct impact

6. Maintenance of crisis taxes throughout the period

In the absence of the text of the legislation, we have kept unchanged, at nominal level, the rate of the special tax on financial organisation, retail chains, energy service providers and communications service providers throughout the period. The budget bill reckons with HUF 187 billion from the special tax on financial institutions and HUF 161 billion from the special tax on other sectors. Naturally, the payment of crisis taxes reduces the corporate income tax base. As along the baseline course the corporate profit tax rate in 2012 is 19 percent while it falls to 10 percent from 2013 on, we reckon with the appropriate cross-effects.

7. Raising the corporate profit tax rate back to 19 percent on profits above HUF 500 million

Using the impact assessment prepared by the Fiscal Council in 2010 and taking into account the altered macroeconomic trends, the static effect in 2013 is HUF 116 billion.

8. Increase of employee's health contribution by 1 percentage point

In the baseline, total contribution revenues in 2012 amount to HUF 3500 billion. As this results from the 27 percent employer's and 16.7 percent2 employee's, in total 43.7 percent contribution

[2] The notional rate is 17.5 percent but private pension fund members, representing some 10 percent of the total wage bill subject to contribution payments, do not pay the 8 percent pension contribution to the state.

rate, the 1 percentage point rate change causes revenue changes of HUF 80 billion - apart from the effects on labour market behaviour.

9. Sole proprietors paying contribution on 150% of the minimum wage

The statistical headcount of sole proprietors was approx. 370 thousand persons in 2009. Assuming the changed rules to be fully effective and the HUF 78 thousand monthly minimum wage to remain unchanged, the 17.5 percent combined contribution needs to be paid on HUF 117 thousand, rather than HUF 78 thousand, each month. The amendment has a static effect of HUF 30.3 billion.

10. Increasing the company car tax by 40 percent on average

We assume that the tax rate hike will have no substantive demand reducing effect, therefore we estimate the direct effect to be 40 percent of the tax revenue in the baseline.

The estimated direct effects of the presumed measures listed above are summarised in the table below.

The total of direct effects will be approximately HUF 700 billion in 2012, going up to HUF 1200 billion in subsequent years.

Table 2: Direct fiscal effects of the presumed package of measures (HUF billion)

Budget item affected		2012	2013	2014	2015
Excise tax raise		64,3	75,2	79,4	83,9
Public health product tax ("hamburger tax")		16,0	16,4	16,8	17,2
Value added tax					
	VAT increase	144,0	152,0	160,6	169,5
	VAT effect of excise tax raise	19,3	23,0	24,3	25,7
	VAT effect of public health product tax	3,0	3,1	3,2	3,2
Company car tax increase		10,1	10,3	10,5	10,7
Personal income tax					
	Phase-out of the tax credit	360,0	360,0	360,0	360,0
	Accelerated phase-out of supergrossing	-190,3	0,0	0,0	0,0
Maintenance of the special tax on financial institutions		187,0	187,0	187,0	187,0
Maintenance of special sectoral taxes		0,0	161,0	161,0	161,0
Corporate profit tax					
	Raising the corporate profit tax rate back to 19 percent on profit above HUF 500	0,0	116,6	110,6	118,7
	Effect of special tax on financial institutions	-35,5	-18,7	-18,7	-18,7
	Effect of special sectoral taxes	0,0	-16,1	-16,1	-16,1
1 percentage point increase of employee health contribution		80,0	83,8	88,1	92,6
Sole proprietors paying contribution on 150% of the minimum wage		30,3	30,3	30,3	30,3
Total		688,1	1183,9	1196,9	1225,2

4.2 Indirect effects of the presumed package of measures

For the quantification of indirect effects, first we need to quantify the impacts of direct effects on the development of macroeconomic variables. The macroeconomic effects of the presumed package of measures are shown in Annex 4/a. In short, real GDP growth will decelerate slightly (?), household consumption considerably. As a result of consumption declining as compared to the baseline, imports are reduced and the trade balance will improve while the number of employees in the business sector will go down and investment decelerates. After the one-off inflationary shock in 2012, inflationary effects will be dominated by weak household demand. We should note that the measures in the package with major impacts are already incorporated in the baseline as expectations, which reduces the effects compared to the baseline course. As an opposite effect, most of the measures affect lower-income groups, who spend a relatively large proportion of their income on consumption, therefore we also took into account this so-called Keynesian effect in our model calculations.

Naturally, the improvement of the primary balance as a result of the presumed measures will also reduce the debt level and thus net interest expenditures. By way of approximation, we calculated the effect on interest expenditures as the multiple of the change in the primary balance and the implicit interest rate[3] on public debt in the baseline scenario.

The altered macroeconomic course is expected to trigger indirect fiscal effects. These are presented in detail in Annex 4/b. In summary, calculations show that the price increasing effect of the tax hike will push market wages upward slightly and therefore the contribution and PIT revenues as well as pension and sick pay expenditures will increase more than under the static effect, while VAT and excise tax revenues will grow less.

Table 3: Fiscal effects of the presumed package of measures (HUF billion)

	2012	2013	2014	2015
Direct effect in current year on the balance of mandator	688,1	1 183,9	1 196,9	1 225,2
Indirect effect in current year on the balance of mandat	-37,6	-49,4	-66,7	-55,6
Total effect in current year on the balance of mandatory	650,5	1 134,5	1 130,2	1 169,5
Effect on the interest balance	17,3	70,5	140,2	226,0
Total effect on the budget balance	667,8	1205,0	1270,4	1395,5

5 Description of the methodology

5.1 Payments by economic organisations

Our **corporate income tax** estimate is based primarily on the forecast in the baseline projection of April 2011; it is, however, influenced by four factors. First, due to the new GDP forecast, the amount of tax revenues has changed; second, the tax that can be offered for sports purposes is taken into account, in line with the budget estimate, as a HUF 20 billion revenue cut - which is nominally fixed, furthermore, due to the reduction of the corporate profit tax as a result of the special tax on pharmaceutical companies, revenues are expected to be HUF 5 billion short this year and HUF 10 billion short from next year on. In addition, we have reduced the 2011 estimate by HUF 20 billion as the tax refunds in June-July 2011 failed to produce the previously expected decline from the year 2010 level. The decrease of the 2011 estimate has a proportionate effect on subsequent years as well.

The estimate for the **rent of credit institutions** results from the year-to-date revenue figures, which we have fixed in nominal terms for the subsequent years.

In case of the **special tax on financial institutions**, erroneous payments need to be corrected - as some of the payments have gone to "**other receipts**". On the whole, this adjustment will yield HUF 4 billion less revenue on an annual level than we would expect based on the first six month revenue figures; however, on the other side of erroneous payments, "other receipts" show exactly the same amount of surplus.

[3] The implicit interest rate on public debt is the ratio of interest expenditures in the current year and the year-end debt stock.

The forecasting methodology for **crisis taxes on other sectors** has not changed, the amount has altered in accordance with shifts in the household consumption expenditure, purchased consumption and real GDP forecasts.

The estimation of the **company car tax** has been simplified as figures by taxation category and reported company car stock figures are not available. The 2011 tax revenues have been estimated based on the 2010 trends. Similarly to previous assumptions, we approximated the growth rate of the number of company cars to real GDP growth.

The year 2011 estimate for the **income tax of energy suppliers** is also derived from the revenues of last year, which we fixed for 2012 as well; furthermore, due to cash flow carry-over effects, some HUF 1 billion revenue is to be also expected for 2013.

The **corporate surtax** was abolished in 2011, therefore we calculated the expected refunds for the whole year based on the refunds of the first half of the year.

The **simplified business tax** for 2011 was calculated based on two different methodologies. On the one side, the revenue for the entire year results from the revenue figures available up till July 2011 and the monthly breakdown of the revenues of prior years, and on the other side, we also got an estimate for 2011 based on the 2010 revenue figures and elasticity to nominal GDP growth.[4] The average of the two yielded our present estimate - which we have increased throughout the 2012-2015 period in proportion to the nominal GDP growth rate, taking into account the elasticity used before.

For this year, we estimated the **mining rent** based on the average monthly revenue in May-July 2011, while subsequent years were indexed to oil prices.

The behavioural effect of the change in the amount of the **rehabilitation contribution** early in 2010 appears to have stabilised as evidenced by headcount estimates. The former headcount of around 80,000 dropped by some 10,000 persons as a result of the 5.43 time increase. In the present baseline projection we used the average of the headcount estimated from the revenues of the latest 4 quarters.

5.2 Consumption related taxes

For forecasting **VAT** revenues, first we had to come up with an estimate for the difference between the notional and effective average rates. For this, we essentially used five types of data: the year 2010 purchased consumption, household investments, intermediate consumption of the government and gross fixed capital formation of the government, as well as the VAT revenues for 2010. Assuming that the tax on transactions on the government side is always paid, the VAT payment of the government sector can be calculated from the government consumption and investment figures and the effective rates for these available at the Office of the Fiscal Council; we kept this figure constant in real terms throughout the projection period. We approximate payments by households with purchased consumption and household investments, from which VAT revenues are derived again using the effective VAT rates calculated by the Office of the Fiscal Council. This, however, is considerably higher than the figure reasonable based on the 2010 data, therefore we also compute a

[4] The estimation of the elasticity of the simplified business tax to nominal GDP is discussed in more detail in the August 2010 baseline projection of the Fiscal Council.

correction rate, which captures transactions in the black economy.[5] For estimates for subsequent years, we consider the value derived from the 2010 data to be constant.

For 2011 the **excise tax** has been estimated by type of tax based on seasonal trends, except for revenues from tobacco. Considering that revenues rocketed in the wake of the excise tax increase debate in the summer, we projected the revenues of the last month in our calculations. (Excise tax revenues are available by tax category in a monthly breakdown.) For subsequent years, we approximated our 2011 estimate with the volume growth of purchased consumption, adjusting it for the average of the income elasticity typical for the various categories. (The income elasticity also comes from the calculations of the Office of the Fiscal Council.)

Our forecast for the **registration tax** is effectively the April forecast, with the difference that we adjusted it for changes in the macroeconomic forecast.

5.3 Payments by households

The estimate for the **personal income tax** in 2011 was derived from the average lag calculated compared to the payments of last year. (The ratio of the monthly receipts and reimbursements in the first half of 2011 to the corresponding figures of 2010.) Estimates for subsequent years come from the April baseline projection adjusted for changes in the nominal GDP forecast.

In the estimation of **stamp duties**, substantive changes occurred only in the methodologies for the duty on the transfer of property and of vehicles, and even there only in the estimation of the number of transactions. We assume that the behaviour of the property market is attributable mostly to the departure of the purchased consumption of households from the trend. (Due to the characteristics of the property market, it being much less elastic in time, the difference in consumption affects the property market with a year's delay.) Therefore, first we fitted a linear trend on the time series of purchased consumption. Thus the departure of consumption from the trend was derived from the annual estimated and actual figures. Taking into account the effects of the interest subsidy that existed between end-1999 and 2003, we estimated the following regression equation (on data between 1999 and 2010):

$$log(number\ of\ transactions)_t = \alpha + \beta * consumption\ gap_{t-1} + \gamma * interest\ subsidy_{t-1} + \varepsilon$$

We used the coefficients resulting from this as a forecast for the transaction numbers in the 2011-15 period.

Based on the experience of prior years we assume that the number of vehicle transfer transactions is affected by the movement of the real GDP. The number of vehicles transfer transactions departs from the long term average six times more than the rate by which real GDP growth exceeds 1 percent. We have carried forward the 2009 actual transaction number to the 2011-15 period in line with this rule.

The methodologies of the estimation of **customs collection costs and the sugar industry contribution** have also been simplified. The estimate for 2011 results from the year-to-date revenues

[5] Using the methodology previously applied by the Fiscal Council, these ratios are 90.39% for household consumption and 61.59% for household investments. Thus, value added tax is paid in respect of approx. 90% of consumption goods and only 62% of investment-type transactions. Naturally, the level of the black economy changes year from year, which we are unable to track, therefore we have kept this ratio fixed throughout the projection horizon.

and seasonal trends, while for 2012-2015 we calculated revenues based on the 2010 actual figure - taking into account import growth.

We forecast most of the revenues of the **Labour Market, Pension Insurance** and **Health Insurance Funds** based on the effective rate derived from the findings of the April baseline projection and the gross average wage in the national economy. Taking into account that payments into private pension funds will be suspended only in 2011, the revenue of the pension fund falls short of the notional level by approx. HUF 50 billion a year.[6]

5.4 Family benefits, welfare benefits

For the estimation of **sick pay**, we started from the daily sick pay expenditures by sick pay category, available up to 2010, and the number of days on sick pay. Essentially, three adjustments must be made to our April baseline projection. Expenditures are reduced, on the one hand, by the termination of the passive sick pay as of 1 July 2011, and on the other hand, by the reduction by 50% of the maximum sum of the sick pay payable for one day; however, recorded expenditures are increased and the budget balance is worsened by the assumption by the state of the employer contribution relating to the sick pay of pregnant women at risk.

The estimation of **passive benefits** has also been changed substantially - mostly because major changes have entered into force as in effect all the categories have been terminated with the exception of stage 1 of the jobseeker's allowance and the wage substitution benefit. Apart from the two remaining categories of passive benefits, we reduced all the other headcounts to zero from September 2011, in proportion to the length of eligibility to the various categories.

5.5 Interests and NBH loss reimbursement

In our calculations we took into account information available on 31 August 2011 (public NBH balance sheet, stock of elements of debt, yield data). The methodology is the same as the one used at the Office of the Fiscal Council, except for items that would have required the use of publicly unavailable information. These relate mainly to derivative market transactions (repo, swap); we assumed their effect to be constant. The yield curve forecasts rely primarily on curves estimated with the so-called Svensson methodology; more specifically, for the Forint we also take into account the short term interest rate resulting from the macroeconomic path, while in the case of the euro, we consider the so-called implicit forward interest rates resulting from the euro yield curve published by the ECB to be the forecast.

We assume that the Single Treasury Account balance will continuously be around 200 billion, while the state will finance the instalment payable in the autumn of 2011 on the EU loan taken out in 2008 and the repayment of the euro bond maturing in the autumn from the foreign currency deposit at the NBH. We assume that the remaining foreign currency deposit, approx EUR 2 billion, will be maintained throughout the projection horizon.

Debt financing relies on compliance with the benchmarks set in the public framework system of the Debt Management Agency; the NBH has no specified foreign exchange reserve target but it maintains the stock of reserves around the present level.

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[6] Adjusting for private pension fund contributions, we calculated a new effective rate for 2012 for pension contribution revenues, which we assume to be constant until the end of the period.

ANNEXES

1. Annex 1: Key macroeconomic indicators in the baseline scenario

	2011 (f)	2012 (f)	2013 (f)	2014 (f)	2015 (f)
NATIONAL ACCOUNTS					
Nominal GDP (current prices, HUF bn)	28170	29579	31011	32495	33977
Real GDP (annual % growth)	1,2	2,2	2,3	2,0	2,3
Household consumption expenditure (acc. to Nat. Acc., current prices, HUF bn)	14387	15104	15913	16776	17677
Purchased consumption (HUF bn)	14153	14886	15711	16597	17525
purchased consumption (annual % growth)	3,8	5,2	5,5	5,6	5,6
volume of purchased consumption (annual % real growth)	-0,1	1,7	2,5	2,4	2,6
Collective consumption of the government (current prices, HUF bn)	2688	2751	2820	2894	2919
Social transfers in kind from government (current prices, HUF bn)	3253	3330	3417	3511	3559
Total government consumption at current prices	5941	6081	6237	6405	5467
Government investment acc. to Nat. Acc. (current prices, HUF bn)	748	765	779	796	811
Financial transfers from the government to households (acc. to Nat. Acc., current pri	4300	4410	4505	4697	4834
Import (current prices, HUF bn)	23298	25302	27597	30109	32730
Investments of households (current prices, HUF bn)	1127	1262	1382	1484	1558
Disposable income of households (current prices, HUF bn)	15554	16544	17434	18264	19101
PRICES					
Inflation rate (CPI, annual %)	3,9	3,4	2,9	3,1	2,9
GDP deflator (annual %)	2,6	2,8	2,5	2,7	2,2
Consumption expenditure deflator	4,0	3,4	3,0	3,2	3,0
Government consumption deflator	1,7	2,9	2,5	2,6	0,9
Social transfers in kind from government deflator	2,3	3,0	2,6	2,8	1,4
Investment deflator	2,6	2,3	1,9	2,1	2,0
Export deflator	0,3	0,6	0,4	0,6	0,6
Import deflator	0,8	0,7	0,4	0,6	2,0
LABOUR MARKET					
Number of persons employed in the national economy (LFS, annual average, thousa	3 760,5	3 810,6	3 859,6	3 907,6	3 956,0
of which: Business sector (LFS-budget sector, thousand persons)	3 023,9	3 044,9	3 072,7	3 097,2	3 123,2
Budget sector (institutional, technical assumption, thousand persons)	736,6	765,6	786,9	810,4	832,8
Number of persons employed in the national economy (annual change %)	-0,6	1,3	1,3	1,2	1,2
Business sector employment (annual change, %)	0,5	0,7	0,9	0,8	0,8
Public sector employment (annual change, %)	-4,8	3,9	2,8	3,0	2,8
Number of unemployed persons in the national economy (annual average, thousand	444,6	408,5	368,0	335,6	309,7
Unemployment rate (LFS, %)	10,6	9,7	8,7	7,9	7,3
Business sector gross nominal average wage (annual growth, %)	5,0	5,6	4,3	4,6	4,8
Public sector gross average wage (technical assumption)	193 763	203 751	204 051	204 364	204 647
Gross wage and salary bill in the national economy (current prices, HUF billion)	9958,8	10536,0	11042,3	11601,3	12201,9
Gross wage and salary bill in the national economy (annual growth, %)	3,5	5,8	4,8	5,1	5,2
"HCSO headcount and earnings" gross wage (annual growth, %)	4,1	4,4	3,5	3,8	3,9
"HCSO headcount and earnings" net wage (annual growth, %)	5,1	9,2	8,1	5,1	1,2
Pension indexation rate under legislative formula (annual growth, %)	3,9	3,4	2,9	3,1	2,9
TECHNICAL ASSUMPTIONS					
HUF/EUR exchange rate (annual averages)	280,5	283,6	286,0	289,6	293,2
Yield, 3-month benchmark	6,1	6,1	5,9	6,0	5,8
Oil price, HUF/barrel	21215,2	21661,5	21810,2	21882,8	21979,8

2. Annex 2: Changes in mandatory items in the baseline scenario

MANDATORY REVENUES						
Budget item	2010	2011	2012	2013	2014	2015
Payments by economic organisations						
Corporate profit tax	323,4	284,5	313,4	270,1	254,7	279,8
Fees of financial institutions	10,0	8,7	8,7	8,7	8,7	8,7
Special tax on financial institutions	182,3	175,4	0,0	0,0	0,0	0,0
Special taxes on certain sectors	151,7	155,7	161,7	7,4	0,0	0,0
Company car tax	25,9	24,6	25,2	25,7	26,3	26,9
Profit tax of energy suppliers	17,0	17,0	17,0	1,2	0,0	0,0
Corporate surtax	-32,4	-17,9	0,0	0,0	0,0	0,0
Simplified business tax	181,9	179,2	184,5	189,9	195,3	200,7
Eco-taxes	23,5	23,3	23,8	24,3	24,8	25,4
Mining rent	108,9	109,0	111,3	112,1	112,4	112,9
Gambling tax	53,4	48,9	47,9	46,8	45,7	44,6
Other payments	36,3	38,2	39,4	40,6	41,9	43,1
Rehabilitation contribution	54,2	66,6	66,6	66,6	66,6	66,6
Other centralised revenues (mandatory only!)	20,3	22,8	23,2	23,7	24,3	25,0
Consumption related taxes						
Value added tax	2 313,6	2 410,1	2 535,1	2 681,6	2 835,9	2 993,3
Excise tax	856,5	849,4	854,0	860,7	867,2	874,2
Registration tax	30,0	34,3	43,1	54,2	68,2	86,6
Payments by households						
Personal income tax	1 767,9	1 373,0	1 239,7	1 150,1	1 225,0	1 546,1
Special tax on private persons	6,1	0,0	0,0	0,0	0,0	0,0
Tax payments	3,0	0,6	0,6	0,6	0,6	0,6
Stamp duty payments	74,6	72,2	90,7	93,8	98,1	99,7
Tax on certain property items	0,0	0,0	0,0	0,0	0,0	0,0
Special tax on private persons rel. to termination of employment	0,0	5,5	0,0	0,0	0,0	0,0
Customs duty and sugar industry contribution reimbursement of cost of colle	8,6	6,2	10,1	11,1	12,1	13,1
Labour Market Fund						
Vocational training contribution	46,9	47,4	50,2	52,6	55,2	58,1
Part of health insurance and labour market contribution due to the Labour Ma	186,8	183,9	194,7	204,0	214,4	225,5
Repayment of wage guarantee subsidies	0,9	1,3	1,0	1,0	1,0	1,0
National Cultural Fund						
Gambling revenue from the 5/90 lottery game	10,9	9,0	9,6	10,0	10,5	11,0
Research and Technological Innovation Fund						
Innovation contribution	22,1	24,5	25,7	26,9	28,2	29,5
Pension Insurance Fund						
Employer’s and insured persons’ contribution	2 225,6	2 587,9	2 690,3	2 819,5	2 962,3	3 115,6
Other taxes and contributions (mandatory items only)	16,1	22,8	24,1	25,3	26,6	28,0
Health Insurance Fund						
Employer’s and insured persons’ contribution	612,8	591,7	626,3	656,4	689,7	725,4
Other taxes and contributions (mandatory items only)	39,0	33,1	35,1	36,7	38,6	40,6
Healthcare contribution	41,2	41,2	43,6	45,7	48,1	50,5
Mandatory revenues total	9 418,9	9 430,1	9 496,7	9 547,7	9 982,4	10 732,6

MANDATORY EXPENDITURES						
Budget item	2010	2011	2012	2013	2014	2015
Family benefits, welfare benefits						
Family benefits (deemed mandatory)	449,4	434,7	429,0	424,5	420,9	410,6
Income substitution and supplementary social benefits (deemed mandatory)	30,7	30,8	31,0	31,0	31,1	31,1
Contribution to EU budget	230,2	264,0	289,6	304,9	325,5	356,3
NBH loss reimbursement	0	0,0	120,3	183,4	109,9	80,3
LMF						
Passive benefits	138,3	128,9	70,5	44,3	40,7	39,3
Wage guarantee payments	6,1	4,9	4,8	4,8	4,9	4,9
Pension payments	2887,8	3 017,5	3 116,5	3 236,3	3 362,7	3 506,4
Health Insurance Fund						
Sick pay	74,1	74,9	74,3	81,6	87,1	89,3
Childcare benefit	92,8	86,5	85,4	88,4	90,3	92,7
Other cash benefits and allowances of the Health Insurance Fund (deemed m	37,6	37,6	41,9	44,1	46,7	49,6
Mandatory expenditures total	3 947,0	4 079,8	4 263,3	4 443,5	4 519,9	4 660,5
Balance of mandatory items	5 471,8	5 350,3	5 233,3	5 104,3	5 462,6	6 072,1

Annex 3/a: Various balance indicators in the baseline scenario

	2010	2011	2012	2013	2014	2015
Mandatory balance	5 471,8	5 350,3	5 233,3	5 104,3	5 462,6	6 072,1
Discretionary balance	-5 355,4	-5 526,3	-5 715,8	-5 883,0	-6 068,1	-6 244,8
Primary balance	116,4	-176,0	-482,5	-778,7	-605,6	-172,7
Interest balance	-1005,9	-1 109,1	-1 093,1	-1 273,4	-1 387,3	-1 567,9
Balance of the central sub-systems	-889,5	*-1 285,1*	-1 575,6	-2 052,1	-1 992,9	-1 740,6
Cash balance of local governments (taken from CP up to 2014)	-232,0	-150,0	-120,6	-95,9	-67,7	-40,3
ESA bridge*	-10,5	2 147,3	0,0	0,0	0,0	0,0
Maastricht balance	-1 132,0	712,2	-1 696,2	-2 148,0	-2 060,6	-1 780,9
Nominal GDP	27 119,8	28 170,0	29 579,1	31 011,1	32 495,1	33 976,8
Maastricht balance to GDP in the baseline scenario	-4,2%	2,5%	-5,7%	-6,9%	-6,3%	-5,2%
Maastricht balance to GDP acc. to the Convergence Programme			-2,5%	-2,2%	-1,9%	
Adjustment required			956,7	1465,8	1443,2	

** assumption: In 2011 derived from the EDP Report, and the recording of the total pension assets taken into state ownership, from 2012 on, 0)*

Note: The colouring of the discretionary balance of 2011 indicates that it is not an estimate made with the methodology of the baseline projection but a value derived from the official balance targets of the Government using the residual principle.

Annex 3/b: Gross debt of the central subsystem in the baseline scenario

	2010	2011	2012	2013	2014	2015
Public debt in nominal terms (HUF Bn)	20041,0	19237,8	20549,1	22316,5	24133,2	25780,3
Public debt to GDP	73,9%	68,3%	69,5%	72,0%	74,3%	75,9%
Public debt at year 2010 real value	20041,0	18515,3	19129,8	20185,0	21162,1	21966,9
Implicit interest rate of public debt	4,5%	5,8%	5,3%	5,7%	5,7%	6,1%

Annex 4/a: Effects of the presumed package of measures on macroeconomic indicators

	2012	2013	2014	2015
GDP	-0,2	-0,2	-0,1	0,0
Household consumption expenditure	-1,2	-0,3	0,0	0,1
Social transfers in kind	0,0	0,0	0,0	0,0
Collective consumption	0,0	0,0	0,0	0,0
Export	0,1	0,0	-0,2	-0,1
Import	-0,3	-0,1	-0,1	0,0
Gross fixed capital formation	0,1	-0,9	-0,1	-0,1
Consumer price index	0,7	-0,1	-0,2	0,0
Private sector wage	1,0	0,1	-0,2	0,0
Private sector employment	-0,1	-0,1	-0,1	0,0
Short term interes rate	-0,2	0,4	0,4	0,3

Annex 4/b: Indirect fiscal effects of the presumed package of measures

MANDATORY REVENUES				
Budget item	2012	2013	2014	2015
Payments by economic organisations				
Corporate profit tax	1,9	0,1	-1,3	-0,1
Fees of financial institutions	0,0	0,0	0,0	0,0
Special tax on financial institutions	0,0	0,0	0,0	0,0
Special taxes on certain sectors	-0,6	0,0	0,0	0,0
Company car tax	-0,1	-0,1	-0,1	-0,2
Profit tax of energy suppliers	0,0	0,0	0,0	0,0
Corporate surtax	0,0	0,0	0,0	0,0
Simplified business tax	0,4	0,0	-0,4	-0,4
Eco-taxes	0,0	-0,1	-0,1	-0,1
Mining rent	0,0	0,0	0,0	0,0
Gambling tax	0,0	0,0	0,0	0,0
Other payments	0,3	0,2	0,2	0,2
Rehabilitation contribution	0,0	0,0	0,0	0,0
Other centralised revenues (mandatory only!)	-0,3	-0,4	-0,4	-0,4
Consumption related taxes				
Value added tax	-30,3	-48,0	-55,7	-43,0
Excise tax	-3,2	-4,2	-4,3	-4,1
Registration tax	0,2	0,0	-0,2	0,0
Payments by households				
Personal income tax	0,0	10,3	10,4	12,2
Special tax on private persons	0,0	0,0	0,0	0,0
Tax payments	0,0	0,0	0,0	0,0
Stamp duty payments	0,5	0,8	0,2	0,1
Tax on certain property items	0,0	0,0	0,0	0,0
Special tax on private persons rel. to termination of employment	0,0	0,0	0,0	0,0
Customs duty and sugar industry contribution reimbursement of cost of collect	0,0	-0,1	-0,1	-0,1
Labour Market Fund				
Vocational training contribution	0,4	0,4	0,2	0,2
Part of health insurance and labour market contribution due to the Labour Marl	1,4	1,4	0,9	0,8
Repayment of wage guarantee subsidies	0,0	0,0	0,0	0,0
National Cultural Fund				
Gambling revenue from the 5/90 lottery game	0,0	0,0	0,0	0,0
Research and Technological Innovation Fund				
Innovation contribution	0,1	0,0	-0,1	-0,1
Pension Insurance Fund				
Employer’s and insured persons’ contribution	19,2	19,0	12,6	11,4
Other taxes and contributions (mandatory items only)	0,2	0,2	0,1	0,1
Health Insurance Fund				
Employer’s and insured persons’ contribution	4,5	4,4	2,9	2,7
Other taxes and contributions (mandatory items only)	0,3	0,2	0,2	0,1
Healthcare contribution	0,3	0,3	0,2	0,2
Mandatory revenues total	-5,0	-15,4	-34,7	-20,3

MANDATORY EXPENDITURES				
Budget item	2012	2013	2014	2015
Family benefits, welfare benefits				
Family benefits (deemed mandatory)	0,0	0,0	0,0	0,1
Income substitution and supplementary social benefits (deemed mandatory)	0,0	0,0	0,0	0,0
Contribution to EU budget	0,1	-1,8	-2,5	-2,6
NBH loss reimbursement	0,0	0,0	0,0	0,0
LMF				
Passive benefits	0,0	0,0	0,0	0,0
Wage guarantee payments	0,0	0,0	0,0	0,0
Pension payments	21,8	18,9	13,6	15,8
Health Insurance Fund	0,0	0,0	0,0	0,0
Sick pay	10,0	16,2	20,4	21,7
Childcare benefit	0,3	0,3	0,2	0,1
Other cash benefits and allowances of the Health Insurance Fund (deemed mai	0,3	0,3	0,2	0,2
Mandatory expenditures total	32,5	34,0	32,0	35,4
Balance of mandatory items	-37,6	-49,4	-66,7	-55,6