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Does FDI follow comparative advantage?*

BY JULIA WÖRZ

Introduction

While the amount of research devoted to studying foreign direct investment (FDI) on a macro level is overwhelming, far less effort has been devoted to industrial studies of FDI. A closer inspection of industrial structures and competitiveness at a more disaggregated level may yield interesting new insights. One reason to study the relationship between FDI and competitiveness at the industry level is the following: empirical research that has looked at the impact of inward FDI on the host country's subsequent development mostly points towards a positive influence on growth and development and argues that knowledge and

technology spillovers as well as other positive externalities (such as efficiency gains in management and production processes) are responsible for this outcome (see, for example, Borensztein et al., 1998). However, the positive impact of FDI is only found when the host country has a minimum threshold stock of human capital. Thus, it seems straightforward to assume that the positive impact of FDI on the host economy depends on which industries absorb the foreign capital (i.e. on the human capital intensity of the receiving industry).

In the following we analyse industrial specialization patterns of CEECs with respect to output, trade and FDI for 14 industries (based on NACE, Rev. 1, 2-digit code) over the past decade to give a first idea of the relationship between industry-level competitiveness and FDI. Then we compare the results with East Asian data. Finally, we draw some conclusions with respect to the growth prospects for Eastern Europe based on the evidence presented.

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Comparative advantage and the eclectic theory of FDI

Two concepts from the theory on international trade and multinationals taken together will draw a clear picture of the relationship between competitiveness at the industry level and the industrial allocation of FDI. First of all, the principle of comparative advantage asserts that countries will specialize in producing and exporting those goods that are intensive in the use of the country's abundant resources, while goods that are produced using a country's scarce resources are imported. If this principle can be applied to direct investment flows, then we would expect a country to attract FDI in those activities that are intensive in the use of the country's abundant resources and factors, and to outsource to foreign locations those activities that require the country's scarce resources. Although classical trade theory has often been rejected for the fact that it is not able to explain intra-industry trade or trade between similarly endowed partners – which in today's world accounts for the lion's share of all trade¹ – there is ample evidence that the activities of multinational firms are related to the resource abundance in their home countries and thus that there are links between the comparative advantage of countries and the international activities of firms (Nachum et al., 2000).

The principle of comparative advantage in connection with the eclectic theory of FDI (Dunning, 1981)² predicts the following outcomes (following Nachum et al., 2000): If a firm chooses to invest in a foreign country out of resource- or export-seeking motives, investment will occur in those sectors where the host country has a comparative advantage. Likewise, efficiency-seeking investment is more likely to flow into countries with an appropriate comparative advantage for the firm's

needs, even if other considerations (scale economies, internalization and integration advantages) play a role as well. If a firm invests out of market-seeking or strategic motives, investment is more strongly driven by other factors (such as demand conditions in the host country, strategic benefits for the overall competitive position in international markets, etc.), however inward FDI is still expected to be roughly in accordance with the host country's comparative advantages. Thus, a positive correlation between the industrial structure of inward FDI and the host country's comparative advantages indicates the importance of *location-bound advantages* for FDI. Comparative advantages of the host country and inward FDI are expected to be unrelated or may show a negative correlation if *ownership advantages* of the multinational are sufficiently large compared to locational considerations and further in the presence of government interventions (both policies that attract FDI and policies that prevent FDI). Thus, the lack of a positive correlation between comparative advantage and the pattern of inward FDI suggests a dominant role for ownership and internalization advantages.

We will measure comparative advantage by looking at a country's export performance in relation to the country group as a whole, thus using the concept of revealed comparative advantage developed by Balassa (1965). Before doing so, a rough description of the industrial structure in the countries of interest is in order here.

Industry structure in Central Eastern Europe

Figures 1-5 (see end of article) depict industrial structures for the Czech Republic, Hungary, Poland, Slovakia and Slovenia in three different years (1993, 1998, and 2002) and for four different indicators (production, exports, imports, and FDI).

Looking at the figures in a chronological way, starting with the year 1993, we first observe that output and export patterns are highly positively correlated, apart from a few obvious exceptions. The food industry, which often has to adapt to country-specific preferences and whose products

¹ The same applies to direct investment flows: Since World War II, by far the largest fraction of global FDI occurs between highly developed industrial countries (see UNCTAD, 2003).

² According to the eclectic theory of FDI a mix of three factors is at work that explains the presence of multinational firms: firm-specific ownership advantages, country-specific location-bound advantages, and internalization advantages.

are often characterized by a high risk of deterioration, and subject to trade barriers, usually receives a much greater share in terms of output as compared to its export share. Slovakia, Poland and Hungary also exhibit a high share of the coke industry in their output patterns that is not reflected in equally high export shares. As a second general observation, output as well as trade patterns are highly skewed for all countries with the exception of Slovenia. Thirdly, export and import patterns match closely, which indicates a relatively high degree of intra-industry trade (IIT) for these countries in general. There are a few exceptions, which shall be listed here. The machinery and electrical equipment industries received a high share of imports in all countries except in Slovenia, not matched by high export shares. In Poland, also the rubber industries had high import shares unmatched by exports.

1998 is the first year for which FDI inward stocks are available for these countries at the industrial level. The initial distribution of FDI is highly uneven and differs substantially among countries. Very often, FDI went into resource-based and labour-intensive industries such as minerals (Czech Republic), metals (Slovak Republic), food and beverages (all but Slovenia), or paper (Slovenia). Hungary received a large share in the electrical equipment industry, following previously high import shares in this industry. A similar development took place in the Czech Republic. In Slovenia, high relative imports in the rubber industry were followed by a high FDI share. The manufacture of transport equipment featured prominently as a recipient of early FDI in all five countries alike. It is interesting to note that FDI did not flow into the main (export) industries as the concept of comparative advantage would suggest.³ Instead, FDI went into a few selected industries only, which differed substantially among the individual countries. Also, the structure of FDI did in general not correspond to the structure of exports.

³ It has to be mentioned here that output and export shares of a country as such do not reflect comparative advantage, as these shares have to be put in relation to those of a country's trading partner. This will be done later on.

Hungary is an exception to this: in 1998, FDI, export, import and output patterns matched closely and showed a great dependence on just three industries: electronics, transport equipment and food and beverages. Slovenia also showed a relatively high correspondence between FDI, trade and output structures.

Moving on to 2002 – the last year for which we currently have data for all four variables – reveals that those industries that experienced relatively high FDI inflows usually gained export shares as compared to 1998. The structure of FDI has changed as well. In the Czech Republic it has become less resource-based and somewhat less concentrated. FDI is still primarily absorbed by the transport equipment industry (17%), electronics (14%), minerals (13%) and food (12%). Also Poland is characterized by a reduced concentration of FDI stocks, without a qualitative change in the distribution across industries. The food industry receives about 22% of total FDI (compared to 28% in 1998), transport equipment 14% (against 18%) and other manufactures 20% (rising from 18%). Hungary shows no change in concentration, however, with 24% (up from 14% in 1998), the transport equipment industry attracts the highest share of FDI in 2002 as compared to the electronics industry (20% down from previously 23%). Still, exports of electronics increased from 32% in 1998 to 38% of total manufacturing exports in 2002. Slovenia and Slovakia on the other hand show an increased concentration in FDI, while output and trade patterns remained extremely stable in both cases. Slovenia now has a very high share of FDI in the rubber industry (32% as against 15% in 1998), while Slovakia attracts the highest share of FDI in the metal industry (40% as compared to 23% before).

Thus, while not following export or output shares, FDI often resulted in high shares in both. In contrast, there were a few cases where FDI followed high import shares. In the Czech Republic and in Hungary, FDI concentrated in the electronics industry, which previously had received a pronouncedly high share of imports. Slovenia

received relatively much FDI in the rubber industry after previously high imports. This underlines a common function of FDI and imports: technology and knowledge can be embodied in traded goods or transferred more directly via FDI. The sequencing of arms-length trade first and FDI second seems to be natural, given higher fixed costs of direct investment as compared to trade and given the risk of investing in new markets. Imports may reduce this risk by building up some specific knowledge in the respective industry when they are used as inputs in indigenous production rather than consumer goods. As one can see from the figures, in all three cases, output shares in the respective industry were also quite high and increased between 1993 and 1998.

Summing up the evolution of FDI patterns over the observation period, some typical developments can be observed. In all five countries, FDI tended to move into resource-intensive industries first. In the Czech Republic, Hungary and Poland, it moved rapidly towards more human capital-intensive industries while also spreading more equally across industries. The industries emerging as the main recipients of FDI in 2002 were first of all the transport equipment industry but also the electrical equipment industry. The latter played a dominant role in Hungarian manufacturing in every respect. However, the Czech Republic has also increased its share of FDI in the electronics industry recently, resulting in an increased export share as well. Slovenia and Slovakia on the other hand showed a narrowing of their FDI pattern towards clearly resource-based industries.

Revealed comparative advantages and FDI

A country's comparative advantage is defined as its endowment pattern with respect to its trading partners. The notion of 'revealed comparative advantage' refers to export specialization patterns, which are believed to reveal the underlying comparative advantages of a country in terms of its endowments (Balassa, 1965). For the following analysis, a specialization index, weighted by the importance of the respective industry, is calculated

for each of the variables above: output, exports (= revealed comparative advantage) and FDI. The correlation of these specialization indices across industries for each country gives an indication of the main motives behind FDI. Table 1 presents the results for a sample of nine CEECs, while Table 2 shows the results for a sample of eight East Asian countries. In line with our earlier observations, a high correlation between output and export specialization is found in most cases.

For the sample of CEECs, export and output specialization is not significantly correlated in only four out of the 26 cases (Poland and Latvia in 1993, Slovakia and Croatia in 1998). By 2002, output and trade specialization patterns match for all countries to a great extent. This correlation is less strong in some East Asian countries, especially in the Philippines, Thailand, and in Taiwan. Here, export patterns differ more strongly from output patterns, indicating that the export sector is more detached from the rest of the economy than in Eastern Europe. These differences may also reflect differences in trade barriers within the two country groups, leading to different levels of distortion on the export side. The CEFTA agreement removed tariff barriers for 90% of all industrial goods between most CEECs already in 1997, while the earlier established ASEAN Free Trade Area (AFTA) from 1992 has foreseen a reduction of trade tariffs to a maximum of 5% for included products by 2008, with the option of removing them altogether. This tariff reduction is still underway in many ASEAN member states. Consequently there are still tariff barriers to trade inside East Asia in the industrial sector. The relatively higher correlation between output and trade patterns in Eastern Europe indicates not only a relatively homogenous market, it also suggest that internal trade barriers are indeed lower in Eastern Europe today than in East Asia.

Turning to the correlation between export and FDI specialization gives a similar impression. Again, these variables are more often correlated in the Eastern European sample as opposed to the group

Table 1

Correlation coefficients for CEECs

country	Correlation between export and output specialization			Correlation between export and FDI specialization	
	1993	1998	2002	1998	2002
Czech Republic	0.667 ***	0.865 ***	0.785 ***	0.140	0.527
Hungary	0.607 **	0.887 ***	0.763 ***	0.564 **	0.640 **
Poland	0.355	0.798 ***	0.537 **	0.660 **	0.736 ***
Slovakia	0.708 ***	0.335	0.883 ***	-0.002	0.720 ***
Slovenia	0.781 ***	0.897 ***	0.916 ***	0.613 **	0.500 *
Estonia	0.671 **	0.785 **	0.709 ***	0.321	0.564 **
Latvia	0.161	0.885 ***	0.827 ***	0.728 ***	0.807 ***
Lithuania	0.532 **	0.854 ***	0.724 *** ¹⁾	0.749 ***	0.758 ***
Croatia	-	0.389	0.665 *** ²⁾	0.130	0.219

Notes: 1) 2001. - 2) 2000. - *, **, *** indicate significance at the 10%-, 5%-, and 1%-level respectively.

Source: wiiw, UN COMTRADE; own calculations.

Table 2

Correlation coefficients for Asian countries

country	Correlation between export and output specialization			Correlation between export and FDI specialization		
	1995	1998	2000	1995	1998	2001
Hong Kong	0.922 ***	0.826 ***	0.818 ***	0.676 **	0.603 **	-
Indonesia	0.723 ***	0.503 *	0.489 *	0.289	0.491 *	0.264
Korea	0.745 ***	0.706 ***	0.691 ***	0.097	-	-
Malaysia	0.936 ***	0.915 ***	-	0.281	0.512 *	0.509 *
Philippines	0.320 ¹⁾	0.375	-	0.011	0.170	0.278
Singapore	0.841 ***	0.728 ***	0.724 ***	0.665 ***	0.856 ***	0.547 **
Thailand	0.196	0.693 ***	0.096	0.161	-0.027	0.117
Taiwan	0.333	-	-	0.345	0.190	0.202

Notes: 1) 1996. - *, **, *** indicate significance at the 10%-, 5%-, and 1%-level respectively.

Source: UNIDO, UN COMTRADE, UNCTAD; own calculations.

of East Asian countries. In 1998, a significant correlation was found (in decreasing order) for Lithuania, Latvia, Poland, Slovenia and Hungary. In these countries, FDI followed comparative advantage. The correlation between FDI and export specialization has generally increased over time, most notably so in Slovakia where the coefficient rose from zero to 72%. In 2002, only Croatia and the Czech Republic did not show a significant correlation between the two variables.

In contrast to this, no such common trend was observed in Asia. Singapore and Hong Kong are the only two countries to show a great concordance

between export and FDI patterns. Malaysia exhibited a positive correlation from 1998 onwards. For the Philippines, Thailand, Korea and Taiwan such a positive correlation was never found. Indonesia exhibited a positive relationship in 1998, however the correlation coefficient again dropped to 26% in 2001.

It may be concluded that the motives for FDI differ greatly between these two groups of countries. While CEECs attracted FDI mainly because they offered locational advantages (for instance, a well educated labour force, lower wages than in the major investing countries, growing domestic

markets, economic stability, good accessibility, etc.), FDI in East Asia was often driven primarily by strong ownership advantages of the investing firms or by government policies.⁴ The four Asian Tigers (Hong Kong, Singapore, Taiwan and Korea) show greatly opposing patterns: while a strong correlation between comparative advantage and FDI specialization was found in two of them (Hong Kong and Singapore), no significant correlation could be observed for the remaining two (Korea and Taiwan). Thus, whether or not FDI is attracted by location-bound advantages, does not seem to be related to the growth impact of FDI, since all four countries are famous for their outstanding growth performance. However, the laggards in the sample, the Philippines, Thailand and also Indonesia, do not show this positive correlation, thus implying that comparative advantages of a location may help in stimulating subsequent growth without being a necessary condition for it.

Conclusion

To sum up, FDI closely follows revealed comparative advantage in Central and Eastern Europe, while the picture is more diverse in East Asia. The positive relationship between FDI and export specialization in Eastern Europe is further accompanied by a homogenous industrial structure between the domestic and the export sector of the economy, resulting in a high correlation between output, export and FDI patterns. In contrast to this, the domestic and the export sectors seem to be more differentiated in East Asia, often leading to a 'dual-economy' structure with a more advanced export sector as opposed to a more backward domestic sector. These differences certainly reflect differences in the underlying motives for FDI. The question whether different investment motives carry over to differences in the growth impact of FDI is left open by the simple analysis carried out here. It is however an interesting question to pursue.

The high correlation between export specialization and FDI suggests that resource-, market- and efficiency-seeking FDI plays a big role in CEECs. In the case of resource-seeking FDI, the fear of entering a development trap is sometimes raised. If, for instance, FDI exploits primarily cheap labour or natural resources without generating a lot of spillovers, future development may be hampered by such a specialization pattern. This may partly be of concern for Slovenia and Slovakia, given the type of specialization pattern that we have seen earlier. It is certainly not the case for Hungary. Poland, despite its high FDI share in the food industry, also shows sufficient FDI in more human capital-intensive industries. The Czech Republic, with its high FDI share in the automobile industry, shows no such correlation, indicating the strong ownership advantage of the main investor (Volkswagen).

As becomes clear from the sample of East Asian countries, the motives for FDI (i.e. location-bound as opposed to firm-bound advantages) as such are not sufficient to predict the future growth impact of FDI. Two out of the four fast growing Asian Tigers show a strong role of location-bound comparative advantages for inward FDI, while the other two show no such relationship. The same distinction is found between the Czech Republic and Hungary. Given the channels through which FDI affects growth, namely by generating technology and knowledge spillovers as well as through learning externalities, the specific industrial pattern of FDI seems to be much more important than a high concordance between current comparative advantage and FDI. In this respect, both countries, the Czech Republic and Hungary, can be expected to do well in the future, while the specialization patterns in Slovakia and Slovenia may raise some concerns in the long run.

⁴ It is not possible to distinguish between the two in our approach.

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NACE Rev. 1 industries quoted in Figures 1 to 5

- DA Food products; beverages and tobacco
- DB Textiles and textile products
- DC Leather and leather products
- DD Wood and wood products
- DF Coke, refined petroleum products & nuclear fuel
- DG Chemicals, chemical products and man-made fibres
- DH Rubber and plastic products
- DJ Basic metals and fabricated metal products
- DK Machinery and equipment n.e.c.
- DL Electrical and optical equipment
- DM Transport equipment
- DE Pulp, paper & paper products, publishing & printing
- DI Other non-metallic mineral products
- DN Manufacturing n.e.c.

Figure 1

Industrial structure of the Czech Republic, 1993-2002

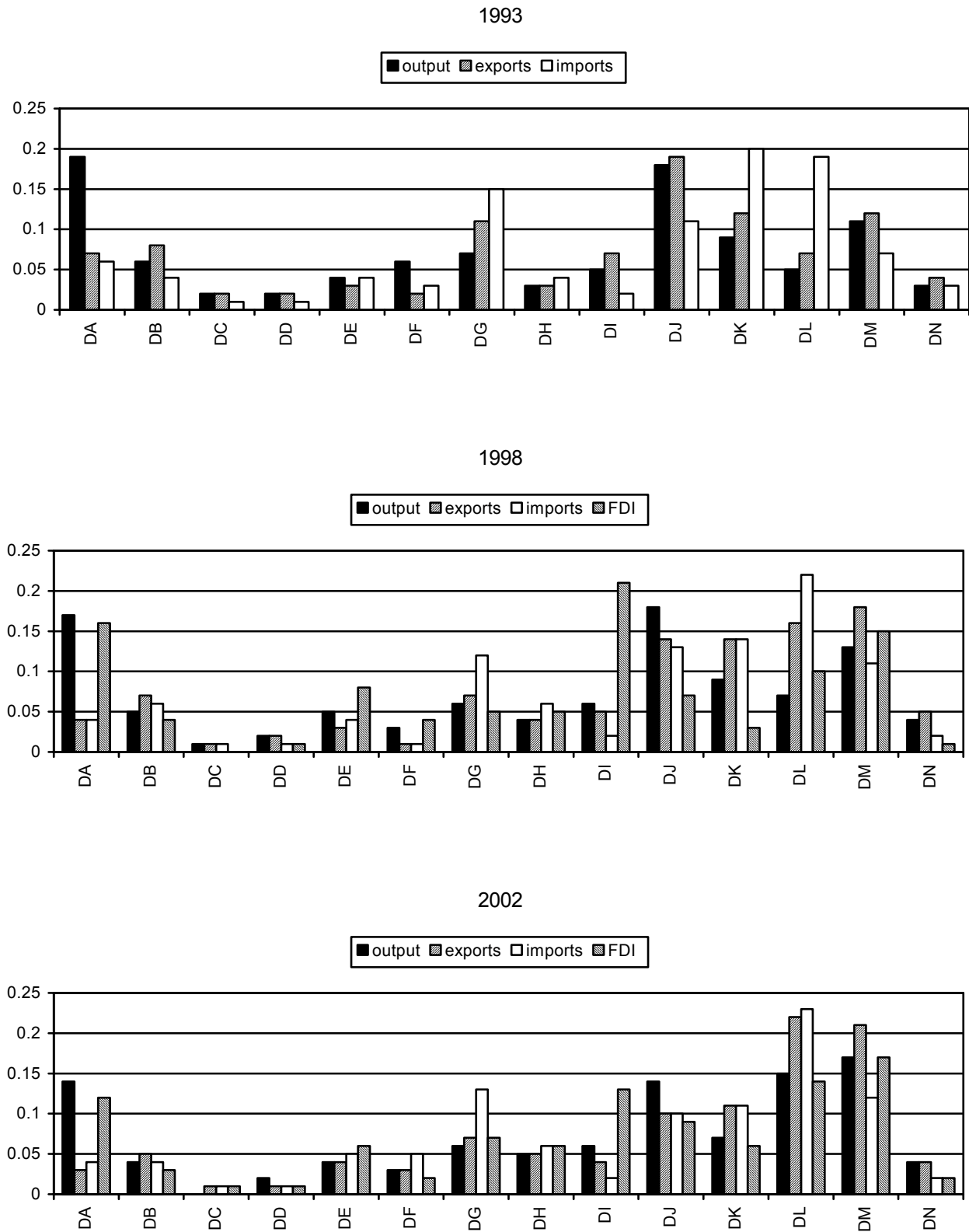


Figure 2

Industrial structure of Hungary, 1993-2002

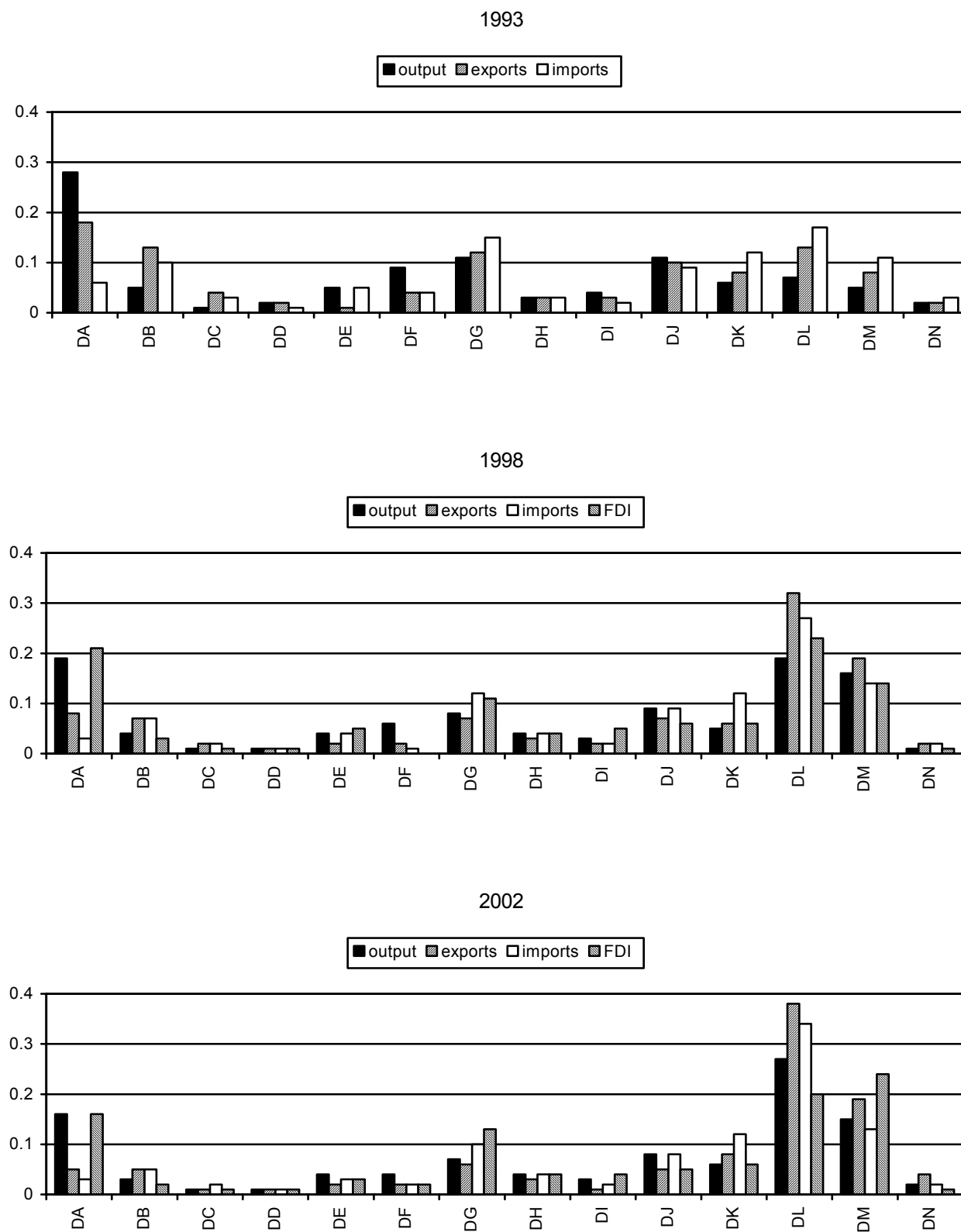


Figure 3

Industrial structure of Poland, 1993-2002

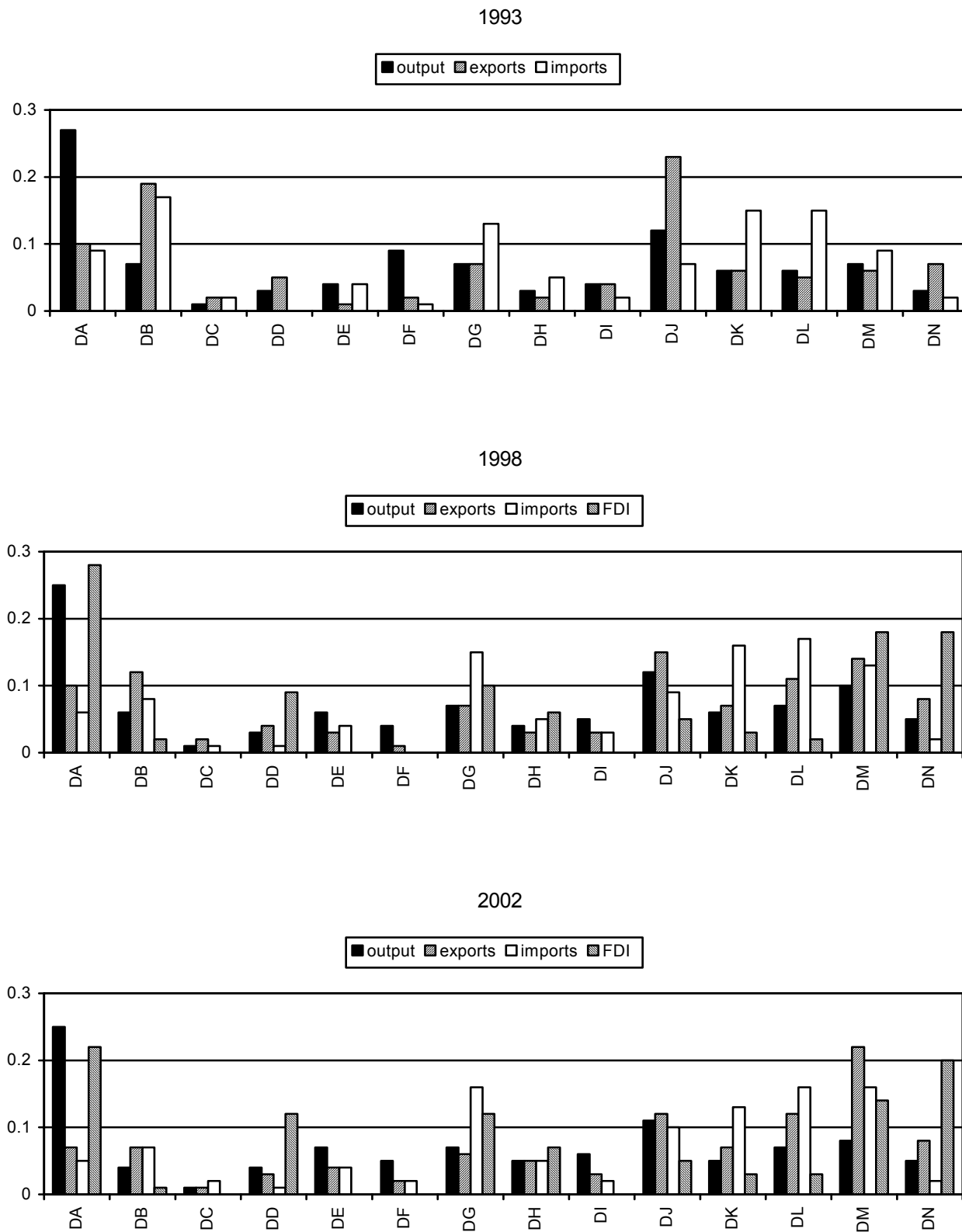


Figure 4

Industrial structure of Slovakia, 1993-2002

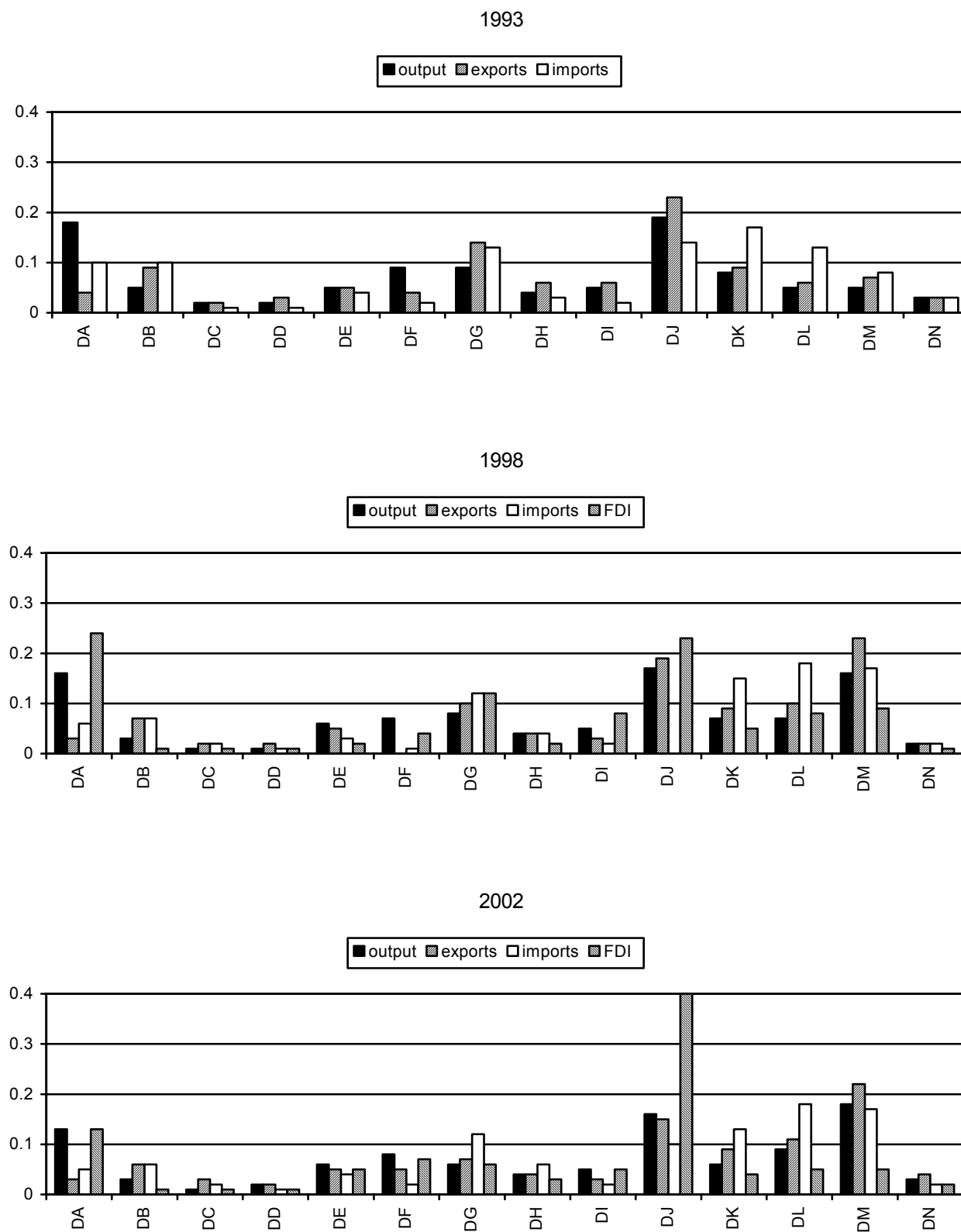
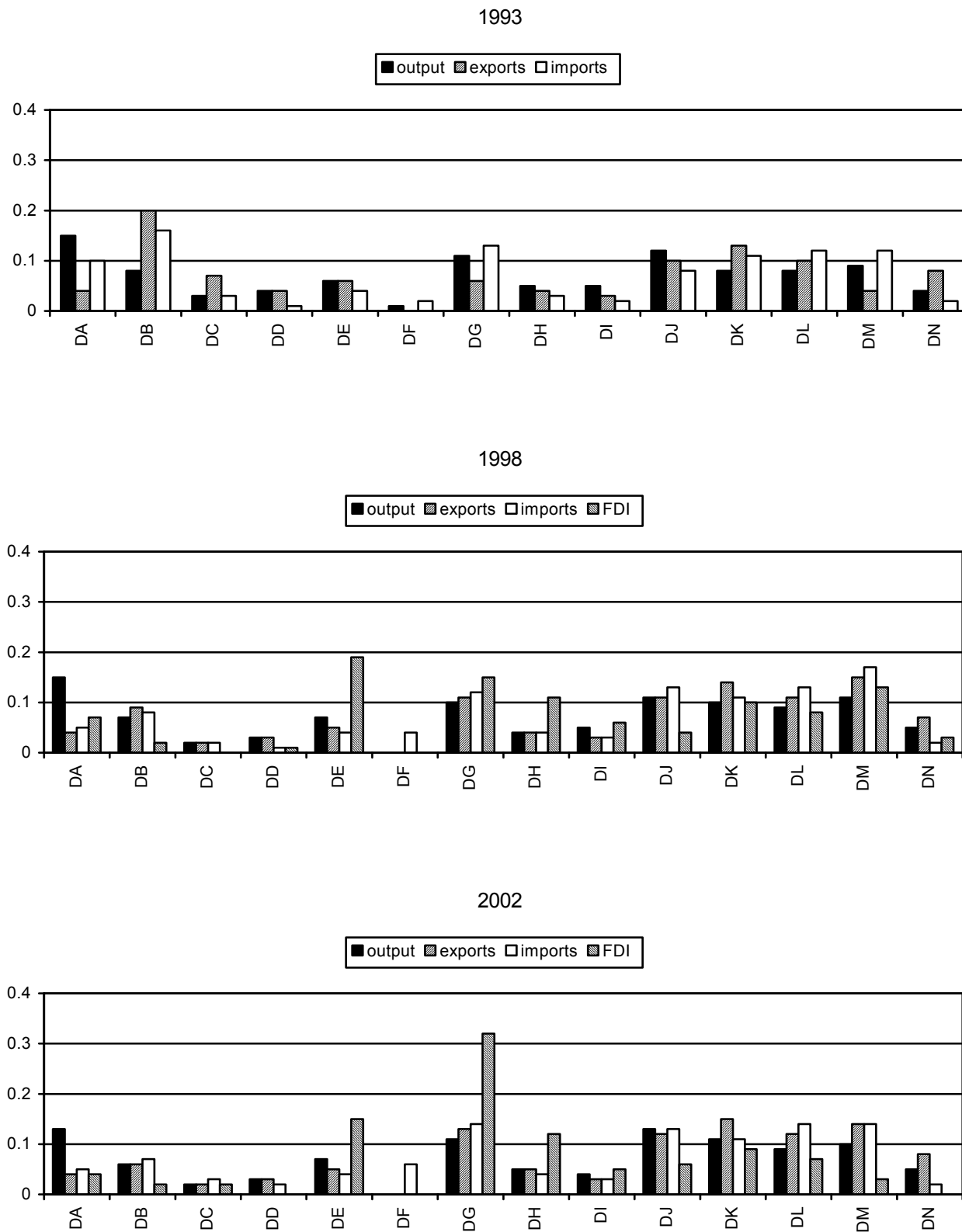


Figure 5

Industrial structure of Slovenia, 1993-2002



A note on Modigliani-Miller and the balance of payments

BY VLADIMIR GLIGOROV

Introduction

There is a presumption that foreign investments are better than foreign credits from the balance-of-payments point of view. Unlike in the case of firms, it is believed that it does matter in principle how leveraged states are. In other words, Modigliani-Miller (M-M) theorems cannot be applied to states. Is this view correct? It will be argued here that M-M theorems do apply to states as they apply to firms. The effects on the balance of payments will be examined and conditions under which the level of foreign debt becomes a binding constraint will be identified. Some comments on the significance of this analysis for emerging markets will conclude this note.

M-M theorems

The most important M-M theorem says that in general equilibrium it does not matter how leveraged a firm is. That implies that debt and equity are perfect substitutes. In a sense, that is obvious. These two types of securities differ in two respects: whether the value of the principal is fixed or not and whether it brings fixed income or not. However, there are securities with fixed value and variable return and those with variable value and fixed return. With these two characteristics in mind, the following classification can be introduced.

Table 1

		return	
		fixed	variable
principal	fixed	all types of loans and bonds	
	variable	preferred shares	common shares

A typical loan or bond will have a fixed nominal value, with fixed maturity, and a fixed interest rate.¹ It will also have a market value at each moment before the time it matures. A debt-instrument, e.g., a bond, can also carry a variable interest rate and indeed the eventual difference in the value between the one and the other can be arbitrated away in the financial markets. Similarly, a preferred share will have a fixed return, but its value will be determined in the market. Again, the market will arbitrage away the difference that may emerge between the preferred and the common shares. Finally, shares can be leveraged in the sense that bonds can be issued to buy shares. The arbitraging between bonds and shares should keep the investors indifferent between the two in the equilibrium. Thus, the difference between the two will disappear as long as the two types of instruments are marketable. Indeed, all possible classes of securities can be generalized to one: an option to settle for one or the other depending on the state of affairs at a particular point in time.

If that is true, then the value of a firm or of any asset should be:

- (i) independent of how leveraged it is, i.e., it will be equal to the value of the underlying option, and
- (ii) independent of whether its return is paid out or reinvested, i.e., of what is in fact done with the return.

These are the two familiar M-M theorems. The second one may be useful in clarifying another point about the difference between various types of securities. Debt is different from equity because it has to be repaid in a specified period of time. Thus, debts have to be paid eventually. However, if the income of the debtor increases by more than the interest on the debt, the debt can always be refinanced with new debt. No repayment has ever to be made. The same is the case with equities. No

¹ Securities have a fixed principal or return or both because their maturity is restricted in time. This is in turn a reflection of the assessment of risk. The nominal value of a bond and a fixed interest rate are essentially a way to put a limit on the risk that a creditor is taking with the bond it is buying.

dividend needs to be paid if the income of the firm increases fast enough. The owners of the shares will be happy to reinvest their dividends in the profitable business. In both cases, owners of bonds or shares can always find somebody to sell their securities to or to borrow from if they need the money. It is clear from this example that the fact that a bond has to be repaid at a specified time does not really matter. Of course, if the flow of income dries out, assets have to be sold and the obligation towards the debtors comes before that of the equity owners. That risk, however, is included in the value of the share which can be as high as possible or equal to zero.

Macroeconomics of M-M

The initial motivation for the analysis of the financial structure of firms was macroeconomic.² The question is, how could leverage matter when it is irrelevant to the economy as a whole? To see the latter, it is enough to observe that the balance sheet of an economy does not take account of its financial structure. In the national balance sheet, the assets are the productive capital and the liabilities are the household net worth. The form in which assets and liabilities are held does not matter. Does anything change if balance-of-payments considerations are introduced? The answer is negative. The nature of the securities does not change and the logic on which the national balance sheet is constructed does not change either. The fact that some households and firms are on the other side of the border should not make any difference.

The implication of this consideration is that it does not matter whether a country finances its current account with debt or with non-debt creating investments. Indeed, if anything, the irrelevance is easier to see in the international context. This is because a country issues a security which is in a sense an option that generalizes over debts and equities – that is, its currency. Holding a currency is

like taking an option the value of which depends on the state of affairs at different points in time. Thus, in general, the value of a country does not depend on how leveraged it is.

A way to see this is to look at what happens to the current account depending on whether it is financed with debt or direct investments. In both cases, foreigners hold claims on the national economy. These claims will appear as items in the income balance of the current account. They will be mirrored in the country's capital account. Over time, a country will be more or less leveraged depending on whether it has financed its current account with loans or direct investments. But that will have no impact on the soundness of its foreign financial position. This is because the foreigners' decision to hold assets in that country will not depend on the type of asset but on its value. In other words, the circumstances conducive to investment will be conducive to lending too.

Also, the sustainability of the external position will not depend on whether investments are welcomed and credits are not. Assuming that a firm has an interest to reinvest its profits, it would have the same interest to refinance its debt. If not, it would repatriate the interest earned as soon as its dividends. That would impact the income balance of the current account in the same way.

Thus, the M-M theorem applies to national economies as it does to firms. Whether a country can finance and sustain its external position does not depend on how leveraged that position is.

Optimality and imperfections

One confirmation of this consideration is the fact that currency crises have occurred in countries that were highly leveraged and in those which were not. Sometimes it is argued that the so-called sudden stop of capital inflows and indeed reversals in the flow from inward to outward ones happen more often in indebted countries than in those that rely more on direct investments. This is not intuitive. On the one hand, investments can stop as suddenly as credits, indeed it could easily happen that the

² See M. H. Miller (1988), 'The Modigliani-Miller Propositions After Thirty Years', *The Journal of Economic Perspectives*, Vol. 2, No. 4, pp. 99-120.

former will lead to the latter. On the other hand, loans may or may not be more liquid than shares depending on the way the banks and the stock exchanges are functioning. It is not intuitive to argue that it is difficult to get a loan while it is easy to directly invest and to also argue that the credit market is more liquid than the market for equities.

As argued above, bonds and equity should behave similarly. If it makes sense to invest it will make sense to buy a bond too. This statement depends on both being available. Thus, it makes sense to develop the market for direct investments as much as that for loans. In addition, it makes sense to develop long-term and short-term credits too. Usually, short-term debt is a problem when, as in some emerging markets, long-term bonds are initially non-existent. But optimality may require that most markets exist or at least that there are no obvious obstacles to them being developed as the demand for various financial instruments arises.

In the standard M-M framework, imperfections play a significant role. The way tax authorities treat various financial instruments may influence the way they affect the financial positions of firms and of the economy as a whole. If interest is not taxed while dividends are, that will differentiate the two of them and will segment the financial market. Other imperfections will work with the same effect. In some emerging markets, direct investments develop faster than banks, while in others banking is more developed than other financial institutions. The overall regulation of the financial markets plays a significant role too. Finally, the level of currency substitution is also quite important. If a country is suffering from the so-called original sin, some financial instruments will not be available and that will influence the optimality of the financial markets in a significant way.

External constraints

If it is true that it does not matter, under usual circumstances, how leveraged a country is, then the usual measures of financial vulnerability should not be seen as being important in the generally accepted way. Indeed, it could be argued that the following three criteria are the more important ones:

- (1) The sustainability of the external position. The key to a country's vulnerability is the development of its current account rather than the way the latter is financed. This is because the impact of debt and direct investments on the income balance of the current account is essentially the same. As long as the current account development is sustainable, the way it is financed does not matter.
- (2) The optimality of the financial markets. The relative development of the bond vs. equity markets is not important. The development of the market instruments does matter. This is the optimality condition.
- (3) Fiscal and regulatory rigidities matter. Fiscal or other preferences for one financial instrument over another may influence the debt vs. investment decision of firms and thus of countries too. If taking a loan is easier than buying an asset, or *vice versa*, the efficiency of the allocation of loans and assets may be negatively influenced and that may have an important influence on the choice of debt vs. direct investments in emerging markets.

Do profit tax cuts stimulate private investment?

BY KAZIMIERZ LASKI AND ROMAN RÖMISCH

Post-tax profits¹ per unit of output increase when at given profit/output rate the tax rate is reduced. With a higher post-tax profit per unit of output, profitability (measured that way) improves and this should be conducive to private (e.g. corporate) investment. Arguments like this, supported by common sense and the supply-oriented mainstream economics, motivate the tax policies in transition countries most of which have engaged in progressing reductions of corporate income tax rates. In this paper we shall try to check whether this argument is supported by data for the USA covering the period 1960 through 2003.

The profit tax rate used here is an effective corporate tax rate calculated as the ratio of the profit tax liability and profits.

Profits are defined as income from current production. With several differences, this income is measured as receipts less expenses as defined in Federal tax law. Among these differences are: Receipts exclude capital gains and dividends received; expenses exclude bad debt, depletion, and capital losses; inventory withdrawals are valued at current cost; and depreciation is on a consistent accounting basis and valued at current replacement cost. Because national income is defined as the income of US residents, its profits component includes income earned abroad by US corporations and excludes income earned in the United States by foreigners.

The profits tax liability is the sum of all Federal, State and local income taxes on corporate earnings. These earnings include capital gains and other income excluded from profit before taxes. The taxes are measured on an accrual basis, net of applicable tax credits (see Bureau of Economic Analysis (2002).

Thus our effective profit tax rate is similar to the effective corporate tax rate used by Nicodème (2001), who relates profit taxes to the gross operating profit of corporations.

The evolution of the US profit tax rate and private investment activities is illustrated by Figure 1.²

While the profit tax rate trend declined sharply (from about 40% to about 26% of profits), private investment as a percentage of GDP remained nearly constant. The average profit tax was 39.5% of profits in the pre-Reagan years 1961-1982 and 30.9% in the years 1982-2003. The average share of private investment in GDP in the same two periods was 16.5% and 16.2%, respectively. Thus, one can state that the reduction of the profit tax did not have an impact on the long-run share of private investment in GDP; both increased at roughly the same speed.

We can however ask a much more important question: Was the reduction of profit tax accompanied by an acceleration of growth of private investment (IP) and consequently of GDP? This question is investigated in Figure 2. Here too the answer is quite clear as the trend growth rate of IP was falling. Thus the declining profit tax rate trend was accompanied by a deceleration of IP growth. The average corporate profit tax rate amounted, as mentioned above, to 39.5% in 1960-1982 and to 30.9% in 1983-2003 while in the same periods the average growth rate of private investment decreased from 4.8% p.a. to 2.5% p.a. Hence the corporate profit tax cut by 8 percentage points was accompanied by a decline of the investment growth rate by 2.3 percentage points. If we take into consideration the last three years we find that the corporate profit tax declined from 32.4% in 2001 to 26.1% in 2002 and to 21.6% in 2003. In these three years private investment moved from 4.5% growth (2001) to a decline by 9.5% (2002) and 2.6% (2003). It will be quite interesting to find out how private investment will develop in the US in the years to come.

Above, the trends of the variables were considered. However, some interesting observations can be

¹ Pre-tax profits considered in this paper include consumption of fixed capital (amortization); hence post-tax profits (pre-tax profits minus profit tax) include amortization.

² All data in this text are taken from the AMECO Database and from the Economic Report of the President (2004).

Figure 1

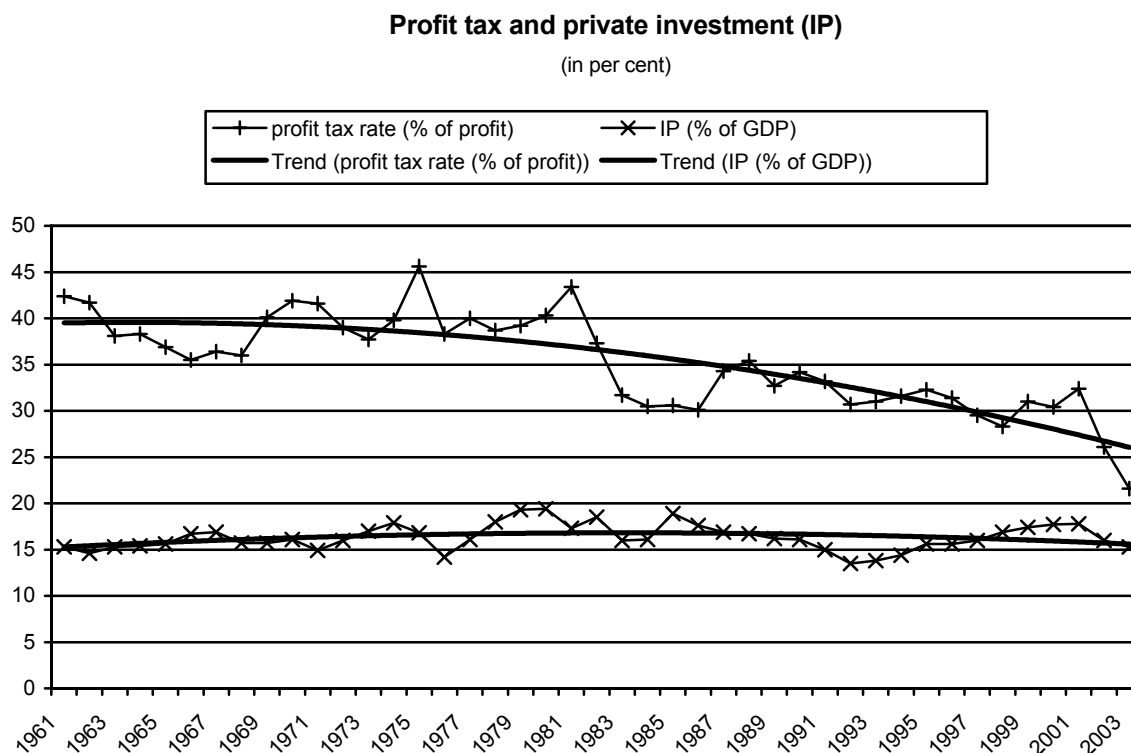


Figure 2

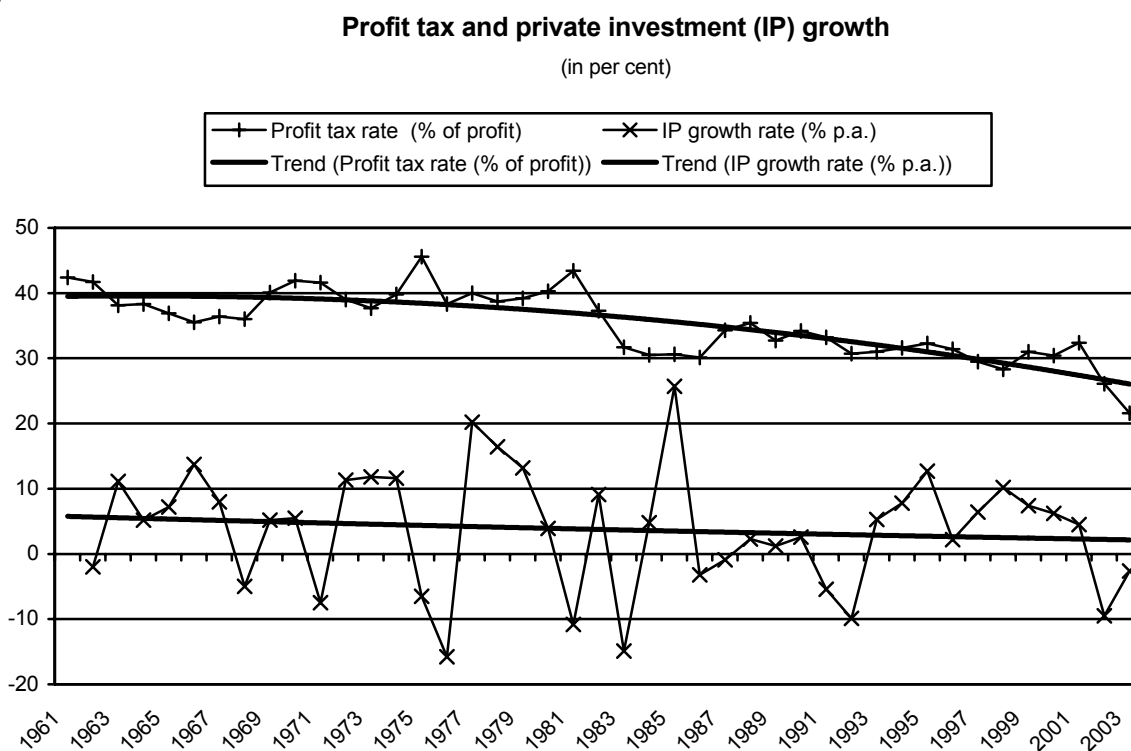


Figure 3

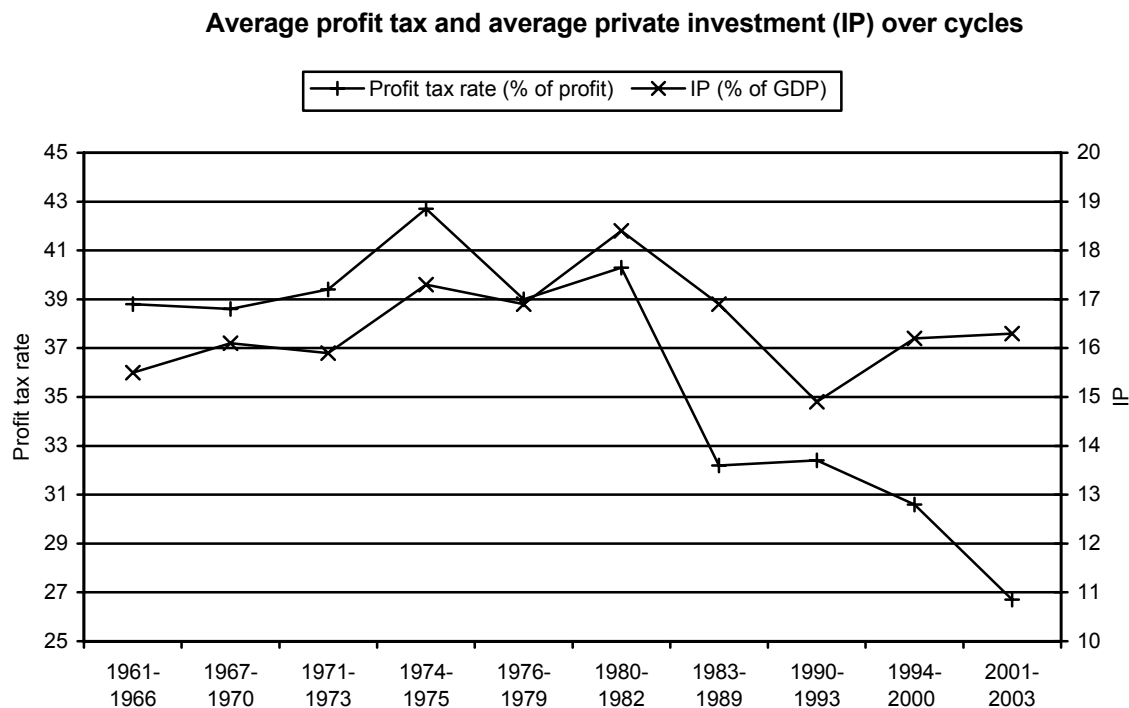
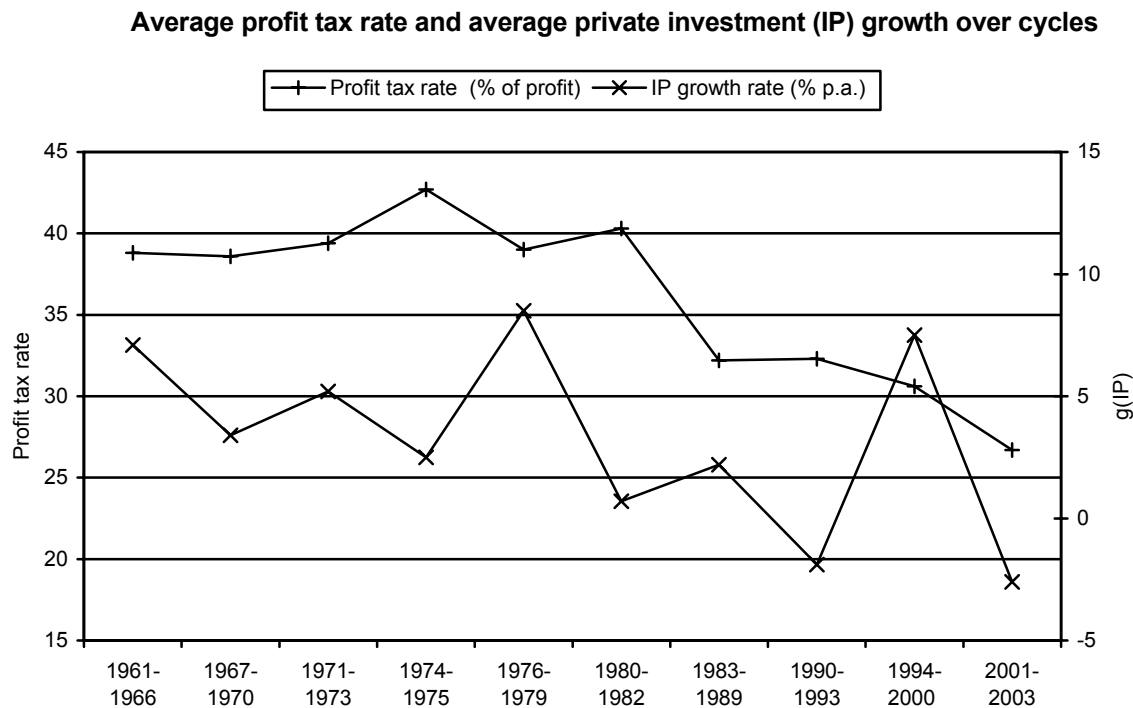


Figure 4



made concerning the behaviour over consecutive business cycles, each to be divided into an 'up' and a 'down' phase. As can be seen from Figure 3, the average profit tax rate, over the recent (post-1980) phases, has been definitely falling. It is likely to fall still further over the current, not yet closed 'down' phase.

An inspection of Figure 3 indicates that in four phases (out of nine closed ones) – namely, between 1974 and 1989 – the average profit tax rate and the average share of private investment moved in the same direction instead of an opposite one.

In Figure 4 the relation between average profit tax rate and average private investment growth over cycles is presented. As investment growth is the very engine of the business cycle, the 'up' and 'down' phases of every cycle are easily seen. But over these cyclical changes a clear pattern is evident. The average growth rate of investment in every 'down' phase is lower than in the previous one. This applies also to the 'up' phases (except for 1976-1979 and 1994-2000). Because of the rather strong relation between investment and GDP these conclusions are valid for GDP growth as well.

What kind of lessons can be drawn from this analysis? The advocates of profit tax reductions assume that profits are more or less given, hence that a tax reduction would increase post-tax profits and therefore also investment and overall growth. In reality however, profits are determined mostly by investment (and other net aggregate demand injections) not *vice versa*. The profit tax reduction, if accompanied – as is mostly the case – by a restrictive fiscal policy, necessitates either an increase in other taxes or a reduction in government expenditures. In both cases the reduction of profit tax would depress the level of economic activity because the increase of non-profit taxes would negatively influence private consumption and the decrease of government expenditures would negatively influence collective consumption and/or public investment. The lower level of economic activity thus provoked by profit

tax reduction, combined with a given budget deficit, would depress rather than stimulate private investment and in turn reduce rather than increase profits.

The idea that an increase in profit tax would stimulate rather than depress economic activity was first formulated by Kalecki.³ Steindl developed this idea: '... if the budget is balanced this does not necessarily mean it has no influence, either stimulating or restrictive, on effective demand: this depends on the relative saving propensities of the taxpayers on the one hand and on the recipients of the government spending on the other. If taxes are imposed on strong savers like corporations while the spending out of the budget goes to small savers, then the balanced budget is equivalent in its effects on demand to a dissaving of government. It therefore increases effective demand and utilization of capacity.'⁴

The USA is, from this point of view, a quite atypical case because in that country the profit tax reductions were combined with large deficits over the 1980s and from the beginning of the 2000s. The negative consequences of the tax reductions (lower public spending) were therefore limited. Moreover, in the USA (unlike in Germany where profit taxation has also been falling) real wages have lagged much less behind labour productivity growth.⁵ This has helped to keep a relatively high level of capacity utilization (through strong consumption out of wages). Also, in contrast to the policy of the Bundesbank (and of the ECB), the US monetary policy has not been narrowly focused

³ See 'A theory of commodity, income and capital taxation' in Kalecki (1971), pp. 38-41.

⁴ Steindl (1990), pp. 113-114.

⁵ A good measure of wage restraint is the term called in German the 'real wage position'. We get this term as the rate of growth in real wages (defined as gross income from dependent employment per worker, adjusted to the GDP deflator) minus the growth rate of labour productivity (defined as GDP per worker) and reported at a cumulative rate of change. Flassbeck (2000, p. 11) has found that between 1980 and 2000 the 'real wage position' declined by about 3% in the USA while by about 16% in West Germany and the EMU.

on keeping inflation low. It allows for the state of the real economy – e.g. by providing cheap money whenever the real economy slows down.

The US-specific factors (tax cuts being associated with rising deficits rather than with cuts in spending; real wages trailing not far behind labour productivity; responsiveness of the monetary policy to the needs of the real economy) have all limited the negative impact of profit tax reductions on private investment – without offsetting it completely. The impacts of the tax reductions enacted elsewhere (e.g. in the transition countries) may not be similarly accommodated (if only because of the provisions of the Stability and Growth Pact). In effect the overall negative economic consequences of such tax cuts may turn out to be much more pronounced.

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CONVENTIONAL SIGNS AND ABBREVIATIONS

used in the following section on monthly statistical data

.	data not available
%	per cent
CMPY	change in % against corresponding month of previous year
CCPY	change in % against cumulated corresponding period of previous year (e.g., under the heading 'March': January-March of the current year against January-March of the preceding year)
3MMA	3-month moving average, change in % against previous year.
CPI	consumer price index
PM	change in % against previous month
PPI	producer price index
p.a.	per annum
mn	million
bn	billion
BGN	Bulgarian lev (1 BGN = 1000 BGL)
CZK	Czech koruna
EUR	Euro, from 1 January 1999
HRK	Croatian kuna
HUF	Hungarian forint
PLN	Polish zloty
ROL	Romanian leu
RUB	Russian rouble (1 RUB = 1000 RUR)
SIT	Slovenian tolar
SKK	Slovak koruna
UAH	Ukrainian hryvnia
USD	US dollar
M0	currency outside banks
M1	M0 + demand deposits
M2	M1 + quasi-money

Sources of statistical data:

National statistical offices and central banks; wiiw estimates.

Please note: wiiw Members have **free online access** to the wiiw Monthly Database Eastern Europe.

To receive your personal password, please go to <http://mdb.wiiw.ac.at>

R U S S I A: Selected monthly data on the economic situation 2003 to 2004

(updated end of August 2004)

		2003										2004						
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
PRODUCTION																		
Industry, total	real, CMPY	7.1	8.5	7.0	7.1	5.5	8.0	7.2	7.1	7.9	7.5	8.7	6.6	6.7	5.5	9.2	4.4	
Industry, total	real, CCPY	6.3	7.1	6.8	6.8	6.6	6.8	6.8	6.8	7.0	7.5	8.1	7.6	7.4	7.0	7.4	7.0	
Construction, total	real, CMPY	14.7	15.5	14.3	15.0	14.3	14.7	14.6	11.6	16.6	13.3	13.8	14.2	15.8	14.9	13.3	7.5	
LABOUR																		
Employment total ¹⁾	th. persons	65000	65500	66000	66400	66700	66600	66500	66500	66400	65400	64900	65400	65800	66300	66600	.	
Unemployment, end of period ²⁾	th. persons	6072	5821	5744	5747	5680	5690	5750	5716	5951	6280	6562	6121	5680	5239	5169	5170	
Unemployment rate ²⁾	%	8.5	8.2	8.0	8.0	7.8	7.9	8.0	7.9	8.2	8.8	9.2	8.5	7.9	7.3	7.2	7.1	
WAGES, SALARIES																		
Total economy, gross	RUB	5100.0	5221.0	5550.0	5615.0	5491.0	5556.0	5864.0	5990.0	7344.0	5932.0	6141.0	6428.0	6448.0	7003.0	7143.0	.	
Total economy, gross	real, CMPY	8.3	9.8	9.3	7.2	7.4	8.6	11.6	13.5	14.3	13.5	18.0	16.8	14.6	21.7	16.8	.	
Total economy, gross	USD	163	169	182	185	181	182	194	211	250	206	215	225	225	242	246	.	
Total economy, gross	EUR	151	146	156	162	162	162	166	180	203	163	170	184	187	201	202	.	
Industry, gross	EUR	184	175	183	198	206	200	198	219	230	190	200	215	222	220	229	.	
PRICES																		
Consumer	PM	1.0	0.8	0.8	0.7	-0.4	0.3	1.0	1.0	1.1	1.8	1.0	0.8	1.0	0.7	0.8	0.9	
Consumer	CMPY	14.6	13.6	13.9	13.9	13.3	13.2	13.1	12.4	12.0	11.3	10.7	10.3	10.3	10.2	10.2	10.5	
Consumer	CCPY	14.6	14.4	14.3	14.3	14.1	14.0	13.9	13.8	13.6	11.3	11.0	10.8	10.7	10.6	10.5	10.5	
Producer, in industry	PM	1.4	-0.2	0.7	2.2	1.4	1.4	1.2	0.5	0.6	4.2	3.4	1.7	2.7	2.1	2.5	1.2	
Producer, in industry	CMPY	20.2	17.1	14.3	13.9	13.5	13.8	12.8	12.1	13.0	17.3	19.6	20.1	21.6	24.4	26.6	25.4	
Producer, in industry	CCPY	19.6	19.1	18.2	17.6	17.0	16.6	16.2	15.8	15.6	17.3	18.4	19.0	19.7	20.6	21.6	22.2	
RETAIL TRADE																		
Turnover ³⁾	real, CMPY	8.6	10.0	8.7	7.8	6.1	7.0	7.1	7.1	8.1	16.3	4.4	7.5	14.4	12.2	14.5	.	
Turnover ³⁾	real, CCPY	8.3	8.7	8.7	8.5	8.2	8.1	8.0	7.9	7.9	16.3	10.4	9.4	10.7	11.0	11.6	.	
FOREIGN TRADE⁴⁾⁵⁾⁶⁾																		
Exports total, cumulated	EUR mn	38327	47318	56861	66902	77668	87970	98836	108697	120193	9336	18795	29815	41596	52713	64057	.	
Imports total, cumulated	EUR mn	20439	25524	30712	36589	42258	47991	54028	59782	66703	4170	9200	15347	21793	27975	34475	.	
Trade balance, cumulated	EUR mn	17888	21794	26149	30313	35410	39979	44807	48915	53490	5167	9595	14467	19803	24739	29582	.	
FOREIGN FINANCE																		
Current account, cumulated ⁷⁾	EUR mn	.	.	17863	.	.	24410	.	.	31719	.	.	10392	.	.	.	.
EXCHANGE RATE																		
RUB/USD, monthly average	nominal	31.212	30.907	30.469	30.360	30.349	30.599	30.165	28.389	29.434	28.839	28.515	28.529	28.686	28.989	29.030	29.082	
RUB/EUR, monthly average	nominal	33.867	35.738	35.594	34.560	33.876	34.300	35.296	33.261	36.134	36.377	36.092	35.018	34.446	34.817	35.298	35.673	
RUB/USD, calculated with CPI ⁸⁾	real, Jan00=100	70.6	69.3	67.8	67.2	67.7	68.3	66.6	61.8	63.4	61.3	60.3	60.3	60.2	60.7	60.6	60.2	
RUB/USD, calculated with PPI ⁸⁾	real, Jan00=100	68.5	67.9	67.1	65.2	64.5	64.4	63.1	58.9	61.0	58.1	55.9	55.2	54.7	55.0	53.9	53.3	
RUB/EUR, calculated with CPI ⁸⁾	real, Jan00=100	75.0	78.5	77.6	74.8	73.8	74.7	76.2	71.2	76.7	75.8	74.7	72.2	70.6	71.2	71.6	71.7	
RUB/EUR, calculated with PPI ⁸⁾	real, Jan00=100	71.6	75.4	74.5	70.8	68.5	68.4	69.6	65.3	70.5	68.4	65.7	63.1	60.7	60.4	59.8	59.7	
DOMESTIC FINANCE																		
M0, end of period	RUB bn	822.3	855.5	917.0	940.9	966.3	957.1	975.8	1002.1	1147.0	1130.6	1164.1	1165.5	1230.1	1220.5	1276.1	.	
M1, end of period	RUB bn	1583.4	1679.8	1821.8	1808.5	1844.3	1871.2	1850.2	1899.0	2181.9	2126.9	2197.1	2244.6	2255.8	2286.3	2425.3	.	
M2, end of period	RUB bn	3052.4	3162.9	3339.7	3400.4	3448.9	3573.0	3543.1	3617.7	3962.1	3946.1	4093.0	4190.3	4333.7	4365.7	4543.2	.	
M2, end of period	CMPY	37.9	38.2	41.7	41.5	41.1	43.2	39.6	39.0	39.4	42.1	40.4	40.2	42.0	38.0	36.0	.	
Refinancing rate (p.a.) ^{end of period}	%	18.0	18.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	14.0	14.0	14.0	14.0	14.0	13.0	13.0	
Refinancing rate (p.a.) ^{end of period} ⁹⁾	real, %	-1.9	0.8	1.5	1.9	2.2	2.0	2.9	3.5	2.7	-2.8	-4.7	-5.0	-6.2	-8.4	-10.8	-9.9	
BUDGET																		
Central gov. budget balance, cum.	RUB bn	127.3	173.8	184.3	213.6	223.8	238.9	287.7	316.1	228.2	102.5	115.5	134.7	169.8	255.4	.	.	

1) Based on labour force survey.

2) According to ILO methodology.

3) Including estimated turnover of non-registered firms, including catering.

4) Based on cumulated USD and converted using the ECB EUR/USD average foreign exchange reference rate.

5) Cumulation starting January and ending December each year, incl. estimates of non-registered imports.

6) Based on balance of payments statistics.

7) Calculated from USD to NCU to EUR using the official average exchange rate.

8) Adjusted for domestic and foreign (US resp. EU) inflation. Values less than 100 mean real appreciation.

9) Deflated with annual PPI.

S L O V A K REPUBLIC: Selected monthly data on the economic situation 2003 to 2004

(updated end of August 2004)

		2003										2004						
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
PRODUCTION																		
Industry, total	real, CMPY	2.2	2.4	9.5	2.2	1.2	3.3	5.1	3.2	4.3	0.4	8.1	11.1	5.0	8.5	5.5	.	
Industry, total	real, CCPY	8.4	7.2	7.6	6.8	6.1	5.8	5.7	5.4	5.3	0.4	4.2	6.6	6.2	6.7	6.5	.	
Industry, total	real, 3MMA	5.0	4.7	4.7	4.4	2.3	3.3	3.9	4.2	2.7	4.2	6.6	8.1	8.3	6.3	.	.	
Construction, total	real, CMPY	-0.4	0.3	3.3	5.8	9.4	14.3	8.3	6.7	11.5	0.5	3.3	3.4	2.0	0.1	2.4	.	
LABOUR																		
Employment in industry	th. persons	558.2	561.1	563.8	562.4	561.7	565.1	566.2	561.2	549.1	544.3	544.8	548.2	551.2	551.0	553.4	.	
Unemployment, end of period	th. persons	450.7	433.1	427.6	422.8	415.6	407.6	407.1	420.2	452.2	469.2	466.4	452.6	431.7	410.8	399.5	392.1	
Unemployment rate ¹⁾	%	15.4	14.8	14.6	14.5	14.3	13.9	13.8	14.2	15.6	16.6	16.5	16.0	15.3	14.5	13.9	13.7	
Labour productivity, industry	CCPY	7.5	6.5	7.0	6.1	5.5	5.1	5.0	4.8	4.8	1.0	5.1	7.5	7.3	7.9	7.8	.	
Unit labour costs, exch.r. adj.(EUR)	CCPY	-0.3	1.6	2.5	3.7	4.3	5.0	5.3	5.5	5.4	10.9	7.5	6.1	5.2	3.2	3.2	.	
WAGES, SALARIES																		
Industry, gross	SKK	14827	15379	16140	15289	14688	15085	16069	17995	17259	15707	14806	16050	15775	15976	17212	.	
Industry, gross	real, CMPY	0.6	-0.2	1.6	-3.4	-4.3	-0.4	1.2	-1.0	-1.9	1.2	1.4	4.3	-1.1	-4.1	-1.4	.	
Industry, gross	USD	391	432	455	416	392	406	456	511	514	486	461	487	472	477	523	.	
Industry, gross	EUR	361	374	389	366	350	363	389	437	420	385	365	397	393	397	431	.	
PRICES																		
Consumer	PM	0.2	0.1	0.4	0.0	1.0	0.5	0.1	0.2	0.2	4.4	0.8	0.1	0.0	0.4	0.2	0.3	
Consumer	CMPY	7.7	7.6	8.4	8.7	9.2	9.5	9.6	9.8	9.3	8.3	8.5	8.2	8.0	8.3	8.1	8.5	
Consumer	CCPY	7.7	7.6	7.8	7.9	8.1	8.2	8.4	8.5	8.6	8.3	8.4	8.3	8.2	8.3	8.2	8.3	
Producer, in industry	PM	-0.1	-0.6	0.0	0.2	-0.2	0.1	-0.1	0.3	0.0	1.3	1.0	0.2	-0.1	0.2	0.2	0.1	
Producer, in industry	CMPY	8.2	7.8	8.2	8.2	8.0	8.0	8.0	8.7	8.6	4.4	2.3	2.1	2.2	3.0	3.2	3.1	
Producer, in industry	CCPY	8.5	8.3	8.3	8.3	8.3	8.2	8.2	8.3	8.3	4.4	3.3	2.9	2.7	2.8	2.8	2.9	
RETAIL TRADE²⁾																		
Turnover	real, CMPY	-1.9	-6.3	-9.3	-7.6	-5.7	-5.8	-5.0	-3.3	-0.7	0.5	4.0	7.1	7.4	7.8	10.5	.	
Turnover	real, CCPY	-5.2	-5.4	-6.1	-6.3	-6.2	-6.2	-6.1	-5.8	-5.2	0.5	2.3	3.9	4.8	5.4	6.2	.	
FOREIGN TRADE^{3,4)}																		
Exports total (fob) ⁵⁾ , cumulated	EUR mn	5714	7382	9042	10706	12261	13985	15821	17641	19361	1500	3144	5005	7020	8951	10826	.	
Imports total (fob) ⁵⁾ , cumulated	EUR mn	5997	7611	9278	11053	12594	14340	16234	18084	19926	1476	3104	5022	7071	9004	11041	.	
Trade balance ⁵⁾ , cumulated	EUR mn	-282	-229	-236	-348	-333	-355	-413	-443	-565	25	40	-17	-52	-53	-215	.	
Exports to EU-15 (fob) ⁶⁾ , cumulated	EUR mn	3619	4616	5603	6573	7476	8473	9614	10733	11742	1262	2651	4192	5908	7541	.	.	
Imports from EU-15 (fob) ⁶⁾ , cumulated	EUR mn	2982	3839	4711	5661	6461	7357	8336	9286	10236	1055	2258	3695	5225	6640	.	.	
Trade balance with EU-15 ⁶⁾ , cumulated	EUR mn	638	776	892	912	1015	1117	1278	1447	1505	207	394	497	683	900	.	.	
FOREIGN FINANCE																		
Current account, cumulated ³⁾	EUR mn	-195	-133	-182	-205	-154	-176	-176	-172	-246	55	103	131	98	-153	-399	.	
EXCHANGE RATE																		
SKK/USD, monthly average	nominal	37.9	35.6	35.5	36.7	37.5	37.1	35.3	35.2	33.6	32.3	32.1	32.9	33.4	33.5	32.9	32.5	
SKK/EUR, monthly average	nominal	41.1	41.1	41.5	41.8	41.9	41.5	41.3	41.1	41.1	40.7	40.6	40.4	40.1	40.2	39.9	39.9	
SKK/USD, calculated with CPI ⁷⁾	real, Jan00=100	80.1	75.1	74.7	77.4	78.5	77.6	73.6	73.1	69.5	64.3	63.8	65.8	67.1	67.3	66.2	65.2	
SKK/USD, calculated with PPI ⁷⁾	real, Jan00=100	78.2	73.7	74.3	76.5	78.5	77.9	74.5	74.0	70.9	68.1	67.4	69.3	71.4	72.4	71.2	70.3	
SKK/EUR, calculated with CPI ⁷⁾	real, Jan00=100	85.1	85.1	85.6	86.2	85.8	84.8	84.3	83.9	84.0	79.7	78.9	78.9	78.7	78.8	78.1	77.8	
SKK/EUR, calculated with PPI ⁷⁾	real, Jan00=100	81.7	81.9	82.6	83.0	83.6	82.7	82.3	81.8	81.8	80.2	79.3	79.3	79.2	79.6	78.9	78.8	
DOMESTIC FINANCE																		
M0, end of period	SKK bn	86.3	87.0	86.6	87.7	90.8	89.1	90.2	91.7	91.8	91.7	91.7	90.8	90.9	91.9	.	.	
M1, end of period	SKK bn	242.4	244.8	248.7	251.9	256.2	256.9	258.7	264.4	276.9	261.2	265.5	258.9	260.8	268.0	279.2	.	
M2, end of period	SKK bn	711.7	718.7	702.0	722.3	729.6	725.7	732.2	740.5	750.7	739.0	744.1	724.0	731.9	723.2	744.7	.	
M2, end of period	CMPY	7.4	7.5	3.4	4.3	4.8	5.2	5.4	5.4	5.2	5.2	4.3	1.9	2.8	0.6	6.1	.	
Discount rate (p.a.) ⁸⁾ , end of period	%	6.50	6.50	6.50	6.50	6.50	6.25	6.25	6.25	6.00	6.00	6.00	5.50	5.00	5.00	4.50	4.50	
Discount rate (p.a.) ^{8,9)} , end of period	real, %	-1.6	-1.2	-1.6	-1.6	-1.4	-1.6	-1.6	-2.3	-2.4	1.6	3.7	3.3	2.8	2.0	1.8	1.4	
BUDGET																		
Central gov. budget balance, cum.	SKK mn	-23786	-30580	-27619	-31190	-33104	-37675	-40396	-42779	-55973	-2658	-4424	1175	5723	-2270	-12455	-18551	

1) Ratio of disposable number of registered unemployment calculated to the economically active population as of previous year.

2) According to NACE (52 - retail trade), excluding VAT.

3) Based on cumulated national currency and converted with the average exchange rate.

4) Cumulation starting January and ending December each year.

5) From January 2004 new methodology effective from the 1st May 2004.

6) From January 2004 EU-25.

7) Adjusted for domestic and foreign (US resp. EU) inflation. Values less than 100 mean real appreciation.

8) From January 2002 corresponding to the 2-week limit rate of NBS.

9) Deflated with annual PPI.

U K R A I N E: Selected monthly data on the economic situation 2003 to 2004

(updated end of August 2004)

		2003										2004						
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
PRODUCTION																		
Industry, total ¹⁾	real, CMPY	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Industry, total	real, CCPY	11.4	11.7	12.4	13.8	14.6	15.2	15.7	15.5	15.8	16.1	18.2	18.8	17.7	16.9	15.9	.	
Industry, total ¹⁾	real, 3MMA	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LABOUR																		
Unemployment, end of period	th. persons	1107.3	1057.8	1012.7	996.1	982.8	961.8	938.6	949.9	988.9	1003.6	1045.4	1061.2	1044.6	1005.8	962.5	945.0	
Unemployment rate ²⁾	%	4.0	3.9	3.7	3.6	3.6	3.5	3.4	3.5	3.6	3.7	3.8	3.9	3.8	3.7	3.5	3.4	
WAGES, SALARIES¹⁾																		
Total economy, gross	UAH	422.6	439.3	476.2	489.5	479.2	498.3	498.3	489.5	550.9	499.7	510.1	545.1	547.9	555.0	601.5	.	
Total economy, gross	real, CMPY	14.7	17.8	19.1	14.5	16.1	19.9	17.3	14.4	14.9	15.3	21.4	23.0	21.6	17.6	16.9	.	
Total economy, gross	USD	79	82	89	92	90	93	93	92	103	94	96	102	103	104	113	.	
Total economy, gross	EUR	73	72	76	81	81	83	80	78	84	74	76	84	86	87	93	.	
Industry, gross	EUR	97	94	.	.	.	.	.	.	.	97	97	108	110	111	114	.
PRICES																		
Consumer	PM	0.7	0.0	0.1	-0.1	-1.7	0.6	1.3	1.9	1.5	1.4	0.4	0.4	0.7	0.7	0.7	0.0	
Consumer	CMPY	3.6	3.9	5.9	7.4	5.8	6.2	6.9	8.1	8.2	8.1	7.4	6.6	6.6	7.4	8.0	8.1	
Consumer	CCPY	2.6	2.8	3.3	3.9	4.1	4.4	4.6	4.9	5.2	8.1	7.8	7.4	7.2	7.2	7.4	7.5	
Producer, in industry	PM	0.3	0.3	0.0	1.0	1.0	0.9	0.7	1.5	1.7	1.6	2.9	2.2	3.3	2.1	1.5	0.1	
Producer, in industry	CMPY	8.9	7.6	5.3	5.3	6.8	7.4	8.0	9.4	11.2	12.4	14.9	15.0	18.4	20.6	22.4	21.3	
Producer, in industry	CCPY	8.1	8.0	7.5	7.2	7.1	7.2	7.3	7.5	7.8	12.4	13.7	14.1	15.2	16.3	17.3	17.9	
RETAIL TRADE																		
Turnover ³⁾	real, CCPY	11.9	13.8	15.1	16.8	17.1	18.1	19.1	18.9	19.4	19.1	21.5	24.3	22.9	22.3	21.4	.	
FOREIGN TRADE⁴⁾⁵⁾																		
Exports total (fob), cumulated	EUR mn	6345	7809	9330	11143	12877	14692	16585	18430	20408	1686	3543	5736	8209	10438	12660	.	
Imports total (cif), cumulated	EUR mn	5967	7392	8928	10732	12513	14354	16311	18131	20356	1374	3059	5051	6961	8702	10695	.	
Trade balance, cumulated	EUR mn	378	417	402	411	364	338	274	299	52	312	484	685	1248	1736	1964	.	
FOREIGN FINANCE																		
Current account, cumulated ⁶⁾	EUR mn	.	.	1642	.	.	2237	.	.	2559	.	.	1335	.	.	.	.
EXCHANGE RATE																		
UAH/USD, monthly average	nominal	5.334	5.333	5.333	5.332	5.332	5.332	5.332	5.332	5.332	5.331	5.331	5.330	5.329	5.327	5.322	5.318	
UAH/EUR, monthly average	nominal	5.786	6.125	6.225	6.066	5.951	5.968	6.238	6.239	6.541	6.725	6.735	6.526	6.405	6.383	6.456	6.524	
UAH/USD, calculated with CPI ⁷⁾	real, Jan00=100	81.5	81.4	81.4	81.6	83.3	83.1	81.9	80.2	78.9	78.2	78.3	78.5	78.2	78.0	77.7	77.7	
UAH/USD, calculated with PPI ⁷⁾	real, Jan00=100	81.7	81.3	82.2	81.1	80.5	80.1	80.0	78.6	77.6	77.4	75.6	74.3	72.8	72.4	71.5	71.3	
UAH/EUR, calculated with CPI ⁷⁾	real, Jan00=100	86.9	92.0	93.4	91.1	91.1	91.1	94.1	92.4	95.7	97.0	97.0	94.1	92.1	91.5	91.9	92.9	
UAH/EUR, calculated with PPI ⁷⁾	real, Jan00=100	85.6	90.0	91.4	88.1	85.8	85.3	88.5	87.3	90.0	91.3	89.1	85.0	81.1	79.6	79.3	80.1	
DOMESTIC FINANCE																		
M0, end of period	UAH mn	27650	27879	29375	30080	31072	30862	31549	31318	33119	31501	32672	33580	35836	35810	36890	.	
M1, end of period	UAH mn	42743	43447	46815	47276	48315	50293	49341	49467	53129	49792	51387	54970	56750	57873	60814	.	
Broad money, end of period	UAH mn	72509	73977	79034	80786	83048	86495	86856	88295	95043	92643	96050	101151	105104	109435	113961	.	
Broad money, end of period	CMPY	49.8	51.6	54.4	49.8	47.5	49.8	48.0	48.2	47.3	47.4	47.9	45.1	45.0	47.9	44.2	.	
Refinancing rate (p.a.) ^{end of period}	%	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.5	7.5	
Refinancing rate (p.a.) ^{end of period⁸⁾}	real, %	-1.8	-0.6	1.6	1.6	0.2	-0.4	-0.9	-2.2	-3.8	-4.8	-6.9	-7.0	-9.7	-11.3	-12.2	-11.4	
BUDGET																		
General gov. budget balance, cum.	UAH mn	2348.1	3375.2	2500.9	2889.3	4028.2	3991.5	3636.2	4111.6	-489.9	1614.7	1814.9	1203.7	660.5	1488.6	548.6	.	

1) Excluding small firms.

2) Ratio of unemployed to the economically active.

3) Official registered enterprises.

4) Based on cumulated USD and converted using the ECB EUR/USD average foreign exchange reference rate.

5) Cumulation starting January and ending December each year.

6) Calculated from USD to NCU to EUR using the official average exchange rate.

7) Adjusted for domestic and foreign (US resp. EU) inflation. Values less than 100 mean real appreciation.

8) Deflated with annual PPI.

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