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### **Capital Formation in Post-socialist Countries**

**Jacek Tomkiewicz**

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Research Assistant and Lecturer, TIGER, Leon Koźmiński Academy of Entrepreneurship and Management (WSPiZ), ul. Jagiellońska 59, 03-301 Warsaw. E-mail: [tomkiewj@tiger.edu.pl](mailto:tomkiewj@tiger.edu.pl);  
homepage: <http://www.tiger.edu.pl>

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## **Capital Formation in Post-socialist Countries**

### **Summary**

Process of economic transition influences every aspect of economy. Capital formation process in post-socialist countries is very interesting. I check what are the determinants of level of investments during the transition process. I found that despite of high level of accumulation in socialist economies, capital production was not able to deliver level and structure of production which was demanded in market oriented economy.

## **Introduction**

The change of economic and social systems in the countries of central and eastern Europe had serious consequences to many branches of life, especially to economy. The main characteristic of centrally planned economy was that production decisions, so also the level and structure of production capital were made not on the basis of market mechanism, but according to imposed economic plans. What was produced, where, and in what amount depended on the decision of the government, sometimes not national, but overnational. Thus, the level and structure of production capital was a consequence of political decisions, and not a response to the demand for certain goods in a given amount and place. During the transition, the condition of existing capital was subject to verification. On the one hand, the demand, and not political decisions started to determine the quantity and structure of production, and on the other hand, suddenly producers had to face the fight for the market with foreign competitors. Does the level and structure of production capital in post-socialist countries meet the demands of market economy and international competition? Does the transition process force changes in the processes of capital formation? How do the processes of capital formation proceed in post-socialist countries nowadays, after over thirteen years? I am going to analyze in details the situation in three post-socialist countries (Poland, the Czech Republic and Hungary) in detail, trying to find some common characteristics of capital formation in these transition countries.

## Level of savings in first years of economic transition

The investments and savings levels in relation to GDP in post-socialist countries were relatively high (fig. 1,2,3). However, the fast pace of capital formation did not result in socially demanded production structure, which caused the shortage problem in socialist economies. The transition shock consisting in releasing most of the prices resulted in sudden acceleration of inflation, which was a consequence of an imbalance between demand and supply. It turned out that the high level of investments financed by national savings is impossible to maintain in the transition to market economy. In the face of availability of goods previously in short supply, the national savings sharply collapsed.

Savings rates							
Year, country	1989	1990	1991	1992	1993	1994	1995
<b>Poland</b>	42,7	32,8	18	16,7	16,5	16,9	18,3
<b>Czech Rep.</b>	30,6	29,9	36,8	27,4	20,2	20,1	20,2
<b>Hungary</b>	29,9	28	18,7	14,9	11,2	15	18,9
<b>Average</b>	34,4	30,2	24,5	19,7	16,0	17,3	19,1

Source: Denizer and Wolf (2000)

Denizer and Wolf (2000) point at three fundamental causes of the savings collapse in transition economies.

- The change in savings determinants – during the transition from a plan to a market economy many factors which influence propensity for saving are subject to substantial change. We deal with system changes, such as reducing the role of the state in social activity (financing education, medical system, social insurance system) which theoretically should increase propensity for saving, since in the situation when the state cannot guarantee appropriate level of social services as it did before, additional savings should be kept in order to finance the access to the service if need be. On the other hand, the need to finance the services, which were previously ensured by the state, increases current expenses, thus reducing the possibility of saving.
- The change in liquidity preference level – in a system of shortage the society was forced to maintain additional liquid capital, so that in a case of unexpected access to previously unavailable goods, it could finance the purchase without a problem. After the transition from a shortage economy to full availability of goods, the

necessity to keep additional liquidity disappears, and as a result, savings are reduced.

- The elimination of involuntary savings – in the case of shortage of many goods and services considerable amount of savings is forced by the lack of purchase possibility. When there is greater availability of all needed goods, the excessive savings sharply decline.

In my opinion, to the three reasons we should add the consequences of the transition recession, which influenced the possibility of saving in a significantly negative way. A collapse of economic activity level, an appearance of unemployment, a phenomenon new for socialist economies, had to have an impact on the society's income, the reduction of which caused the savings collapse. In Poland, for example, recession combined with hiperinflation led to the reduction of real salary of about one third (Kolodko, 1999:109) – such a high decline in current income had to result in savings collapse in economy.

The savings collapse in transition countries draws our attention to the impact of the collapse on developmental possibilities of post-socialist economies. Some claim that the savings level (United Nations 1984) can serve as a *proxy*, determining the level of economic development in a country – the savings rate is much higher in developed countries than in developing ones. Rodrik (1998) shows that countries of economic success, such as Japan, South Korea, Taiwan or Chile, which caught up with developed countries, observed transition from low savings rates to high savings level. As a result, a high pace of investments made catching – up possible. Does the fact of the savings collapse make post-socialist countries similar to developing ones, and as a consequence, should the transition countries use developmental strategies proposed to developing countries? In my opinion, the answer to the question should be negative. The low savings level in under-developed countries stems from some fundamental reasons, such as the very low level of national income or a lack of a developed financial system. Post-socialist countries cope with similar problems, but their range is much smaller. Besides, we should remember that in transition economies we observe not the fundamentally low savings level, but their collapse as a result of the transition shock, so in principle the situation is quite different from the one in the poor countries of Africa or Asia. After a great decline at the beginning of the transition, the savings rate in post-socialist economies increased and now it is running at an average world level (IMF 2002). Still, we must remember that if countries of eastern and central Europe want to catch up with developed economies (for example, with the European Union, which will accept several post-

socialist countries soon), they must make attempts to modernize their economies. This demands high investments level financed by high national savings.

### **Investments in Poland, Hungary and the Czech Republic in the 1990s.**

In the first years of transition the deep macroeconomic imbalance put off foreign investors from post-socialist countries. The shortage of domestic savings could not be replaced by foreign savings, which had to cause a decrease in the pace of investments, both in relation to GDP and in absolute levels. Taking into account the fact that a decrease in GDP and in a relation between investments and GDP took place at the same time, the decline in the pace of capital formation (fig. 4, 5 and 6) was very deep. In relation to 1989, the investments level declined by 15 % in Poland, 19% in Hungary and 20% in the Czech Republic. Apart from the decline in consumption, connected with the transition depression (in comparison to 1989: 22% in Poland, 10% in Hungary and 24% in the Czech Republic) which meant smaller demand discouraging to enhance the production base, investment decisions of companies were affected also by some factors related to the transition from a plan to a market. Among the factors having negative influence on propensity for investments, Buiter, Lago and Rey (1998) mention:

- macroeconomic instability, understood mainly as high and unpredictable inflation,
- imposing tough budget limits on companies overnight,
- failure of financial system, stemming from capital shortage (domestic savings collapse) and the lack of abilities to participate in the market system.

It is worth mentioning that the industry production level (fig. 4, 5 and 6) is much lower than the decline in GDP and investments at the same time. The decline in industry production lower than in GDP means that the GDP structure was adjusted. It turned out that in post-socialist system the industry production did not meet social needs. If GDP declines more slowly than production, it means that GDP structure changes, a share of services in GDP increases at the expense of trade. After a period of decline, GDP and industry production increase in similar pace, so GDP structure stabilized at a new level. Hungary is an exception, because since 1993 industry production has increased faster than GDP, which is a consequence of constantly growing share of trade in Hungary's GDP (21,3% in 1993 and 26,5% in 2000).

Another interesting situation is the relation between the decline in consumption and the decrease in industry production. In all three countries production declined lower than

consumption (Poland 22% and 30%, Hungary 10% and 34%, the Czech Republic 24% and 35%) which means that the change in the structure of GDP and replacing domestic production with foreign one – in all the countries in the first years of transition import declines more slowly than trade production.

Production decline below the consumption level may show that the production capital does not meet the demand for consumption goods. It is worth analyzing the behavior of such figures as production, investments and consumption in the period of economic growth. After the decline in all figures (consumption, investments, industry production and GDP), the economy enters the period of growth. The analysis of the relation between paces of change in consumption, investments, industry production and GDP can bring the answer to the question if the production capital taken after plan economy and verified in the transition recession is able to satisfy the level and structure of demand. Whether the economy is able to react to growing consumption with or without capital expenditures shows whether the existing production capital can meet growing consumption demand.

A fact that production capital did not fit market demands in post-socialist countries can be proven by the relation of capital expenditure decline to trade production decline in the period of transition recession. Let us notice (fig. 4, 5 and 6) that production in the first years of transition declines much lower than capital expenditures. Since production declines, it would be justified for capital expenditures to decrease, because declining production does not demand expenditures on investments (increasing production capital). Also, the declining production does not let us cover capital expenditures by future revenues. However, it did not come true, which must stem from the fact that the existing production capital was not able to provide appropriate amount and structure of goods, and they attempted to modify it already in the period of recession (by investments), so investments level declined in relation to 1989, but much less than production level.

Another argument for the thesis that the production capital in socialist countries was not able to meet social demand for goods is a situation, when after the transition recession, investments, industry production and GDP start to grow at the same time. If production capital fit market economy, we could expect that after the period of consumption decline (and as a result, production), companies have free production capital, being a consequence of production decline, so after growing tendency of consumption they can increase production with hardly any investments, using existing production capital. It did not happen like that – production increase is accompanied by increasing capital expenditures from the very

beginning, which shows that existing capital did not meet the demands of market economy and expenditures needed to be increased to modify and develop it.

For the analysis of the problem of adjusting production capital to free market demand, I decided to use Keynes' acceleration model. According to this model, growing consumption should bring about adequately higher level of investments growth (the relation of consumption growth to investments growth equals the index: *capital ratio output* ), and if existing production capital is able to satisfy growing consumption, economy is able to react to the growth without investments, or investments acceleration will be much lower than capital ratio output. Precise estimation of capital ratio output for the whole economy is very difficult. Specific difficulties appear in the analysis of the index in unstable post-socialist economies, where the existence of many market niches. In my opinion, we can put forward a theory that the stronger investments react to consumption growth, the less production capital meet market demand, so the accelerator volume reflects the adequacy of existing production capital to market demand.

The very first look at the emergence of consumption and investment dynamics (fig. 7,8,9) in Poland, Hungary and the Czech Republic lets us notice that the two rates are strongly correlated. Estimations prove that, as the correlation rates ( change in consumption – change in investments) amount to: 0,74 for Poland; 0,67 for Hungary; 0,73 for the Czech Republic 0,73. So high the correlation of consumption and investments proves that the market mechanism in the economy started to function properly – changes in investments level (development and modernization of production capital) are determined by market factors, such as undoubtedly consumption demand.

The attempt to estimate the acceleration rate in the economies of Poland, Hungary and the Czech republic is not easy methodologically, because in those countries the process of transformation proceeded in a different way in respect of consumption and investments dynamics. As the beginning of time series used for estimation of the relation between investments and savings I have taken the first year in which we observed consumption growth. In my opinion the assumption is correct – in this way we can check how the economy reacts to growing demand after the period of production and consumption collapse. Only in one of the three countries (fig. 7, 8 and 9), that is in Poland, consumption was growing from the first year (for Poland it is 1992), and the next years brought constantly growing private consumption. In the Czech Republic, as well as in Hungary, from 1992 in certain years private consumption was declining in relation to the previous year. The existence of years of consumption collapse, connected with the very short time series we have at our disposal,



causes great disturbances in the final result of estimating investment reaction to growing consumption. However, it is unacceptable to assume that for the estimation of trend inclination we should take into account only years of growing consumption. First, it would shorten our short time series. Second, it is difficult to justify the fact of 'removing' a few years from the trend only because they do not comply with our theoretical assumptions.

The theory saying that production capital in post socialist countries did not fit market system, works best in Poland. The consumption and production collapse in the first years let us believe that with growing consumption the economy would use spare production capital, so increase in production does not need to take place by means of raising production capital. The analysis of regression (change in consumption vs. change in investments) brings interesting results (fig.10). The inclination of regression line is positive and amounts to 3,5; which means that every consumption growth of 1% in 1992-2001 meant average growth in investments of over 3,5%. Such an observation proves functioning of accelerator conception in Polish economy of the 90s, which means that in Polish economy investment processes had to take place to meet market consumption demand.

The situation is much more difficult to interpret in the case of The Czech Republic. In those countries, the inclination of regression line is positive, but below 1 (0,96 in the Czech Republic and 0,65 in Hungary – fig. 11 and 12), which means that the reaction of investment change to consumption change in Czech and Hungarian economy is less than proportional. However, the appearance of consumption collapse in the 90s changes the inclination of trend line. Taking this fact into consideration we can claim that the reaction of investments to consumption growth in the Czech Republic and Hungary is stronger than it follows from the inclination of trend line. To sum up, the analysis of relation between consumption change and investments change in the economies of The Czech Republic and Hungary does not let us draw clear conclusions for Polish economy. However, in my opinion we can conclude that also here (although to a smaller extent than in Poland) adjustment of volume and structure of production had to take place by investments.

Figures - source: author's preparation

Figure 1. Poland - capital formation in % of GDP

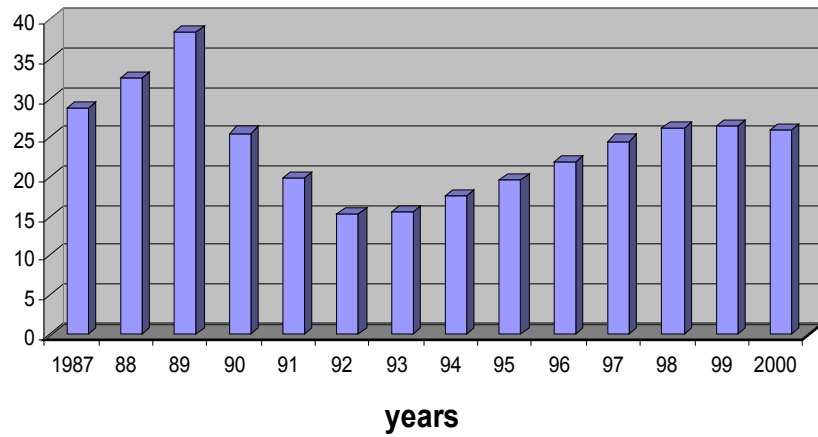


Figure 2. Hungary - capital formation in % of GDP

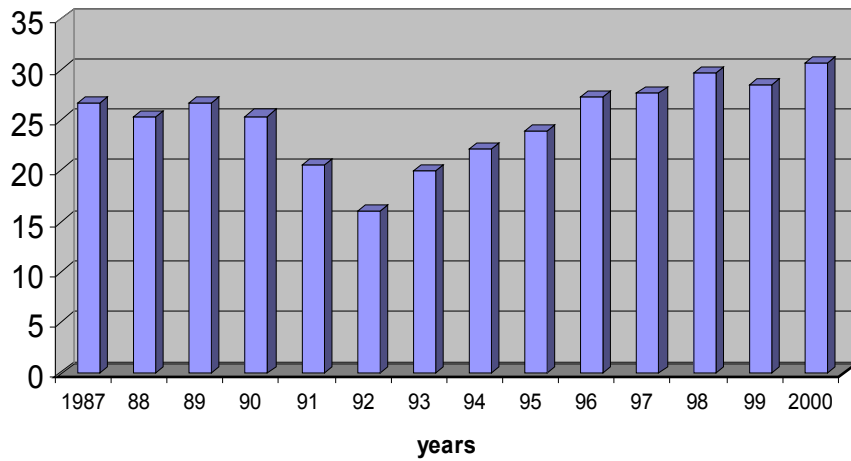
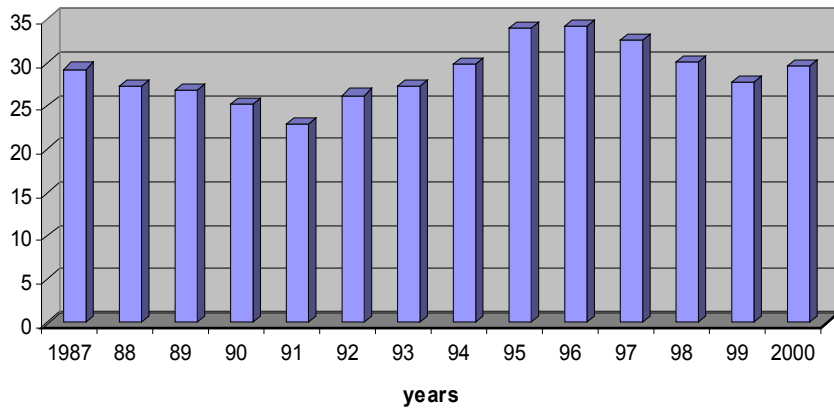
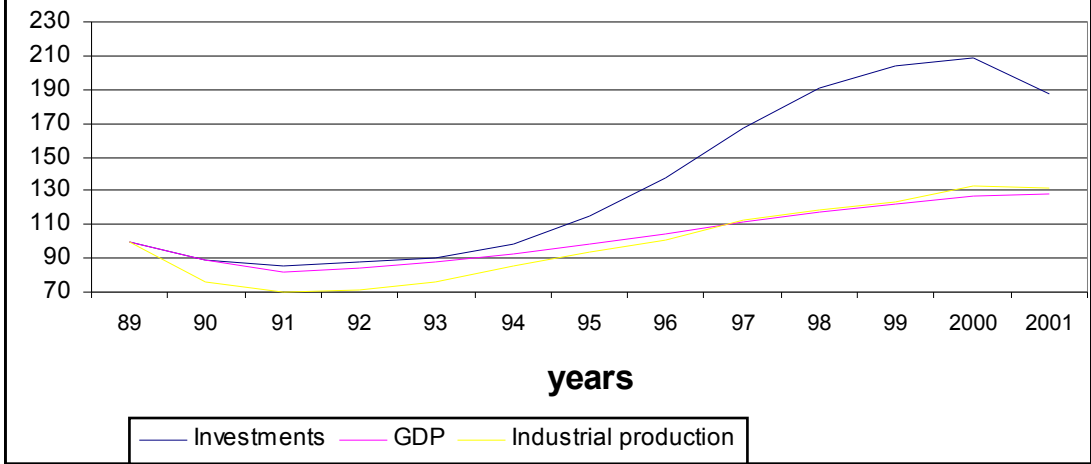


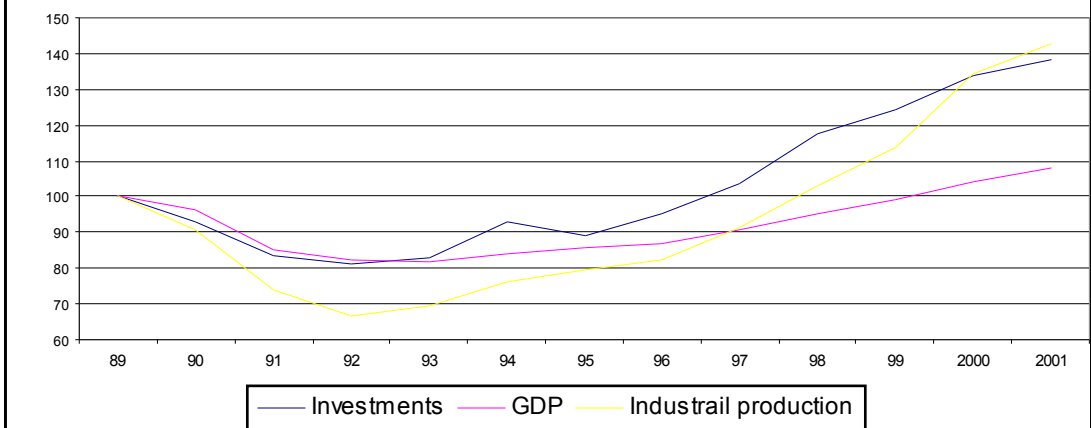
Figure 3. Czech Rep. - capital formation in % of GDP



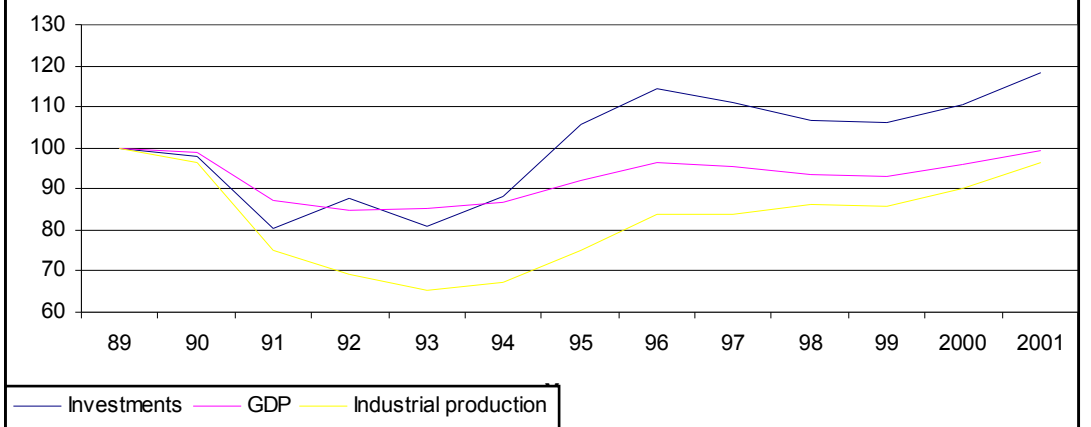
**Figure 4. Poland - GDP, production and investments (year 1989=100)**



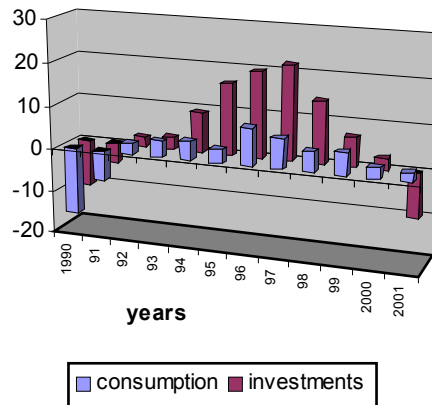
**Figure 5. Hungary GDP, production and investment (year 1989=100)**



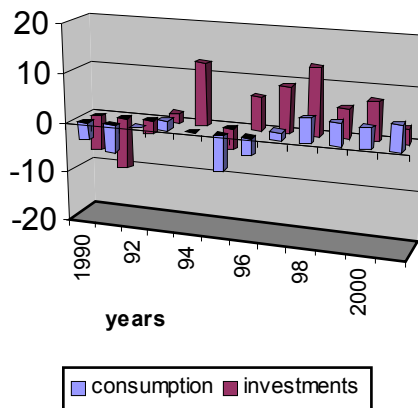
**Figure 6. Czech Rep. - GDP, production and investments (year 1989=100)**



**Figure 7. Poland - changes in consumption and investments (in %)**



**Figure 8. Hungary - changes in consumption and investments (in %)**



**Figure 9. Czech Rep. - changes in consumption and investments (in %)**

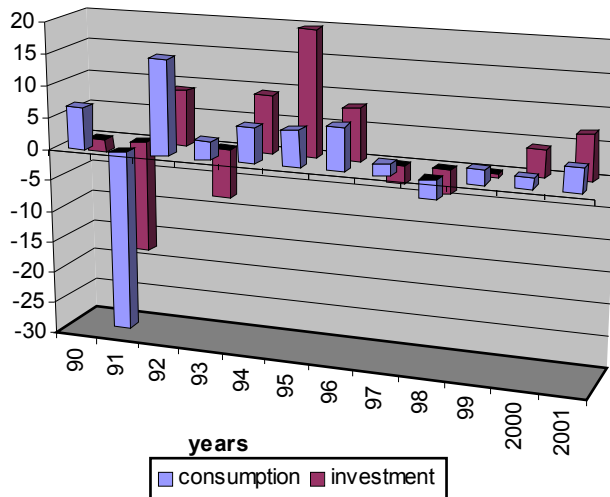


Figure 10. Poland - consumption and investments in years 1992-2001

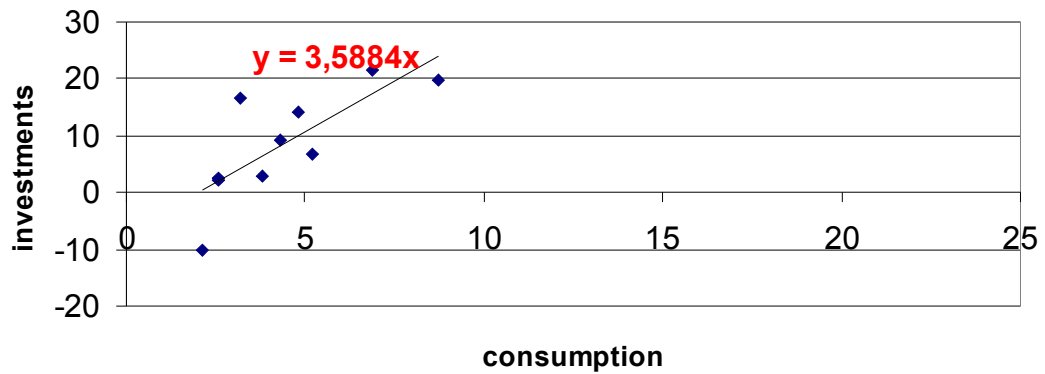


Figure 11. Hungary - consumption and investments in years 1993 - 2001

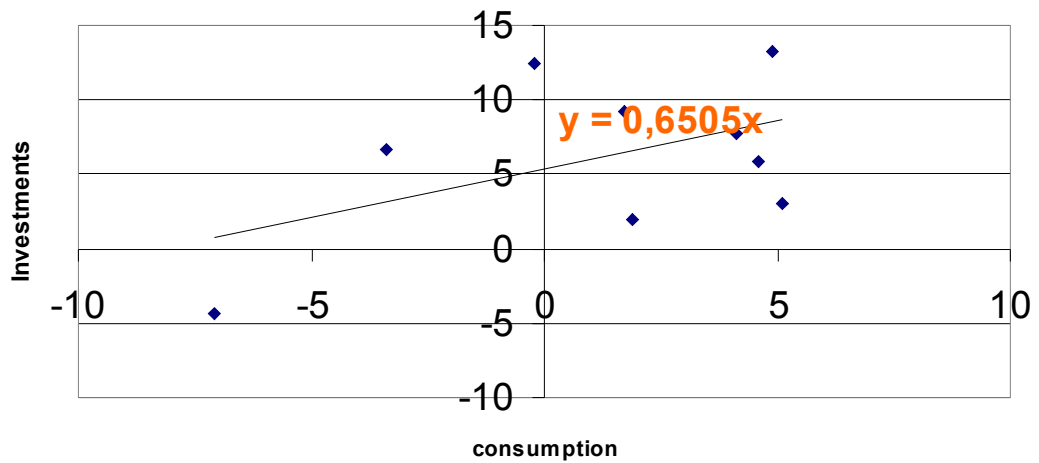
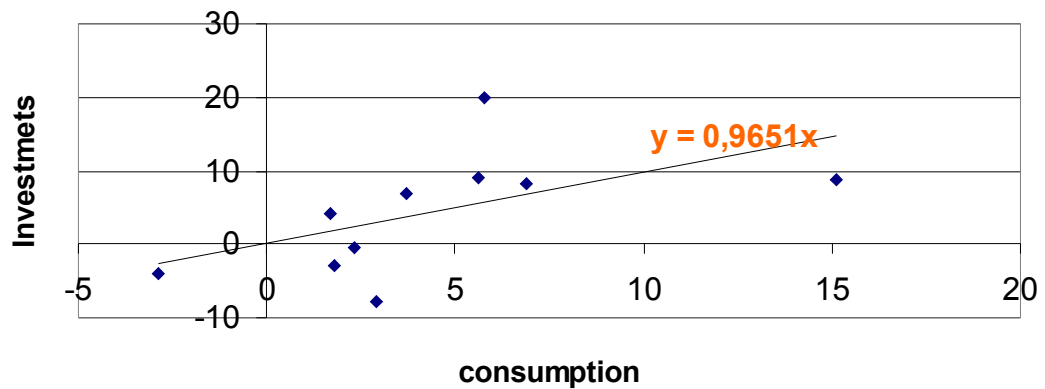


Figure 12. Czech Rep. - consumption and investments in years 1992-2001



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