

# Péter Gál: Unfavourable investment data – risks to economic growth?<sup>1</sup>

*Future potential economic growth is a factor of key importance in judging the expected output gap and the inflationary pressure it entails. One important element of potential growth is the level and growth of real capital, which is materialized via investment. The tendency of investments thus provides an indication on the future potential growth. On the other hand, investments in the economy are part of aggregate demand, and thus in addition to its impact in the future, it also affects the present output gap and inflationary pressure. Finally, investments also offer insight into the expectations of economic actors regarding future prospects.*

*The decline in the volume of investment registered in 2006, unprecedented in the last ten years, thus has particular significance from the central banks' perspective. This decline was experienced in a wide range of breakdowns: among the types of investment assets (construction, machinery purchases) as well as in corporate and household sector private investment. The drop in the household and non-tradable corporate sectors is in line with weak domestic demand resulting from the fiscal adjustment. But the fall of investment in the tradable sector is surprising in light of the favourable current state of and outlook for European economic activity. Although there was a modest correction in this trend in the first quarter of 2007, a lasting weakness in capital expansion may indicate the long-term presence of a disadvantageous investment climate in Hungary.<sup>2</sup>*

## INTRODUCTION

In 2006, the volume of national economy investment in Hungary dropped for the first time in the last 10 years. Investment in the export-oriented manufacturing industry started to decrease even before the announcement of the fiscal adjustment package. In the past, international economic expansion, primarily in the Western European countries, was the most important driver for investment by domestic industrial producers. Therefore, in light of the presently favourable developments abroad, the current drop-off in investment is surprising and represents a cause for concern with regard to Hungary's potential growth.

Consequently, it is very important to understand what factors are behind the weak performance of manufacturing investment, and to investigate to what extent these factors can be regarded as temporary or permanent. This paper addresses these issues, after describing the general role of investment and some stylised facts, as well as briefly explaining the investment behaviour of the sectors (non-

tradable corporations, households, government) determined primarily by domestic demand.

## THE GENERAL ROLE OF INVESTMENT

Developments in economy-wide investment deserve attention in three main respects. First, investment is an important element of aggregate demand: in Hungary, similarly to the converging countries, it amounts to 20-25% of GDP, and, due to its volatility, it also has a significant impact on changes in GDP.<sup>3</sup> As part of aggregate demand, it influences the current output gap and thus the current demand-side inflationary pressure as well.

Secondly, as a result of investment, the available capital of the economy expands. That is, there are more production facilities and thus higher potential GDP. Therefore, on the supply side, investment determines to a significant degree potential future economic growth, that is, a growth rate along which the output gap is zero and no demand side inflationary pressure arises.

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<sup>2</sup> The MNB already indicated this problem in its 2006 publication "Analysis of the convergence process", and also drew attention to it in the evaluation of the actual developments in its inflation reports published in February and May 2007. As the data were unfavourable for several quarters, this highlights the possibility that the trend was not temporary and would not correct itself automatically after the fiscal adjustment. Even though the Q1 2007 data show a significant increase in investments in manufacturing, bearing in mind the noisiness of investment data (see Box), and the sustained trends that lasted for several quarters, this exceptionally good data is considered, for the time being, as merely making up for several quarters of missed capital formation. Although this single data point has reduced the risks of potentially unfavourable long-term prospects, in itself it does not invalidate the possibility of a slowing trend in investments. The objective of this paper is to review the detailed arguments on the long-term or temporary nature of the investment problem and to describe the facts in more depth.

<sup>3</sup> Investments are one of the most volatile GDP components, and this is especially true in the converging countries (Benczúr-Rátfai, 2005).

Finally, business investment reflects companies' future expectations. The reason for this is that investments are worthwhile only if they are expected to be profitable enough.<sup>4</sup>

The relative importance of these three aspects differs according to which sector (corporations, households or the government) is investing. Additional investment by any sector increases aggregate demand, however, from the aspect of potential growth, corporate investment plays the most important role. Although clearly-targeted and appropriately implemented public investment – e.g. infrastructure improvements – also has a beneficial impact on future production potential, its effect is rather indirect and uncertain, as it does not directly create production facilities.<sup>5</sup> Information on the private sector's profitability prospects is mainly reflected in the dynamics of corporate investment and, to a lesser extent, in the dynamics of household investment.

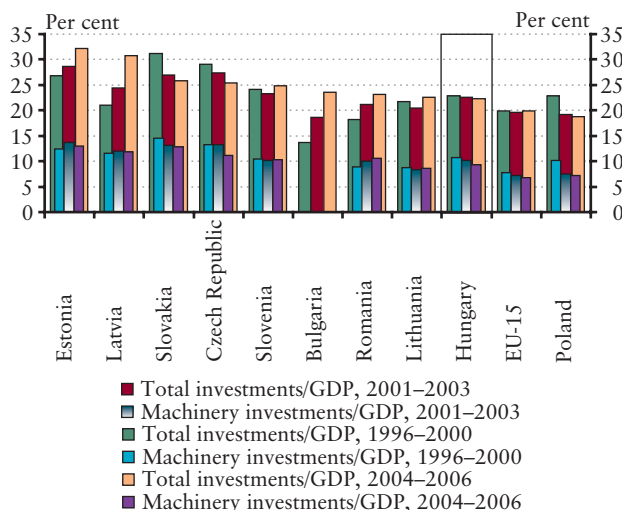
## STYLISTED FACTS ON HUNGARIAN INVESTMENTS IN INTERNATIONAL COMPARISON

The level of economic development is largely determined by the amount of available real capital (machinery, equipment, buildings, intangible assets, etc.). More capital can generate higher income assuming constant levels of labour and productivity.<sup>6</sup> Thus, in less developed countries with lower per capita income, the per capita amount of capital is also generally lower. Investing in capital in converging countries with a lower amount of capital thus brings higher yields than it would in a developed country. This potentially higher yield motivates economic agents to expand capital at a faster pace than generally seen in developed countries. The expansion of fixed capital is, by definition, investment.

The goal of achieving convergence as fast as possible requires that Hungary should also spend a higher proportion of its total income on expanding the stock of real capital, i.e. on investment, as compared to developed countries. One

**Figure 1**

**Total investments and machinery investments in some of the new EU member states and in the developed European countries (EU-15)\***



\* Current price data expressed as a percentage of GDP, in a descending order of the total investment rate between 2004–2006. No data is available on Bulgarian machinery investment.

Sources: Eurostat and MNB calculations.

indicator which captures this is the investment-to-GDP ratio. In comparison with other countries, Hungary's investment-to-GDP ratio stabilized at a higher level than that of the developed EU member states, in line with the expected economic convergence and higher growth. However, Hungary's ratio stands at a somewhat lower level than that of countries at a similar state of development (Figure 1). This was especially evident in the period following the latest EU expansion, starting from the end of 2004, when only Poland has shown a lower investment rate than Hungary in the region.

From the aspects of production capacities and possible future sources of income, corporate investment and machinery investment have special significance apart from the figures on total investment.<sup>7</sup> As statistical methodology problems render

<sup>4</sup> Household investments are mainly the expansion of residential property, thus they are not influenced so much by the general, short-term and medium-term changes in the economic cycle, but rather by the particular evolution of the property market, especially its supply side and the development of state subsidies. Over the long term, the determining factors may be demographic trends, financial deepening accompanying the economic development, and, to a certain extent, long-term income expectations.

<sup>5</sup> From the aspects of the purpose of their use, investments funded by the European Union are similar to government investments. The MNB's main finding in its convergence analysis in 2006 was that, according to earlier European experience, these investments, in general, have a fairly modest additional growth effect.

<sup>6</sup> This can be illustrated within an aggregate production-function approach. According to this, the level of production ( $Y$ ) in the economy depends on three factors: the level of technology ( $A$ ), the amount of available real capital ( $K$ ) and the amount of labour ( $L$ ). The general form is:

$$Y = f(A, K, L),$$

where the function  $f()$  is monotonously increasing in all of its variables.

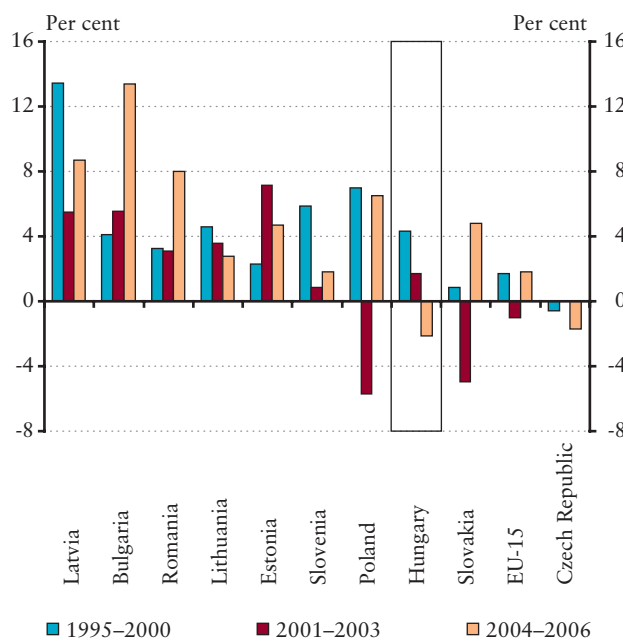
<sup>7</sup> The other large group of investment goods cover construction investments. These investments are household, corporate property and infrastructure investment, implemented typically through state contracts. Investment in intangible assets (e.g. computer software) is has small share in Hungary's domestic investments, constituting about 2–3% of all investments in the last few years. Out of these components, mostly the machinery-type investments move together with the economic cycles (European Commission, DG Economic and Financial Affairs, 2007).

international comparison of the former breakdown difficult,<sup>8</sup> we use the latter, and look at the ratio of machinery investment to GDP (Figure 1). The levels of these ratios are less than half of total investment in every country. The level in Hungary is higher than the average of the developed EU countries, but is somewhat lower than in most of our regional competitors (the new member states), and it also shows a falling trend.

Furthermore, from the aspects of growth and aggregate demand, the real growth difference between investment and income also deserves attention. The relationship between growth in investment and growth in income can be demonstrated by the difference in their real growth rates. This is illustrated in Figure 2, which shows that investment can be considered a less powerful source of growth on the demand-side than it is in the case of our competitors in the region. Furthermore, the tendency seen in the difference of growth rates reveals that, besides the Czech Republic, Hungary is the only country where growth in investment has been lower than GDP growth since the start of the current upswing in the European economy in 2004. Consequently, the expansion of capital may well have been lower than necessary to serve the presently dynamic external demand, and that may create a supply side problem as well. This finding seems to be in line with some signs indicating that Hungary is possibly less involved in the current European economic boom than during earlier expansions.<sup>9</sup>

Taking into consideration that Hungary's lag behind the region's other countries is not significant in terms of per capita income, the tendencies presented here do not indicate

**Figure 2**  
Difference between the real growth rates of gross fixed capital formation and GDP



Notes: in a descending order of the average difference over the whole period. EU-15: the EU member states' average before EU enlargement in 2004.

Sources: Eurostat and MNB calculations.

that a serious investment problem has existed for a long time. However, what needs to be emphasized is that these trend put Hungary somewhere in the middle group among the region's countries and point in an unfavourable direction, especially according to the 2006 data.

**Difficulties in analysing investment data**

The academic economic literature and empirical observations suggest that the distribution of company-level investment is strongly concentrated over time.<sup>10</sup> This concentration is stronger than in the case of other corporate-level variables (e.g. corporate value added) with macro-economic significance. The analysis performed on Hungarian

data also supports this proposition: in the period reviewed (1994-2004), the average company's largest value added exceeded the company's average value added by 60%, while the largest investment is more than two and a half times (260 per cent) higher than the investment of an average year.<sup>11,12</sup> The cross-sectional distribution of companies is also

<sup>8</sup> This is mainly due to the fact that the accounting of some large investments (e.g. infrastructure developments, PPP transactions etc.) is not clear, because it is sometimes ambiguous whether they belong to the state or to the corporate sector.

<sup>9</sup> The question marks regarding Hungary's export performance are presented in Box 2-1. of the MNB's "Report on Inflation" (May 2007), and they also underpin this claim. Furthermore, the 2006 manufacturing investment and production data since the middle of 2006 moved in an unfavourable direction compared to the dynamic growth seen all over Europe.

<sup>10</sup> The theoretical explanation is mainly linked to the costs of the implementation of new investments, to the difficulties of disposing of used capital and to the uncertainties regarding future profits. As a result, the reaction of capital to economic shocks is non-linear and consequently, investments are concentrated in time around the occurrence of a major shock. The conclusion of studies on American data (Carruth et al., 1998, Doms-Dunne, 1998) gives empirical evidence that companies strongly concentrate their investments over time.

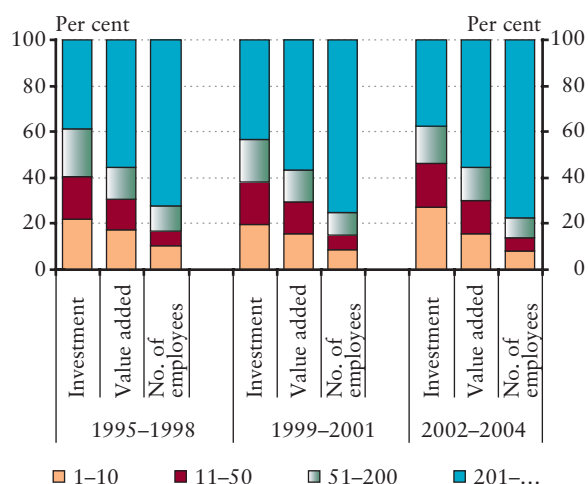
<sup>11</sup> The analysis used companies' tax return data. Corporate level value added and investment data are approximated following the methodology described in the papers of Kátay-Wolf (2004, 2007).

<sup>12</sup> The distribution of these company-specific ratios is strongly asymmetric (sloped to the right), therefore, we consider the average company to be the one with the median maximum/average investment or value added rate. The company-specific maximum/average ratios are calculated according to the following formula:

$$I = I_{max} / I_{average}$$

where *i* is the individual company,  $I_{max}$  is the value of maximum investment during the period of 1994-2004,  $I_{average}$  is the average investment value for the period. We compared the median value of the distribution of these *I*-s with the median of the distribution of analogously defined company-specific value added ratios.

**Figure 3**  
**Distribution of investment, value added and number of employees among companies**



\*Company-level data are summed according to the rating intervals (10 largest, 11-50th place, etc.), then these sums are divided by the whole sample aggregates.

Source: Annual tax returns of companies with double-entry bookkeeping (tax authority data).

more concentrated in the case of investments: on average for 2002-2004, the 10 largest investors accounted for nearly one-quarter of all investments, and the 50 largest accounted for nearly half of investments. These proportions are lower in the case of value added and number of employees, and this concentration difference has increased since 1994.<sup>13</sup>

Consequently, the analysis and forecasting of both micro-level and macro-level investment becomes more complicated, since this strong concentration may cause a higher probability that developments are less synchronised among companies, and the individual effects compared to the general economic trends have a stronger influence on the aggregate numbers than in the case of other indices with more even distribution in terms of time and cross-section.<sup>14</sup>

Partly related to this issue is the fact that the volatility and seasonality of aggregate (branch-level, economy-wide) investments are very strong compared to other macro variables (Benczúr-Rátvai, 2005), and this aggravates the problems related to the analysis and forecasting of short-term processes. Hungary has a special feature in terms of seasonality: among the OECD countries, only in Poland does the last quarter's data represent a higher (nearly 40%) proportion of the whole year's data than in Hungary.

Data availability is also a serious problem. The separation of aggregate investment into economically relevant groups (e.g. business investment, government-related investment, household investment) can only be performed with very rough approximations. The fundamental question from an aspect of the economy is whether the investment is of a business nature and thus reflects the future expectations of private companies, or the investment is initiated by the government. This, however, cannot be pinpointed unambiguously from the quarterly time series, because neither the legal corporate form (whether the party investing is an enterprise or not) nor the branch data (agriculture, manufacturing, etc.) reflect this aspect accurately. The reason why the legal form may not be accurate is that there are several state-supported companies which often make their investment decisions without considering market prospects, even though they are legally qualified as enterprises (e.g. BKV, MÁV, MVM, etc.). The problem with the branch-based breakdown is that the individual branches, even in a relatively detailed breakdown, include a mix of business-like enterprise companies and companies with government-related investments.<sup>15</sup> Due to the strong concentration and the sectoral breakdowns that can only be monitored by means of approximations, especially in the case of quarterly data publications, the short-term developments must be evaluated with caution, taking into account several breakdowns (e.g. branch-based, legal form based, types of assets) simultaneously.

Finally, it is important to note that investment data are revised relatively often and to a great extent. This is most probably not a Hungary-specific feature: for instance, the Bank of England also notes that investments are subject to the most revisions among the GDP items in the United Kingdom (Castle-Ellis, 2002).

<sup>13</sup> Obviously, the members of the largest companies' group change over time. According to our preliminary calculations, these changes become visible mostly in the investments.

<sup>14</sup> A good example for this is the investment data for Q1 2007, showing an unprecedented, 53% increase in the volume of manufacturing investment. According to press news, a multinational firm engaged in rubber manufacturing is implementing a roughly HUF 100 billion (EUR 400 million) investment in Hungary. In order to filter out the impact of this huge investment, we estimated the manufacturing industry's volume increase in investments without rubber manufacturing activity (NACE code 25). Without this sub-industry, the result is a significantly lower 15-20% volume increase, which is approximately the same magnitude as was experienced in the past economic booms of Hungary's export markets.

<sup>15</sup> The *Transport, storage and communication* (letter I in NACE) branch is a good example for this, because it includes motorway building, railway track renovations and investments of the Magyar Posta (Hungarian Postal Service), besides the investments of large business investors, e.g. that of Magyar Telekom.

## EVALUATION OF THE ACTUAL DEVELOPMENTS

The robustness of the decline in investments in 2006 is demonstrated by the fact that the volume of both machinery-type and construction-type investment showed a decline in the last two quarters as well as in the annual figures of 2006. According to sectoral estimates, investment by branches associated with the corporate and household sectors has also decreased. Some growth was experienced in investments related to the government caused by motorway construction, but even this slowed down after the high growth rates of 2005.<sup>16</sup> In the following, we review the main reasons for the weak investment intentions, sector by sector.

On average, corporate investment accounts for 55-60% of total investment. Within this category, the investment climate is clearly unfavourable for companies producing goods or providing services for the domestic market. The reason for this is that even though Hungary's highly open economy is heavily influenced by the present favourable external upturn, the ongoing fiscal adjustment package will still cause a slowdown in domestic activity over the next year or two. The expected deceleration of domestic demand will have an unambiguously negative impact on companies involved in the non-tradable sector, beyond the impact of a more general, unfavourable business environment also affecting export-oriented industries, as described later.

Household capital formation accounts for 20-25% of total investment, and is mostly related to real estate. It has also moved in an unfavourable direction. This development was in line with the downturn experienced in the real estate market over the last two years. Due to the expected reduction of households' disposable income and also to the structural problems in the real estate market (slow adjustment of prices and quality), no significant change is expected over a one-to-two year horizon.

The third large sector is the government: it implements approximately 15-20% of investments in the economy. Investments related to the government represent the most variable items, and the uncertainties related to the accounting of such investments (e.g. PPP transactions, quasi-fiscal

institutions, rating of public service providers) also make it difficult to analyse and precisely separate them from companies operating under market conditions (see Box). All that can be stated with high certainty is that the pace of motorway building slowed in 2006 compared to the earlier high level, although it still had a positive impact on the total investment figures. Looking ahead, there is a significant level of uncertainty in this respect as well, because it is unknown to what extent the infrastructure investments, partly financed by EU funds, (metro line construction in Budapest, railway improvements, road building, etc.) will replace already planned investments, and/or to what extent they will be accounted in the corporate or the government sector.

All of these developments thus can be directly or indirectly explained by the government's restriction on spending and by the weakening domestic demand, both of which were induced by the fiscal adjustment. As these factors are expected to be temporary, the decline in investment is probably also temporary in the sectors discussed so far. The income of the manufacturing industry, which is one of Hungary's most important industries of terms of exports and international competitiveness, is primarily determined by the increasingly robust external demand. Accordingly, in the past, the strongest driver for this industry's investment activity was European economic activity. However, the relationship appears to be weakening, as this industry has been gradually showing slower investment growth rates since 2004, whilst external demand has gathered pace. The favourable figure for the first quarter of 2007, in itself, does not rule out the possibility that Hungary may be facing a longer-term investment problem. In order to explore this issue, we must review the major factors influencing decisions on corporate investment, and also look at how these factors can explain the data over the last few years.

Thinking in a simplified corporate financing framework using the discounted present value approach, investment is a function of profits (cash-flow elements) and the cost of capital (discount rate). The more favourable the profit prospects, and the lower the costs of capital, the more projects become worthwhile to implement, i.e. the more sense it makes to invest.<sup>17</sup> Furthermore, the modern theoretical and empirical economic literature puts an

<sup>16</sup> The decline can be widely observed in other types of breakdowns as well: there was a reduction in the investment volume of nearly every legal form of corporate enterprise (limited companies, joint stock companies, etc.). Furthermore, according to the breakdown by branches, a positive change in volume was experienced only in the *Hotels and restaurants and Financial intermediation branches* and in the activities linked to the state (e.g. the *Transport, storage and communication branch*, partially containing motorway building). Even though in Box we note that the investment time series are revised relatively often and to a great extent, looking at their past magnitude and the widely observed unfavourable tendencies of 2006, we can conclude that future possible revisions will probably not change the current qualitative picture.

<sup>17</sup> It is also worthwhile to mention that the majority of empirical analyses found that the income and the expected income have a relatively good explanatory power, whilst the effects of the cost of capital are difficult to measure, especially at a macro-economic level. Based on Hungarian company-level data, Kátay-Wolf (2004) showed a robust and significant relationship between company-level cost of capital and company-level investment, while the results of Reiff (2006) support significant, albeit moderate, macro-effects of profitability shocks.



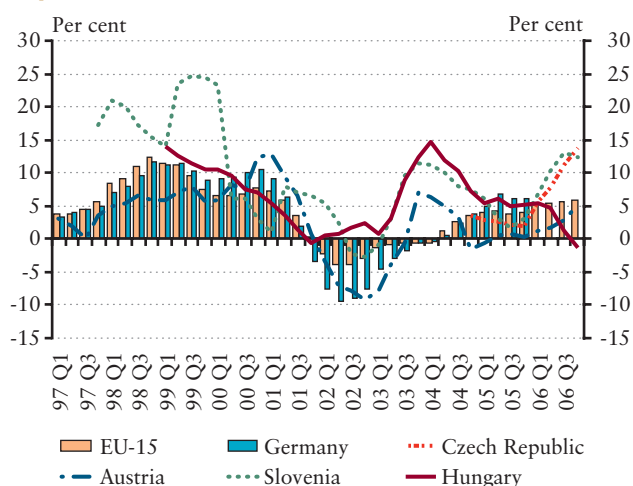
increasingly strong emphasis on the crucial role of uncertainty in determining investments. This is the so-called real-option theory of investments (Carruth et al., 2000; Carlsson, 2004; and Bond-Lombardi, 2004). The main driver of the effect is that the adjustment of capital has significant “sunk costs”. It means that if economic developments turn unfavourable and if part of the capital becomes redundant, then its disposal can only be done with significant losses. For this very reason, in an uncertain economic or regulatory environment (frequent, unexpected changes in taxes, etc.), it is more worthwhile to wait and postpone investments.

Profits, which are the first and the empirically the most important factor, deserve a breakdown to further elements. These are the demand factors (revenues), productivity, and the costs of production and of investment, including the implicit costs incurred in running the business (e.g. administration costs). The demand of export-oriented industries is directly affected by external economic activity, while – due to Hungary’s high degree of openness – it also has an effect on non-tradable companies’ demand, although this effect is indirect and operates with a lag.

Therefore, from the aspect of revenues, the actual demand and future expectations of Hungary’s export markets<sup>18</sup> play a key role in determining the export sector’s investment activity, just as the data supports. In light of this, the strong uncertainty which surrounded the sustainability of external economic activity could well explain the slowdown in investment in the manufacturing sector in 2004-2005 (Figure 6). This general, economic environment-driven uncertainty clearly appeared in Hungary’s most important export market, Germany. The IFO indices reflecting company managers’ expectations in Germany were at unusually high, historic levels, and it was hard to reconcile with the actual data on German industrial production dynamics. Furthermore, German industrial orders, compared to earlier periods of economic recovery, increased, in an unusual, volatile way with repeated hiccups (Figure 5). A sort of “wait-and-see” corporate behaviour due to these uncertainties was seen in other countries in the region as well, and this is best captured by the changes in machinery-type investment (Figure 4).<sup>19</sup> The uncertainty associated with future demand and the ongoing strong growth in actual demand motivated companies to pursue more intensive utilisation of current capacities, rather than to initiate more costly investments.

**Figure 4**

**Annual average volume indices of machinery-type investments in the region and in Hungary’s major export markets**

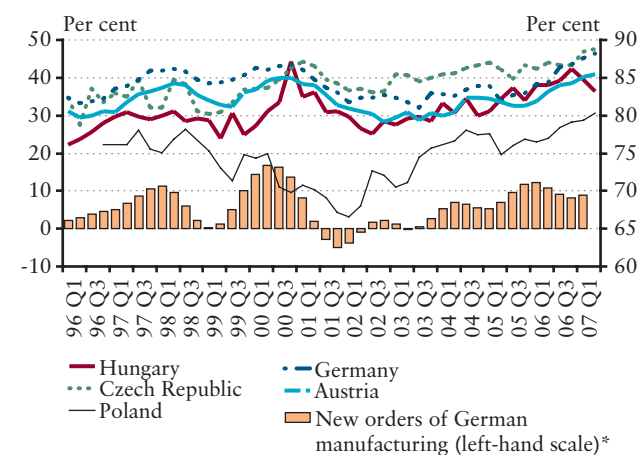


Data are unavailable for Germany in 2006.

Sources: Eurostat, KSH and MNB calculation.

**Figure 5**

**Capacity utilisation in manufacturing in the region and in Hungary’s major exports markets, and new orders in German manufacturing**



\* Year-on-year volume indices.

Sources: Eurostat and European Commission (Economic Sentiment Indicators).

This tendency was observed both in Hungary and in the countries in the region (Figure 5), as reflected by the historically high levels of the capacity utilisation indices.<sup>20</sup>

<sup>18</sup> Hungary’s most important export markets are the developed EU member states, especially Germany.

<sup>19</sup> Machinery-type investment characterise primarily industrial companies, and the majority of the industrial companies’ investments are machinery-type investments. Hence, the analysis of movements of machinery-type investments may be the right approach to the study industrial investments; that offer a wider range of available international comparative data.

<sup>20</sup> Although the last two Hungarian data points indicate a decrease, the capacity utilisation index of the Enterprise Analytical Institute (GVI) of the Hungarian Chamber of Industry and Commerce shows a continuing increase reaching a historical record in Q1 2007. Hence all what we could robustly state on the level of capacity utilisation is that it reached historical heights, but its actual tendency is not unambiguous so far.

The uncertainty was finally replaced by sustained, stronger-than-expected external demand (German GDP growth in 2006 was 2.8% compared to expectations of around 1.2-1.6% in 2005), accompanied by a continuous improvement in future growth prospects.<sup>21</sup> Consequently, in the neighbouring countries, relatively strong investment activity started in 2005. In Hungary, just the opposite happened: investment activity tapered off (Figure 4), and this divergent path is apparent in total investment as well as machinery-type investment, which is primarily implemented by industrial companies.

Thus, even before the announcement of the fiscal adjustment, divergence from the regional trend had already started, and, as a result, the Hungarian economy experienced low investment growth rates such as were last seen when the European economy bottomed out in 2001-2002. Back then, however, due to the American stock market bubble burst, the deceleration in European growth was generally expected, and therefore it might have seemed more wise to meet the still strong European demand via higher capacity utilisation rather than by implementing new investments.<sup>22</sup> This explanation is further supported by the fact that similar developments were seen in other countries in the region as well as in Hungary's export markets (Figures 4 and 5). The economic downturn came relatively fast around 2001, and it was accompanied by a change in capacity utilisation.

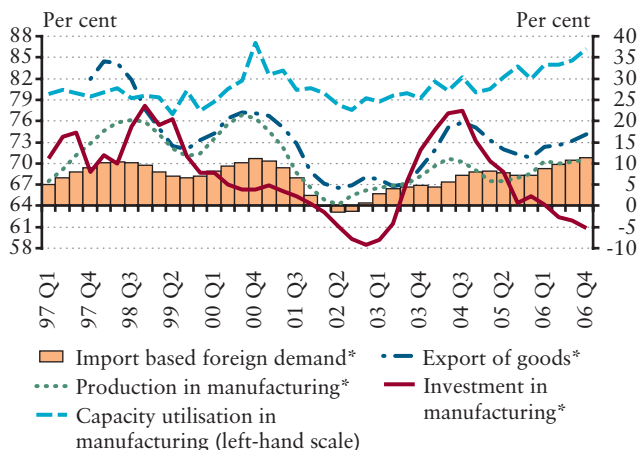
Around the end of 2005 and the beginning of 2006, it became increasingly clear that growth prospects were favourable in Europe, and they were indeed justified by the data. However, in Hungary, investment missed the upturn, therefore the companies can only satisfy the external demand by means of historically high level of capacity utilisation. This explains the seemingly contradicting numbers of low investment, strong exports and industrial production growth in 2006 (see Figure 6).

### DOES HUNGARY FACE A LONG-TERM OR TRANSITORY INVESTMENT PROBLEM?

The depressed investment intentions of Hungarian companies may thus also be associated with country-specific factors that cannot be linked exclusively to the increase of financial burdens resulting from the austerity measures, as the unfavourable trend was also observed before the announcement of those measures. Consequently, we can

**Figure 6**

#### Investment, production and capacity utilisation in manufacturing, and developments in external demand and exports of goods



\* Annual average volume indices.

Sources: Hungarian Central Statistical Office, Economic Sentiment Indicators (European Commission) NIGEM database, MNB calculations.

elaborate on two hypotheses on the future evolution of investment: (1) a rapid, large-scale correction, in which case the investment problem only arose due to temporary uncertainties and merely prompted companies to “wait and see”; or (2) a mild, slow correction that only makes up for the missed investments of the past and may imply, even after the disappearance of the temporary problems, lower investment growth over the long term as well. If we wish to identify the long-term or transitional nature of Hungary's divergence from the region, we must investigate the nature of the country-specific factors. As already mentioned, companies' profits are also influenced by other factors than demand; productivity, competitiveness, the costs of production and investments and the uncertainties associated with them (i.e. costs of capital). Thus, we must seek an explanation among these factors.<sup>23</sup>

In addition to the technologies and efficient management techniques applied by companies, the quality of the domestic infrastructure, the perception of the operation of authorities and the quality of human capital all determine the level of current and expected corporate productivity achievable in the domestic business environment. In its 2006 convergence analysis, the MNB highlighted the fact that productivity

<sup>21</sup> The major international forecasting institutes all project higher growth in Europe for the years to come than in their earlier projections.

<sup>22</sup> The MNB's inflation report of December 2000 elaborates this hypothesis (page 41).

<sup>23</sup> Changes in share prices of the companies provide us with important information on the expectations of the companies' profit generating ability. But, as a relatively low number of companies of the Hungarian corporate sector are listed on the stock exchange, changes in the stock market indices do not give a true representation of general profit expectations.

**Table 1****Growth and competitiveness indices of the World Economic Forum in the region's countries**

	Hungary	Czech Republic	Slovakia	Slovenia	Poland	Estonia	Latvia	Lithuania
2001	4.87	4.41	4.36	4.70	4.30	4.87	4.19	4.27
2006	4.43	4.55	4.52	4.77	3.88	5.08	4.45	4.39

Source: *Global Competitiveness Report, 2001-2002 and 2006-2007, Growth Competitiveness Index (World Economic Forum)*. Higher values indicate more competitive economies according to the index.

growth in manufacturing decelerated significantly and continuously up to 2004 (the analysis covers the period between 1995 and 2004). If this unfavourable tendency has continued and has become incorporated into long-term expectations, this may have also contributed to the unfavourable profit prospects in the Hungarian business environment.

The fact that the country is ranked in a worsening position in competitiveness and business environment rankings of countries is a telling sign regarding productivity developments and, more generally, about the domestic business environment. In the growth and competitiveness evaluation of the World Economic Forum of Davos, Hungary was the country that saw the greatest deterioration in its positions between 2001 and 2006 from among the region's countries (Table 1). Last year, only Poland and Lithuania were ranked behind Hungary. The three groups of the aspects of the index are technology, public institutions and the macro-economic environment, and an absolute or relative worsening of Hungary's position has been noticed in all three of these categories. In another international assessment, in the World Bank's "Doing Business in ..." ranking, which reviews mainly the institutional aspects of business environment of countries, Hungary dropped the most in the region during 2005 and 2006, and only Poland is ranked behind Hungary (Table 2). Hungary's position has worsened in nearly all determining factors, and the country was especially low-ranked in terms of protection of investors, costs of registering real estate property, and costs of establishing new enterprises.<sup>24</sup>

Surveys conducted among certain foreign investors may also provide a plausible explanation for the weak industrial investment activity in Hungary. The results of one of these, conducted by the German Chamber of Commerce and Industry in 2006, should be highlighted, especially bearing in mind the fact that Germany is Hungary's most important trading partner and is the main source of foreign investors at the same time. According to the findings of this survey, Hungary was in the lowest third in the rankings of the new EU member states and candidates in nearly every factor determining investments (e.g. productivity, availability of well-qualified labour force, or payment discipline).

The cost of capital is determined by the costs of production and investments, and the uncertainty (risk premium) associated with these. The change in these factors also had an investment-reducing impact: partly due to the fact that the purchase of investment assets has become more expensive as the construction and machinery prices accelerated starting from the second half of 2005 and lasting up to mid-2006, the background of which was the significant weakening of the exchange rate which can also be seen as a country-specific factor.<sup>25</sup> Furthermore, although there was no significant change in the financing costs of capital (as shown in the interest rates and yields of long-term bank loans and of the bond markets), the uncertainties surrounding the macro-economic and micro-economic expectations of future profit prospects may have increased the perceived risks of Hungarian investments. Hence, it increased the expected yield of investment projects, that is, ultimately, the discount

**Table 2****Rank of the region's countries in World Bank's "Doing Business in ..." business environment ranking**

	Hungary	Czech Republic	Slovakia	Slovenia	Poland	Estonia	Latvia	Lithuania
2005	60	50	34	56	74	17	31	15
2006	66	52	36	61	75	17	24	16

Source: *Doing Business in 2005, 2006 (World Bank)*.

<sup>24</sup> According to another widely recognised and often cited rating source, the Competitiveness Yearbook of the Swiss IMD institute, Hungary's relative position also deteriorated in the region between 2005 and 2006. However, in 2007, presumably due to the start of the government's fiscal measures, only Hungary could hold our its position in the region, whilst other countries slipped back.

<sup>25</sup> There was no general, significant price increase of the investment assets in the region and the developed European countries, unlike in Hungary.



rate of the projects.<sup>26</sup> The frequent changes in the business environment generate significant uncertainty in companies' planning and do not encourage long-term investments. It must also be taken into account that Hungary's tax system has undergone several changes over the last few years, and has not seen significant simplification. Moreover, the probability of further rises in companies' financial burdens was boosted by the increasingly unfavourable fiscal situation, and these factors have also had a negative impact on domestic investment plans.

All of these factors (signs of slowing down of productivity, significant macro-economic and micro-uncertainty, unfavourable business environment) can explain the weak investment activity which was already seen before the announcement of the fiscal adjustment, and they also increase the risk of Hungary having become a less attractive investment target than it used to be. This argument is supported by the preliminary figures of the rate of re-invested incomes to profits, which dropped significantly in 2006. It can be viewed as another sign of unfavourable perceptions among foreign investors on the Hungarian business environment.<sup>27</sup>

These factors may have a long-term negative impact on the investment climate if the government's conduct does not improve (e.g. through a more predictable legal and taxation environment), or in the absence of some positive measures (simpler, more efficient operation of authorities, better public services, etc.). The picture was improved somewhat by the announcement of the adjustment package and the start of its implementation, as it corrected the unsustainable fiscal developments and hence reduced part of the uncertainties. However, certain elements of the measures (solidarity tax, increase in statutory supplements) increased the costs of businesses directly, and not only were labour taxes raised, but also those associated explicitly with corporate profits. Taking into consideration that the companies probably understood the necessity of fiscal adjustments, the impact of these increased costs could have been partly considered in the investment decisions and consequently might have appeared in the figures prior to the announcement of the measures. The extent of this depends on whether the companies expected that they would have to bear this proportion of the burden of the adjustments. Taking into account the fact that the successful, growth-promoting fiscal adjustments of other countries in the past did not follow the pattern of the current Hungarian adjustment

(MNB, 2006), it is quite conceivable that companies were negatively surprised by the growth in their burdens. Thus, the overall effect of the adjustment measures may even cause a further worsening of the perceptions of Hungary's competitiveness and the expectations of the achievable productivity in its business environment.<sup>28</sup>

Another explanation is based on less severe, non-structural reasons that lead to milder consequences than the long-term deterioration of Hungarian competitiveness. It emphasizes the temporary nature of different sorts of disadvantageous investment factors. According to this argument, the temporary, negative investment factors merely caused companies to wait and postpone investments in spite of the strong external economic activity. Although one negative factor, the uncertainty regarding external economic activity, more or less diminished towards the end of 2005, and the prospects have become significantly more advantageous, the role of other negative, domestic factors became increasingly strong in maintaining a bad investment climate. Such negative domestic factors were the price increase of investment assets, the run-up to the general election and also the deterioration of the fiscal situation; therefore, the companies stuck with their wait-and-see approach, and postponed their investments. It is likely that they perceived the unsustainability of the fiscal situation and saw that it was in need of adjustments, but they could not foresee its means, the expected changes in their burdens and that was still a source of uncertainty. The adjustment was finally implemented in such a manner that led to an increase in companies' burdens and affected them unfavourably. In summary, prior to the announcement of the adjustment package, the uncertainty and the ensuing "wait-and-see" behaviour in the corporate sector were the main factors restraining investment. This explanation thus supports the argument of the transitory nature of the poor investment performance that may turn for the better with the solution of the fiscal problems and with more stable macro-economic prospects.

It is hard to pin down the exact reasons and hence the expected duration of the investment problem on the basis of currently available data, because the increase in corporate burdens as well as other, still prevailing competitiveness problems may all have hindered investment activity since the announcement of the fiscal adjustment. The investment data of the manufacturing industry during the first quarter of 2007 is not unambiguous either: if one outstanding item is

<sup>26</sup> General economic uncertainty is well demonstrated in Hungary's 5-year EUR forward yield-differential which can be seen as an index of country-related risk premium. The movement of this index has been detached from the same index of the Visegrád countries since mid-2004, which can be viewed as a kind of "lagging behind the region" effect, similarly to the case of investment."

<sup>27</sup> One might argue that the still dynamic foreign direct investment (FDI) data of 2006 do not support this hypothesis, but one should not forget that FDI is not the only form of funding of investments and therefore the two time-series did not show a close relationship.

<sup>28</sup> MNB's 2006 convergence analysis also writes about the impact of the 4% so-called 'solidarity tax' on investment and capital expansion (Sub-chapter 4.2).

filtered out, the growth rate is around a level that can only be considered as making up for the missed investments from the past. Furthermore, external economic activity and the associated expectations became more and more favourable over the last year, the relative price of investment assets started to reduce, and the implementation of the adjustment package began. In spite of all of these developments, the export sector's investments did not improve for several quarters, and this highlights the role of factors related to competitiveness problems. As long as the corporate sector does not perceive substantial improvements in the domestic business environment and in its predictability, its expectations of future prospects of productivity and costs will not grow more favourable either, and hence it will not expand its capacity significantly.<sup>29</sup>

## CONCLUSIONS

Overall, the investment data project unfavourable developments both from the aspect of future aggregate demand and future production possibilities. It cannot yet be said whether this is a transitory problem which will be automatically resolved after fiscal equilibrium is restored, or if deeper, structural causes are in the background, indicating a deterioration in Hungarian competitiveness.

What can be concluded safely is that the missed investments make it more difficult for Hungary to take full part in the present European recovery. This is a major problem since the external boom and the country's strong export performance should play a key role in counteracting the weak domestic demand caused by the fiscal adjustment. Furthermore, private economic actors' expectations about future prospects and the uncertainties around them are the most defining factors of investments. Therefore, a predictable regulatory and tax environment and a stable macroeconomic environment are of fundamental importance for the upturn of investments and fast economic growth and convergence.

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<sup>29</sup> GKI's (Economic Research Institute) business environment index explicitly captures corporations perceived uncertainty regarding the business environment as well as their view on the unreliability of the state's conduct, and this index was low for several consecutive quarters. It is an encouraging sign, however, that the latest, Q1 2007 data show an improvement.