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## **Catching up of the Tajik and the Central Asian Economies by Investment and Export-Driven Development**

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## ABSTRACT

Three countries of Central Asia, which are not sufficiently endowed with exportable natural resources – Tajikistan, Kyrgyzstan and Uzbekistan – perform at approximately 50% of their potential of GDP per capita. Filling this gap by working at their full capacity can be achieved within approximately 10 years, provided some intermediate steps in economic policies of the countries in this region. In the very long run (approximately 20 years) their economic potential can be enhanced even further by growing faster than the medium-income developing countries, i.e. by growing at a growth differential of approximately 3% (i.e. at a growth rate of 6-7% instead of 3-4%).

The weak chain in the development in these economies rests in insufficient trading with neighbouring regions within the reach of 1200 km in diameter.

The mentioned countries should proceed intensively in the following policies:

- a) dismantling the constraints to their institutional setup, in order to enhance the functioning of market economies, and set right the incentives to private entrepreneurship;
- b) progress further with market reforms (e.g. in taxation, State capture, labour contracts, investments, deregulation);
- c) unleash the constraints on their aggregate demand by promoting free trade and capital inflows.

The promotion of domestic savings and capital inflows should be done by complete restructuring of commercial banking, preferably by its complete privatisation by well capital-endowed renowned foreign owners. The dismantling of all impediments to trade between the countries of Central Asia should be done by establishing customs union and associating it with large neighbours (Russia, China, Iran, and Turkey) via free trade area. Re-vamping thoroughly the whole transport infrastructure between these countries and minimising (if not completely eliminating) the bureaucratic administrative burdens of transiting and customs clearance.

The proposed qualitative re-orientation of policies depends essentially on how the necessary domestic changes in individual countries are coordinated with a collective action within international agreements on integration and free movement of trade and capital.

Key words: Locational geopolitics; exports and imports; investments; undervalued exchange rate; economic growth.

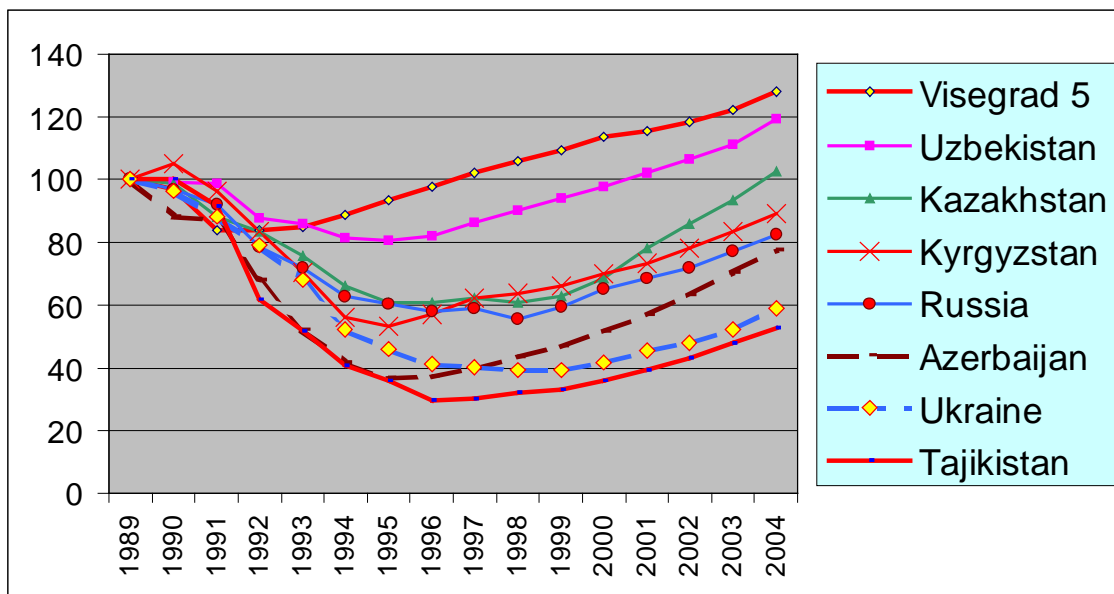
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## A. General Geopolitical and Strategic Considerations about a Fast Growth in the Region

The aim of this paper is to provide an empirical evidence for the statement that the present economic level of some countries in Central Asia, as measured by the indicators based on GDP, is extraordinarily low, lying below the potential of these countries given by their endowment of labour, skills, human capital and the history of development in the times of Soviet industrialisation. The problem rests in a substantial decline in their output and a slow recovery. A large part of the decline in their economic performance could be explained by the initial losses in aggregate demand of both the domestic and the foreign origin. The known trajectory of a J-curve should apply here, as it was in all transition countries in Europe.

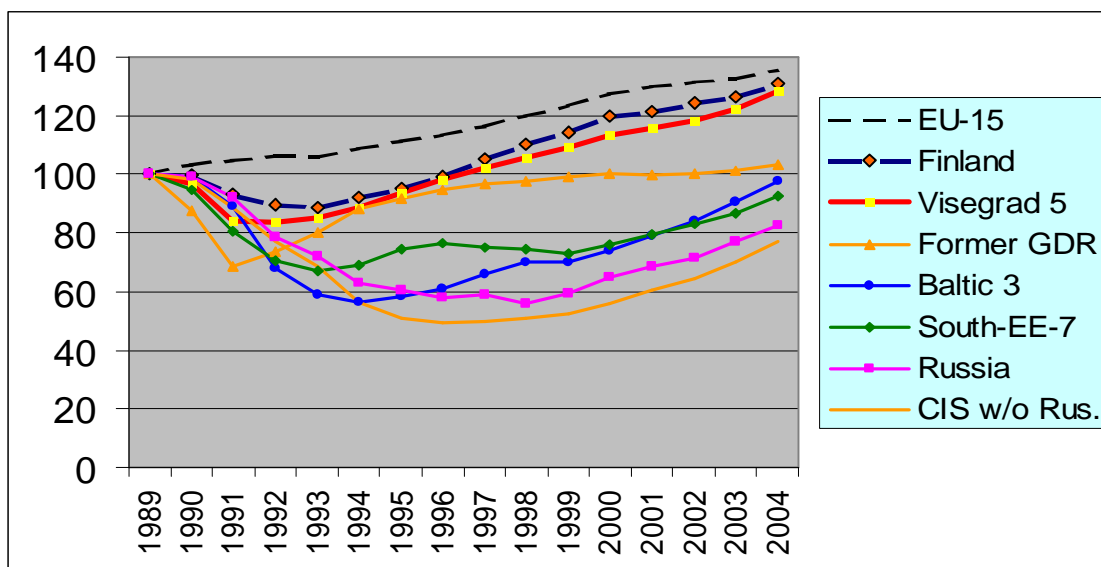
Figure 1 shows how varied the depth of the losses was in individual countries of the five CIS (Commonwealth of Independent States) countries in Central Asia. We can compare their development with a similar graph for transition countries in Central, Baltic and South-East Europe (see Figure 2). We can see that the initial loss in output was by far lowest in the Visegrad-5 (Poland, Czechia, Slovakia, Hungary and Slovenia). Their performance is particularly impressive if compared with the weak growth dynamics in former Eastern Germany (GDR) <sup>1</sup> or with the highly efficient Finland – the European champion in competitiveness.



**Figure 1: The trajectories of growth in the GDP in domestic constant prices of selected transition countries of former Soviet Union.**

Source: UN ECE, Geneva, Economic Survey of Europe, no. 2, 2005, p. 70

<sup>1</sup> According to Sinn and Westerman, 2001, the transition in former Eastern Germany cost the German society astronomic 700 billion euros in transfers and subsidies during the first 10 years only. The total of transfers until 2006 is estimated over 1000 billion euros.



**Figure 2: The comparison of growth trends in the GDP in domestic constant prices of the CIS (Commonwealth of Independent States) countries and transition countries in Central, Baltic and South-East Europe.**

Source: UN ECE, Geneva, Economic Survey of Europe, no. 2, 2005, p. 50 and 70

Just fifteen years after the inception of transition in communist countries, János Kornai (2005) came with a path breaking interdisciplinary assessment of the transformation record in eight new EU countries of Central Europe and described it as an overwhelming success due to their general non-violence, incredible speed, democracy and complexity. He described it as an unparalleled great transformation, unique in the world history. The most important factor of such changes was found in the communication with international environment, starting from learning by doing in being inspired by foreign practices and institutions, through very intensive trade with the EU countries and finishing with the presence of foreign investors and managers. The crucial catalyst of such painful socio-economic changes was found in the competition among these countries, mutual comparison of their policies and the feeling of common inter-dependence resulting in their collective action vis-à-vis the challenges coming from the globalised world. A similar view was presented in Benáček (2005).

The evolution in the remaining transition countries from the former Soviet Union (maybe with the exception of Russia) lacked such incentives and their development was significantly less persuasive. It is the aim of this paper to use the experiences of Central European countries for transfiguring them to recommendations helping the Central Asian countries in their own reforms. All of them deal with external relations at the level of official economic coordination (e.g. integration blocks), competition and cooperation among enterprises, and contacts among citizens.

We can therefore presume that the degree of decline, the length of recovery under stagnation and the rate of revived growth depends to a large extent on institutional measures undertaken by reforming governments and on the competition and incentives that drives economic agents in choosing between the short and the long-run gains, and/or between the motives to create new wealth versus indulge in asset-stripping redistributive activities. Taken from these points of view, the relative performance in 2004 that revealed wide differences among countries, could be explained not only by different strategies and policies undertaken

in individual countries, but also by their ability to act collectively, to compete and to coordinate their strategies. Nevertheless, there should be also considered how the development and the choice of strategies depended on objectively given circumstances, such as different factor endowments of the countries (e.g. the endowments with natural resources such as oil and gas, contrasted with endowments in simple labour only) and the ease to access large developed markets by trading, which could support the weak domestic aggregate demand by their steadily growing import requirements.

At this opportunity, there could be raised a question about the suitability and the methodological consistence of macroeconomic statistics. The figures of GDP per capita may not represent the true economic situation of the society. Thus we should be aware that the criterial indicator of development, the GDP, could distort the criteria for the very objective of this study - to assess the long-term economic development. Firstly, there could be wide differences between the GDP at PPS and the GDP at commercial exchange rate. Secondly, the distribution of GDP among population can be grossly unequal in some countries, resulting in a bias given by the average values of GDP per capita. Thirdly, the GDP need not be correlated with the welfare measured by human development index or by the GDP adjusted to shadow economy, hidden foreign income and self-sustained farming.

Last but not least, the success (or failure) in economic transition, as measured by human welfare, is not easy to measure by mere differences in official growth figures during transition. For example, Uzbekistan, Kazakhstan, Kyrgyzstan and Tajikistan were standing at approximately comparable level of development in 1989 (according to Soviet statistics), meanwhile in 2004 their GDP per capita and growth rates differed widely. At least the relative standing of Kyrgyzstan, if compared to Tajikistan in 2004, could be explained by more successful reforms and civil stability (e.g. no civil war) in Kyrgyzstan, but the comparison of Kazakhstan and Uzbekistan fails since a much smoother and elevated path of Uzbekistan (according to their own growth data and data published by UN ECE (2005)) resulted in a paradox: in reality there was a highly superior position of Kazakhstan in 2004 with its \$ 7418 of the GDP per capita in PPS (purchasing power standard), versus mere \$ 1934 achieved by Uzbekistan<sup>2</sup>.

Therefore our important starting caveat is that official data of the GDP growth cannot be taken at their face value as a unique reliable indicator of development. This is a paradox of transition countries found also in Central European countries, as analysed by Benacek, 2005. By considering the methodology outlined by Kohli (2004), it could be found that the GDP growth rates, estimated officially in compliance with the methodology of IMF and the UN generally underestimated the effective growth rates of transition countries; in some cases it was less than a half. There were also serious problems in assessing the GDP deflators if the production went through a deep qualitative upgrading of the quality of output. The overshooting of deflators might also significantly downgrade the estimated growth of GDP. According to Hanousek and Filer (2004), in some cases the underestimation of growth can be for a long period and by more than a half.

In addition to the previous, the methodology used by central planners usually overestimated their GDP figures in PPS, which exaggerated the fall in the GDP after

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<sup>2</sup> *All data about the GDP in purchasing power standards (PPS) or in nominal values converted at national commercial exchange rates (CER) of 2004 used in this paper are from the Statistics of the World Bank Development Report (see World Bank (2006)) and are related to year 2004. The figures of GDP growth rates are from Economic Surveys of Europe, as published by Economic Commission for Europe, United Nations, Geneva, e.g. UN ECE (2004).*

commencing with transition. The width and the depth of market reforms and their multicriterial assessment, as characterised by country studies by the World Bank, IMF or United Nations (see e.g. UN DP, 2005, as an example), offers therefore a better approach to estimating the growth than official GDP figures. We could even presume that highly amalgamated indicators, such as the indices of economic freedom, may also offer a more objective assessment of economic long-term achievements than mere officially declared figures of the GDP per capita. Similarly, there should be considered the problem of equity. For example, if Kazakhstan has higher GDP per capita than Kyrgyzstan, does it have lower poverty? Economic success assessed by the GDP per capita can conceal the quantity of people who benefited from it.

Let us return again to the hypothesis that the path of transition and the choice of strategies for restructuring depend significantly on the exogenously given factor endowments. It is especially so if the endowments, which matter most, are in easily marketable natural resources underpinned, in addition, by their rising world prices<sup>3</sup>. A country rich in oil and gas can perform better than country lacking such resources even though the former was not undergoing privatisation sufficiently and its economy is not successful in trading with remaining commodities. That can be the case of comparing unreformed but (relatively) prosperous Turkmenistan with plodding and reforming Kyrgyzstan. However, the comparison of three natural resource rich countries – Kazakhstan, Turkmenistan and Azerbaijan – gives the primacy to the intensively reforming Kazakhstanis. Any visitor of these countries would agree that the institutional arrangement and the entrepreneurial animal spirits in Kazakhstan confirm its lead over the other two, as shown in the GDP per capita.

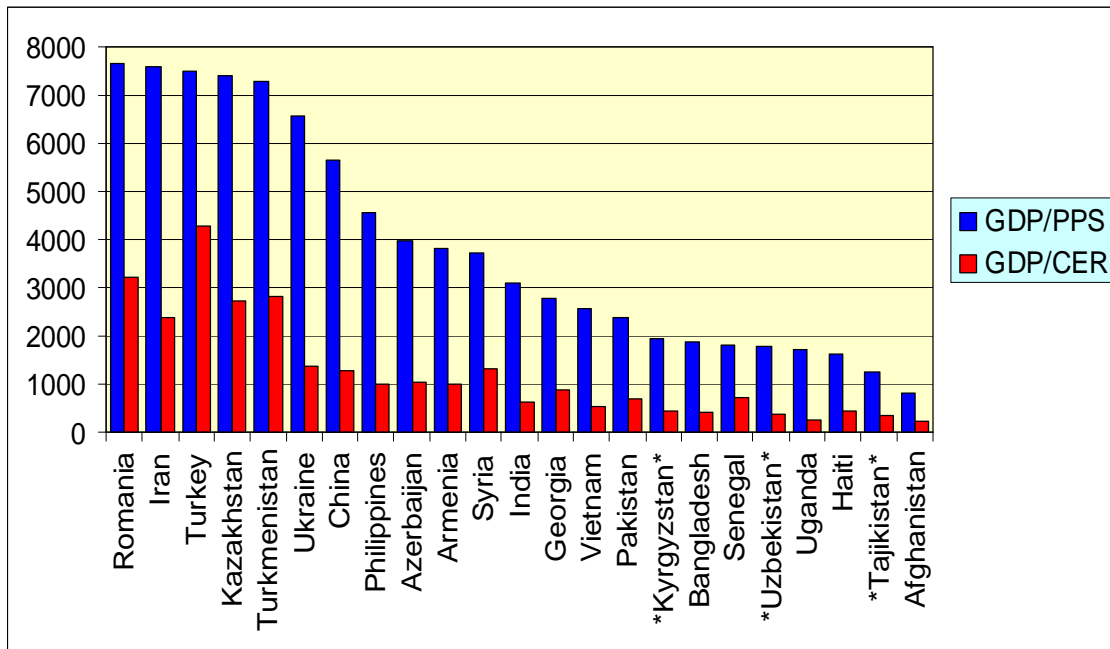
We shall look again more closely at the progress done during 15 years of transition and compare the development of countries in Central Asia with other countries in the world (see Figure 3). The anomalies between them will be revealed in even greater paradoxes. The development in Kazakhstan is at par with such countries as Turkey, Romania, Turkmenistan or Iran, if the PPS measure of GDP is applied (all around \$ 7500 per capita). However, the GDP per capita at commercial exchange rate signals that Turkey is a country much better adjusted to the world trade than the other four. The exchange rate of Turkey is by 58% stronger than the exchange rate in Kazakhstan. Even Romania, which does not have an advantage of being an exporter of energy and the greatest laggard among the EU accession countries, has a stronger exchange rate by 18%. Nevertheless that, Kazakhstan is still performing as a top star among the Central Asian reforming and natural rich countries. That means there are other countries of the region, which lag far behind Kazakhstan, even though their starting position in 1990 did not look much different. Our main concern will be therefore these poorer countries of the region.

If we rank the CIS countries of the Central Asian region by the GDP per capita, we can see that there are three of them, which lag quite significantly behind others: Tajikistan, Kyrgyzstan and Uzbekistan (we shall call them CA-3). At the same time the average of all

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<sup>3</sup> *Throughout this paper we will refer often to the importance (or the advantage) of having rich endowments with natural resources. We will refer only to those natural resources, which were subject to increasing terms of trade relative to manufacturing in the last 10 years and which had no constraints in their imports by OECD countries. We could see that such list was rather limited. Its main items were oil, gas, copper and other non-ferrous metals – all of them are capital-intensive products. We should therefore exclude from the list of "rich endowment in natural resources" practically all agricultural products, the prices of which were stagnating or falling, their exports were limited by quotas and the production of which was labour-intensive.*

nine CIS countries enlisted in Figure 3 is also exceedingly low, if compared with their past record as members of the Soviet Union – a former industrial superpower. The average GDP per capita of these nine countries without Ukraine at \$ 3870 trails far behind that of Russia (\$ 10180) that had serious growth problems throughout 1990-1998. The GDP level of the mentioned three poorest countries of the region is approximately similar to that of Senegal, Uganda, Mozambique, Bangladesh or Cambodia that are considered to be rather very poor.



**Figure 3: Ranking of the GDP per capita at purchasing power standard (PPS) and commercial exchange rate (CER)**

There are hardly any reasons why Tajikistan, Uzbekistan or Kyrgyzstan, with their GDP per capita at PPS for 2004 being \$ 1246, \$ 1766, and \$ 1934 respectively, should not be as wealthy countries as is the Eastern undeveloped part of Turkey (\$ 3680 per capita), India (\$ 3080), Indonesia (\$ 3703), Syria (\$ 3724), Sri-Lanka (\$ 3882), or even Perú (\$ 5560) or Philippines (\$ 4561). We could also compare them with Ukraine (\$ 6554) – a relatively much richer country plagued by a low intensity of reforms, high corruption and an unsatisfactory performance of its international trade. All these are also countries without rich natural resources and with a large part of the population relying on agriculture.

The situation looks even more dismal if the GDP per capita is calculated in nominal dollars, i.e. at commercial (market) exchange rate (CER). We should understand that the GDP at CER does not say very much about the standards of living (like the GDP at PPS), but it reflects more closely the international competitiveness of its products. Namely it is concerns both the exports and the domestic products competing with imports, as well as the whole domestic economy as seen from the position of foreign investors. If the competitiveness of tradables of some country is low and if its inflows of foreign direct investment (FDI) are weak, so is also the exchange rate of that economy. It must be undervalued in order to compensate for the weaknesses. The country is then poor "externally" – i.e. in its relationship to the potential of gains from taking part in exchanges with the globalised world economy.

The figures of GDP at CER are \$ 329 for Tajikistan, \$ 375 for Uzbekistan and \$ 433 for Kyrgyzstan, lagging far behind Romania (\$ 3207), Albania (\$ 2154) or Georgia (\$ 883), whose endowments of human capital are not significantly different and which also cannot rely on natural resources. We have selected as convergence targets Pakistan (\$ 684) and Senegal (\$ 734), as two developing countries closest with their GDP at CER per capita to Tajikistan. The catching-up with them should be the easiest for all CA-3.

However, there is one important aspect of their development if we compare Tajikistan or Kyrgyzstan with eastern Turkey, Syria, Morocco, Guatemala, Peru, Dominican Republic, Sri Lanka or Philippines, all of which have the GDP per capita at CER over \$ 1000, i.e. two to four times higher. Both Tajikistan and Kyrgyzstan have, relative to them, a highly educated labour, skilled from the days of communism in sophisticated branches of industries and in the operation of technologically advanced instruments (e.g. in healthcare, agriculture or army), including their production. The rate of illiteracy in Tajikistan and Kyrgyzstan is 2-3%, meanwhile in Eastern Turkey it is 26%. The countries mentioned above in this paragraph are the "potential target countries", the catching-up with which the three poorest economies in Central Asia should concentrate. Even though we could expect that the geographic disadvantage, which CA-3 have in comparison with countries located at sea shores, could represent a "discount factor" slowing down the catching-up by a factor of 1-1,5%, the process of convergence to the level of countries with around \$ 700-800 per capita at CER in 2004 (i.e. Pakistan, Senegal or Nicaragua, which have the income per capita at CER 2-2.5 higher than Tajikistan with its \$ 329) could be achieved. As we will argue later in chapter B, such target could be gained within approximately 11-12 years of restructuring<sup>4</sup>.

An even more paradox situation arises if we compare the literacy in Tajikistan and Kyrgyzstan with some countries of Africa or Asia that have a comparable or even higher GDP per capita, such as Senegal, Uganda, Mozambique, Bangladesh or Cambodia. Also the attendance rate of secondary schools or universities is significantly higher in CA-3 than in those five just mentioned. Generally it is higher than in all countries in Africa or Asia with the GDP below \$ 8000 at CER. Catching-up in the GDP at CER means that the competitiveness of exportables and domestic import replacements should be significantly upgraded. As the Central European transition countries have shown (Benáček, 2005, or Benáček et al. 2005), the export-oriented approach to transformation is a highly successful strategy for accelerating the growth.

An even faster acceleration can be achieved if the policies of openness to trade are combined with openness to foreign capital. The resulting surplus in the financial account of the balance of payments raises the inflow of foreign exchange, which can be used for financing the deficit on current account and thus bring additional imports of needed technology or input material for upgrading domestic production. The upgraded domestic competitiveness (relative to mentioned "competitors") has a quick impact on the exchange rate, which appreciates. The GDP at CER then shifts upward by both the real growth in domestic currency and by the rate of appreciation. This is the scenario of growth in all Central European transition countries.

A different approach to catching-up arises if we look back at the GDP at PPS. Here the catching-up seems to be easier because the gap of our CA-3 countries behind their respective "target countries" is slightly smaller. Thus the CA-3 have to overcome a smaller relative gap. For example, meanwhile the trailing behind of Tajikistan relative to the GDP per capita at CER of Pakistan and Senegal was 52% and 55% respectively, the gap relative to the GDP at

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<sup>4</sup> We assumed the growth rates of 7% for Tajikistan and 3,4% for the compared countries, plus the exchange rate appreciation of 4% for Tajik somoni and 1% in compared countries.



PPS was 48% and 31% respectively). The reason is that Central Asian poorer countries without rich natural resources have an exceptionally highly undervalued exchange rate, which depresses the GDP at CER relative to the GDP at PPS. Nevertheless, even here we could expect a catching-up of Tajikistan, even though in a longer period. We could estimate its duration to 10 years with Senegal and 18 years with Pakistan<sup>5</sup>.

The reason for such a difference in convergence (compared with the above estimates for GDP at CER) rests again in the exchange rate, which in case of Pakistan is much more undervalued than in the case of Senegal. Pakistan does not have any single strong commodity that would dominate the export revenues as much as it is the tourism in Senegal. Therefore the marginal exchange rate in Senegal can be significantly more appreciated (relative to its GDP at PPS) than it is in Pakistan. Tourism, similarly like the endowments with oil and gas, can appreciate the equilibrium exchange rate that makes the country looking much wealthier when comparing its GDP per capita at CER. By the definition of PPS, the catching-up for the GDP in PPS cannot be boosted by the gains in exchange rate appreciation. It depends on the internal growth rates (7% for Tajikistan and 3,4% for Pakistan). At the same time the GDP in PPS in Pakistan is much higher than in Senegal and the catching-up with Pakistan at PPS takes longer and at much higher level of the GDP (\$ 4408 with Pakistan versus \$ 2576 with Senegal as estimated by our hypothetical simulation).

A rough estimate of the economic under-performance of our CA-3 countries is that they perform at 40% through 50% of their economic potential, provided we estimate their long-term potential GDP at \$ 2800-3900 (PPS in prices of 2004). An even higher performance, estimated at \$ 3500-4500, could be targeted if we would adjust their potential output by the level of education and human capital. Reaching the potential at the economic level of Syria, Egypt, Morocco or Philippines would not surpass their capacities, provided the small countries like Tajikistan and Kyrgyzstan would be able to emulate some of the lessons the Central European or Baltic countries learned during their hard, but finally very successful path to economic prosperity:

The economic catching-up in Tajikistan and Kyrgyzstan must not be impeded by constraints in their institutional setup. The priority should be given to the three pillars of transition:

- Progressing further with market reforms, namely with the support to the legal system underpinning the property rights, private initiative and the separation of the State from the liabilities of enterprises.
- The countries must free themselves from constraints in their low domestic aggregate demand by opening up to trade with highly dynamic and developed economies.
- The financial system should be open to supporting new businesses under the criterion of hard budget constraint from both sides: the internal one by promoting the creation of *de*

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<sup>5</sup> *The reason for such a difference in convergence (compared with the above estimates for GDP at CER) rests again in the exchange rate, which in case of Pakistan is much more undervalued than in the case of Senegal. Pakistan does not have any single strong commodity that would dominate the export revenues as much as it is the tourism in Senegal. Therefore the marginal exchange rate in Senegal can be significantly more appreciated (relative to its GDP at PPS) than it is in Pakistan. Tourism, similarly like the endowments with oil and gas, can appreciate the equilibrium exchange rate that makes the country looking much wealthier when comparing its GDP per capita at CER. As a result, the catching-up for the GDP in PPS cannot be boosted by the gains in exchange rate appreciation. At the same time the GDP in PPS in Pakistan is much higher than in Senegal and the catching-up with Pakistan at PPS takes longer and at much higher GDP level.*

*novo* firms (this generally means the rise of small and medium sized indigenous firms, including the self-employment) and the external one by promoting the incoming FDI (see Asadov and Benáček (2006)).

These three conditions are consistent with the tenets of development economics and they concern the restructuring of both the supply and the demand sides of the economy. The most important drawback stemming from the legacy of the system of economic central command is the lack of self-reliance and the dependence on upper echelons of hierarchies for decision-making. In accordance with the neo-institutional economics we presume that the most important driver of economic progress in capitalism is the **incentive to accumulate private property, which should be opened potentially to all** (i.e. not only to a thin layer of political cronies). The leeway for its achievement must be institutionalised by enforcing unrestrained private entrepreneurship engaged in productive activities.

This is an enormous difference in social environment if compared with the previous communist (or presently prevailing post-communist) approach to private “entrepreneurship” because the latter is concerned practically exclusively with the redistributive activities. Not surprisingly, asset stripping activities, dominance of bureaucracies over the activities of entrepreneurs, and the rule of oligarchs and large former state-owned corporations over the politics (including the so-called state capture) became either legal or at least widely tolerated ways of social governance.

A sophisticated network of social (relational) capital was created already under communism in order to align it with the officially existing network of productive chains commanded by hierarchical organisations of the Communist Party. Since practically all new structures of politics and power in post-Soviet countries are the vestiges of the previous (communist) social capital network, the new institutional incentive scheme cannot disregard their existence.

A paradox sub-optimal but acceptable second best solution to the development of market-based post-communist capitalism seems to be the solution of mentioned dilemma. Since the legacy of communist relational capital is an endowment that is valued most<sup>6</sup> by the post-communist elite (both political and entrepreneurial), it cannot be dissolved. The experience from even the most successful transition in Central European and Baltic countries (e.g. in Slovenia, Estonia or Czechia) shows that the embeddedness and path dependency of institutions, ethics, politics and ruling elite determine the crucial strategies in transition. Their elimination could be only partial and effected mainly in the later stages of transition. Thus the new system cannot do otherwise but engage the owners of relational capital into the newly created entrepreneurial networks. As the help of last resort, the new economic system should be tuned up by **opening it to all kinds of competition**.

There is a crucial point here, which rests in a government guarantee that the entries into businesses should be freely contestable and enforced by legislation, judiciary and criminal police. Breaking racketeering, mafian violence and corruption are the most difficult

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<sup>6</sup> *The value of any factor (financial capital, human capital, labour, natural resource) is given by its returns. In economic theory it is its marginal productivity resulting in getting a proportional share on GDP. The experience from CEEC reveals that the „ownership“ of relational (social) capital is a resource that can be at least as powerful in returns as the ownership of any alternative type of capital. In the early stages of transition (when the privatisation was the most important political issue) the access to this kind of „capital“ could become temporarily the absolutely most important asset, deciding about the access to dominant other assets in the future: to the ownership of natural resources or physical capital.*

steps to introduce. The government must be always stronger in exercising its force than any of the **alternative** hierarchical power groups, even at a cost of postponing democracy for some time.

The new institutional system should open such windows of opportunities in entrepreneurship that it would be worth while for the old-new apparatchik elite to introduce professional management to their property or to sell it to new and more efficient owners. **As the experience from the Central and the Baltic European countries has pointed, any transfers of property are not efficient without opening the economy to unimpeded trade and unimpeded capital transfers and to the challenges of takeovers of property rights.**

## **B. The Central Role of Opening Up to Trade and Finance and the Scenarios of Convergence**

Thus establishing the incentives to private ownership, privatization, property rights and entrepreneurship, the market reforms (such as downsizing of the State, trade without impediments, decrease in taxation capture, easy labour contracts, liberalisation of banking, product and investment deregulation, etc.) opens new avenues to a smooth functioning of the supply side. Then the problem still remains on the weak demand side. Stimulating the aggregate demand by government deficit spending is counter-productive. It leads to low restructuring, corruption, inflation, exchange rate instability, crowding-out of more efficient private activities, and a hike in demand for unproductive imports. Expansionary monetary policy could be more helpful, but if the banking sector is not managed by prudent foreign owners the result is again a pressure for low restructuring, corruption, indebtedness and bankruptcy. The expertise in Central and East European “tunnelling” (i.e. asset stripping) is the least recommendable experience from that part of the world.

Hard budget constraint in government spending, commercial banking and public enterprises are crucial institutional arrangements that keep the economy within the barriers of productive (i.e. non-redistributional) motivation. Opening-up of the economy to trade and finance is one of the guarantees that induce the producers to restructure by subjecting them to a **real competition**. The unremitting and irrevocable pressure of international markets is the only solution how to arrange, even in an environment of crony networks, that efficiency is the primary rule in the traded sectors. Unfortunately the non-traded sectors will still remain outside of such new drivers to growth. This would imply that approximately a half of the GDP is not produced under a relaxed pressure for efficiency and restructuring.

Export expansion not only in natural resource industries (oil, gas, ore, agriculture) but also in manufacturing, is practically the only feasible leeway for expanding the aggregate demand of countries in Central Asia in sufficient speed and intensity. However, this is subject to intensive changes in the policies of openness, liberalisation and entrepreneurship at the levels of both the national economy and an alliance of trading partners, as we discussed in the chapter A above. The following scenario will be calibrated at the situation in the CA-3. The growth in exports could be raised to as much as 20-25% per year<sup>7</sup>. That is a dramatic change

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<sup>7</sup> *Even though for many CIS countries the annual growth in exports above 25% is not an exception, only few of them could sustain it for 2000-04 (Kazakhstan, Azerbaijan, Turkmenistan). It is easy to guess that the reason were escalating prices of energy after 2000. Maintaining high growth rates of exports in manufacturing is more difficult. Nevertheless,*

for CA-3 because their average export growth in 2000-04 was 6,3%. With the starting openness of the economy at approximately 38% (measured as the share of exports on GDP), the boost in income from exports gives sufficient injection to aggregate demand for bringing the whole economy to a sustained growth around 7%. Increased exports are accompanied by a similar growth in imports.

Looking at the data of merchandise exports from transition countries more closely (UN ECE, 2006, Table B11), we can see that the period of 1995-1999 was not a period of fast stabilisation for the whole region of CIS countries. Meanwhile the export revenues in \$ increased annually in average by 13% in the eight EU accession countries, in the countries of Central Asia it was mere 6,1%. In Kyrgyzstan, Tajikistan and Uzbekistan (CE-3) it was 7,5% only. It was a small growth because the trade was falling even faster than the GDP until 1998. The biggest losses occurred prior to 1995, retaining the openness of 29,2% in 1998 (measured as the share of exports on GDP at CER). Another characteristic trend was a wide trade diversion from the CIS countries towards the non-CIS countries. Even though this trend attenuated after 1999, it was not reversed and remains present until now in the majority of Central Asian countries. Exports to the non-EU countries (the dominant partners being the EU and Turkey) form approximately three quarters of all trade of Central Asia. It is a sign of a weak economic recovery based on mutual trade with past traditional partners and the presence of high barriers to trade among close neighbours in Central Asia, who have advantage in low transportation costs and closeness in cultural institutions. Although a similar tendency was present in Central and Baltic Europe, the economic stabilisation after 1995 was marked by a very high growth in mutual trade creation among accession countries.

Year 1999 can be taken for a year of external stabilisation in nearly all CIS countries and the openness to exports in countries of Central Asia has increased to 44% in 2004. Although it is still less than what is a standard in countries of similar size or development in Europe or Asia, where we could expect openness around 60%, the progress is visible and should be promoted. Looking at CA-3 we could see that while Tajikistan relied on exports when its GDP was falling and had the degree of export openness at 81% in 1997. Its economic recovery was not export-driven and exports declined to openness of 44% in 2004. Uzbekistan and Kyrgyzstan are even less open (36% and 33% in 2004).

Although imports are a negative factor in forming the GDP growth, their indirect importance for growth is irreplaceable. They boost the competitiveness of domestic production (particularly exports) by using them as specific material inputs, which the small economies cannot produce at all or cannot produce them efficiently. Imports of machinery, technology and know-how are another feature of imports with crucial importance to growth. Thus imports are instrumental in replacing the domestic production with comparative disadvantage by reallocating resources to industries with comparative advantage, which can expand at unprecedented speed by furthering new exports.

Imports are at the same time exports of our trading partners. Their growth in GDP raises their absorption capacity for their imports in general. Thus an increase in aggregate demand in each of our trading partners spills back onto their trading partners, i.e. including our economy. The series of interconnected repercussions of growth among trading partners feeds back into additional incentives to our growth via new rounds of our exports to growing economies in the neighbourhood.

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*transition countries in Central and Baltic Europe kept their expansion in exports over 20% in the last 6 years and similar figures were reported by Turkey (in 2004 even 33,5%).*

It is quite clear that CA-3 countries underperform in their openness to trade and it would be therefore essential that **Central Asian countries continued in widening and deepening of their integration**, so that their growth would be mutually self-enhancing and that they had full incentives for dismantling all kinds of impediments to trade. The present form of cooperation was based on Eurasian Economic Community (EurAsEC)<sup>8</sup>, established in 2000, whose members were Kazakhstan, Kyrgyzstan, Russia, Tajikistan and Belarus. The August 2006 summit meeting of its members in Sochi can be taken for a breakthrough and a promising change in its past rather reluctant development. It was decided to admit Uzbekistan, thus relieving finally the most vital trade direction for Kyrgyzstan and Tajikistan. Upgrading the organisation to a status of customs union in the near future is a progressive step, even though it will start with three members only. The problem is that policies of a functional opening-up, proposed in this paper, require even more than just trading in an environment of customs union. Further upgrades should follow – building a common economic space, a common market and finally a single market.

The measured proposed here do not mean only no tariffs and no quotas. The **most important barriers to trade are bureaucratic ones**. Customs clearance, paper-work, different laws, currency uncertainty, uncoordinated economic and social policies, corruption, harassment, piracy and poor infrastructure – these all are costs that can cut the gains from trade to zero. As the statistics of trade of countries in Central Asia reveal, the majority of trade flows are not with the CIS countries. This is against the logic of the principles of trade gravity (see Bergstrand, 1985, Hamilton and Winters, 1992) and points to the existing high transaction costs in trade between these most natural trading partners.

As we referred to it above, the development driven by exports and imports requires a build-up of export capacities, which would grow at annual rates of 15-25% in average. Some industries with high comparative advantage would then grow at rates above 30%. The demand for investments would be therefore also very high. The supply of funds for investments comes mainly from private domestic savings (of both enterprises and households). Here there are two problems: on one hand the motives and incentives for high and accelerating investments, on the other hand the availability of funds (savings) for their financing. As one could see, while visiting Uzbekistan, Kyrgyzstan or Tajikistan, the anecdotal evidence suggests that the former is at a very low level. Also the statistics of capital investments signal that the rates of investments per GDP are low. E.g. total investments from all sources (private, governmental and foreign) in Tajikistan remained for long at less than 10% of GDP (UN DP (2005)). The national savings, on the other hand, seem to be higher than 10% (the statistics of Ministry of Industry indicated the average rate of 16,3% for 1999-2004. Nevertheless, how does it compare with requirements of an intensively restructured economy? E.g. with the Czech average rate of savings 31,3% in 1992-2000 and the domestic rate of investments 32,2%, plus some 4% from abroad? The pattern in other successful transition countries in Europe or Asia is following a similar path. We can therefore accept an assumption that both the saving and the investment activities in our CA-3 countries in Central Asia will require a substantial push if the new policies would be going to be successful.

There is, however, another snag in high restructuring via investments, which depends on highly efficient banking. It is not only essential that the rates of investment are high, also

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<sup>8</sup> *The history of economic re-integration of former member states of the Soviet Union started in 1991 when Kazakhstan, Uzbekistan and Kyrgyzstan attempted to form Central Asian Commonwealth. The difficulties of its functioning illustrate its three additional reorganisations, a decision to form a parallel economic block (EurAsEC) and finally to merge them in 2007.*

the quality of investments matter. In environment of external openness needs that international criteria for investment efficiency be applied and that the managers in new investments are competitive world-wide. The requirements for a high-leveraged banking intermediation is another reason for having the banking sector in highly professional hands, which is guaranteed practically only if the banks are privatised by renowned foreign owners with strong capital positions at home (e.g. from EU, USA, Japan, S. Korea, Turkey or Russia).

By analysing the saving rates in small countries of Central Asia, it is easy to see that domestic savings do not suffice to needs required by export expansion and rapid restructuring. Even the saving rates of 20-25% of the GDP need not be enough to underpin the accelerated potential growth. The first requirement is that the monetary policy is stable and that commercial banks are capable intermediates between savers and investors. This is just another point favouring the privatization of banks to experienced owners with international capital endowments<sup>9</sup>. Savings held in cash at home or hidden abroad will be deposited in banks at home. Also the velocity of money increases, which acts like expansionary monetary policy. Nevertheless, if the gap between the supply of domestic savings and the demand for investments implies still a deficit (what even in the highly saving Central European countries was nearly always the case during 1990s), the supply must be augmented by imports of foreign capital. Privatisation to foreign bidders and incentives to green-field investors from abroad is an inevitable policy, the externalities of which have positive repercussions not only on the whole domestic economy but also on the body of all trading partners abroad.

Here we could stress again that it is crucial for the proposed policies of externally driven growth that the communities in partner countries should feel their inter-connectedness, competition and a need for cooperation and mutual trust. Optimally a formal arrangement with a customs union would be a pre-condition. However, the whole integration grouping should have a higher common objective, like what the Central European countries had in accessing the EU. For example, the common market of Central Asian countries could have such a challenge in becoming an equal partner to Russia (within the same block) and China and in extending its alliance with Iran, Turkey and the EU.

When referring to EurAsEC, the Central Asian countries should be its most ardent supporters and actually the leaders of deepening integration, in some cases negotiated even bilaterally. A renewed membership of Turkmenistan would be a large gain because Turkmenistan blocks the trade links towards Iran and Turkey and the Mediterranean markets. One could also pose a question what could be the incentive for Kazakhstan (as a big and more reformed country) for entering into a common market with much weaker and smaller economies of Tajikistan or Kyrgyzstan? The answer is four-pronged:

- a) Being in a free trade area, and even gaining there a trade dominance, is not an optimal arrangement for a growth led by expanding international exchanges. As the experience of

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<sup>9</sup> *We could wonder why the privatisation of commercial banks to foreign owners is essential. We might presume that it would be enough to privatise them to domestic owners or to establish a joint-venture with a well capital-endowed foreign bank. The insights are given in Bonin et al. (2004). It was found out that the demands of transition on commercial banking (both in retail and in investment support) are so exceptionally high that mere domestic arrangement is prone to be undercapitalised, lacking sufficient expertise in credit or investment screening, it is more open to corruption, rent-seeking, state capture and moral hazard. An efficient banking intermediation is a pivotal underpinning of private entrepreneurship.*

the members of European Communities confirms, there are still too many impediments (like transaction costs) that cut on trade creation and thus restrain the development.

- b) The benefits from deeper integration are present, even though the enlargement concerns small countries. It is particularly the case if Kazakhstan would aspire to diversify its specialisation and rely on manufacturing and intra-industry trade, in addition to oil and gas. The neighbouring countries are always the priorities for evolving comparative advantages.
- c) A coherent trade block gives its dominant member higher bargaining power vis-à-vis much stronger partners, like Turkey or China, which is beneficial to all block members.
- d) Freer trade implies also wider chances for capital investments and economies to scale, which bring higher profit margins.

Externalities emanating from the presence of foreign enterprises comprise in the first place the transfer of technologies and of know-how in managerial standards. Their experience, prestige and expectations of long-term development exert influence on sustaining reforms of local legislation, public services and the safeguarding of property rights. The demand of new producers and expenditures of better paid workers are another spillovers into the sector of domestic sector, especially in the non-traded commodities. It should be stressed that the policies of international openness and of the support of domestic entrepreneurship (especially of the *de novo* firms) must go in parallel, each having its irreplaceable role <sup>10</sup>.

Once the financial account of the balance of payments is in surplus due to the influx of foreign direct investment, the current account can be left in deficit – a move which increases the domestic standard of living. Thus the gross absorption can grow faster than the GDP. It also exerts pressure on appreciating the domestic currency. In case when exports and imports grow in parallel, such a strengthening of currency is not a peril to external balance. New investors, new capacities and restructuring exert pressure on upgrading the productivity of labour. Also the rising quality of exports increases the export prices and the terms of trade gradually improve (Benáček et al. (2005)). Thus the balance of trade can be for a long time in a sustainable deficit – financed from the FDI inflows, even though the real exchange rate appreciation progresses annually by 3-5%. Then a typical outcome occurs: the growth rate of GDP in US dollars can be proportionally, i.e. by 3-5%, higher than the real growth in domestic currency (e.g. 6-8%). In another words, the growth of the GDP at CER (in contrast to the GDP at PPS) is subject to an additional factor of acceleration - the exchange rate appreciation. The long-term and fast appreciation is a phenomenon typical to transition countries with large losses in output during transformation. The losses go in parallel with the widening potential for future Balassa-Samuelson and quality improvements that the standard measurement of the GDP in domestic currency often fails to consider.

The annual catching-up in CA-3 can thus proceed at the rate around 11%, provided our criterion of convergence is in the GDP per capita in dollars at CER. Our scenario concerns the catching-up with countries having the GDP per capita in US dollars at CER exactly twice as high as the CA-3 at present. We will illustrate the catching-up potential in case of Tajikistan (\$ 329 per capita at CER in 2004). The targeted real countries for comparison would be optimally Pakistan and Senegal, which have their GDP per capita at \$ 684 and \$ 734 and which are not by institutional and natural endowments too remote from Tajikistan. But

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<sup>10</sup> This the strategy followed by Ireland and many Central European transition countries. E.g. in Ireland it was the establishment of IDA (promotion and aid to foreign investors) and Enterprise Ireland (promotion and aid to domestic firms). A similar strategy can be traced behind the recent accelerated growth of China or India, even though the local policies are less explicit than in Ireland.

because the GDP differential is 107% for Pakistan and 122% for Senegal above Tajikistan (instead of ideal 100%), and because using the data of a concrete country (instead of some hypothetical stylised facts), imposes too many caveats of realism against simplification, we will compare Tajikistan with a hypothetical country XY with the GDP per capita at \$ 658 (at CER in 2004).

We will assume that Tajikistan, after implementing the external and internal liberalisation and a successful upgrading of cooperation in EurAsEC (as we discussed it here in previous parts), will sustain its present high internal growth at 7% per capita and gain a growth bonus of 4% from the annual appreciation of somoni relative to US \$. The compared country XY, as a stabilised developing market economy lacking the history of painful transition, will have the internal growth at 3,4% per capita and a 1% gain in real exchange rate appreciation. Thus the growth differential will be 11% versus 4,4%, i.e. 6,6%.

The catching-up of Tajikistan with a developing country having its GDP per capita at commercial exchange rate twice as high will take 10,5 years, given the above assumptions. In another words, we could expect that within this period the GDP of Tajikistan at \$ 400 per capita in 2006 measured at CER, could rise not only to the present level of the targeted country XY (\$ 800 in 2006), but to its expected future value of \$ 1270 (at constant \$ prices of 2004 in the USA), when the GDP in both countries would equalise. I.e. the Tajik GDP per capita will nominally treble. In ideal circumstances that could happen in June 2016. A mere doubling of the GDP per capita from \$ 400 to \$ 800 would require 6,3 years.

Using the same abstract reasoning we could estimate that Uzbekistan and Kyrgyzstan could rise to the level of Nicaragua, Sri Lanka, Cameroon, Egypt or Philippines (with approximately double of the GDP per capita at CER) also during the transition period of 10-11 years, reaching at the end \$ 1400 - \$ 1600.

Our estimates of growth are based on the equation defined as:

$$Y_t = Y_0 \cdot e^{(r'+r'') \cdot t}$$

where  $Y_0$  and  $Y_t$  are the initial and the targeted GDPs per capita of given (or compared) country;  $r'$  is the real growth rate of the GDP per capita in domestic currency at constant prices and  $r''$  is the average annual rate of real exchange rate appreciation;  $t$  is the time of convergence between two countries, which grow at different rates of  $r'$  and  $r''$ . We will assume that CA-3 must grow much faster in both rates because of their accumulated potential during the 16 years of transition, which boosts into a real growth when the barriers to entrepreneurship are lifted and the capacity expansion is led via exports, FDI and recovered domestic demand. After separating the exponents and taking logarithms of both sides we can estimate the duration of convergence  $t$  by:

$$t = (\ln(Y_0)_{ca} - \ln(Y_0)_{tc}) / ((r' + r'')_{tc} - (r' + r'')_{ca})$$

where indices ca and tc indicate data for a Central Asian country and the more developed country targeted for convergence.

Once we computed the targeted GDP per capita at CER in 2016, we can use our data for estimating the corresponding GDP per capita at PPS. The 4% appreciation of real exchange rate for 11 years would imply that the GDP in PPS should be a multiple of the GDP at CER by the factor of  $1,04^{11} = 1,54$ . That means, the relationship between these two GDPs should change from the index of ERDI 3,80 in 2004 to 2,47 in 2016. The targeted Tajik GDP per capita at PPS in 2016 should be expected to be \$ 3115 (in constant dollar prices of 2004).

Our scenarios thus remind of the extremely fast catching-up proceeding now in China, or in Ireland in 1990s, or in Japan in the second half of 20<sup>th</sup> century. Such an accelerated catching-up in the GDP per capita at commercial exchange rate has been also present in all



transition countries that became EU members in 2004. Bulgaria and Romania joined such a strategy at the break of millennium only and their outcome proved to be successful from the very start.

### **C. Model of GDP Growth of the CIS Area and Its Implications for the Smaller Central Asian Countries**

**(Preliminary version of the model, waiting for new data for domestic investments.**

**Please do not quote !)**

The objectives of the next two parts are to test for more evidence about the factors and patterns of growth in countries of Central Asia, if compared with the rest of world. In the preceding two parts we concentrated on the role of investments (especially of foreign direct investment) and we also stressed that the exchange rate is an integral part of the process of catching-up, if we consider the impacts of qualitative changes as outcomes of deep transformation. In the chapter C we will test and see that the growth in both kinds of investments (domestic and foreign) is positively and strongly correlated with growth. In the chapter D we will test empirically whether our assumption about an exceptionally high undervaluation of exchange rates in CA-3 countries is not in conflict with real data.

In the traditional models of economic growth it is generally assumed that the GDP is a function of the inputs of labour and physical capital. The estimation of production functions in transition economies can be simplified by concentrating on the decisive factors only, which are the bottlenecks of growth. Labour in the conditions of transformation is a factor subject to trends that are seemingly in conflict with classic assumptions, i.e. where the demand for labour should increase whenever the wages fall or the price of capital rises and where the marginal substitution of capital by labour should be negative.

Firstly, transition countries have high unemployment rates and their supply is in excess of demand at whatever wage. That means, their supply and demand schedules often do not intersect. The reason is that the marginal product of (standard) labour is often zero or negative. Its products have no markets and employing additional labour may even cause a disruption of the already existing production. The only meaningful driver of growth is capital, labour becoming a secondary complement, not a substitute. Secondly, many transition countries have stagnating (some even decreasing) supply of population and the supply of labour is deepening this trend even further. Thus also the supply of labour does not represent a factor that would be able to boost production. We can observe an opposite relationship: the increase in production (due to restructuring) is correlated with a decrease in labour. The reason is labour hoarding (see Koumakov, Najman, 2001), the lack of restructuring and low efficiency of poorly paid workers. Thus any advance in gaining productivity is associated with the imposition of new capital.

Further we can assume that each batch of addition to the stock of capital (i.e. the new investment as the real gross domestic fixed formation) already contains the technical change. I.e. the autonomous technical change is already embodied in new investments. We could distinguish between the domestic and the foreign capital. They fulfil different roles in the economy. Economies driven by exports, such like all eight new EU member countries, required in a short time large stocks of foreign capital. On the other hand, economic development driven by domestic demand alone (in contrast to export-led development), is then associated with the production of internationally non-traded products and the required capital investment are financed from domestic resources. They are usually limited, their

standards of technology and management are not most advanced and the competition inside industries is not sharp. The outcome is characterised by low growth, low wages and low prices (relative to developed countries). Such was (and is) the situation in post-Soviet economies, whose international openness has been low for both exports and imports.

A simplified hypothesis of growth is presented in Harrod-Domar growth model. We will proceed with our estimations by adapting its version by Domar to the data available in statistical databases of UN-ECE <sup>11</sup>. If the capital/output ratio (as an inverse of capital efficiency) is assumed constant, then the growth in GDP can be taken as a function of total investment growth. Such investment is composed of the domestic fixed capital formation and the inflows of foreign direct investment. Our analysis should concentrate on the period of transition only, which brought a fundamental break in the way how the economies function. However, we should exclude from our analysis the early years 1990-1993 <sup>12</sup> when the economies were grossly disrupted by depressions, i.e. by factors dissociated with investments.

As is explained by Winiecki et al. (2004), or by Campos and Coricelli (2002), the primary source of the output decline was an outcome of the freedom to choose. In the environment free of the planning command there was no demand for a large part of production. The problems with external demand had a clear indicator in the real exchange rate, which depreciated sharply in all countries. In some of them even over-reacted to unparalleled depths. Thus the capital had to shrink (what could not be revealed sufficiently by the statistics), trade had to divert and labour to move. The future of production was in different products, different markets and new enterprises. Thus the growth declined, even though the investments were often high and exchange rates depreciated. For long, and in many countries until now, the bottleneck of growth rested in the barriers to the rise of new private firms, artificial resuscitation of former state-owned enterprises and in the retention of past institutions, which provided negative incentives to restructuring. The path dependency on institutions of government paternalism was the most resilient to change. Therefore the progressive reformers of institutions and countries liberalising entrepreneurship had not only lower rates of decline and also a faster breaking-even for recovery.

The model we used for testing the relationship between the availability of capital and the GDP growth was specified as follows:

$$Y_{j,t} = a + b DI_{j,t} + c FI_{j,t} + \varepsilon_{j,t} \quad \text{where :} \quad (1)$$

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<sup>11</sup> Unfortunately the data with domestic investment values or data for domestic stock of capital were not available for all CIS countries and for all years. Therefore we had to rely also on the statistics from alternative resources (mainly the domestic statistics) which had to be converted into US dollars. Another problem was the lack of data for the stocks of physical capital. There were available time series of new investments, commencing from 1994, which did not allow us to reconstruct the stocks of capital by some model of capital flows. Our data were rather asymmetric: there were accumulated stocks of FDI and annual flows of gross investments (gross fixed capital formation). Definitely not an ideal composition but usable braces for deriving some rough estimation of the role of investments in the region.

<sup>12</sup> The problem of choosing the correct length of time series is especially sensitive for the analysis of transition. As was mentioned by Mencinger, 2003, the early stages of transformational depression were so specific that they should not be mixed with the period of economic recovery.

$Y$  = GDP in US \$ (measured in two alternative measures: at purchasing power parities in constant dollars of 2000; and at current commercial exchange rates).

$a, b, c$  are coefficients of its determining exogenous variables.

DI = domestic investment (measured as annual flows of gross fixed capital formation in US\$ at PPP in constant prices of 2000),

FI = foreign direct investment (measured as annual accumulated stock in current US\$),

$\varepsilon$  = error term,

$j = 1, 2, \dots, 13$  are countries indicated in the list below <sup>13</sup>,

$t = 1994, 1995, \dots, 2004$  are years.

An alternative specification of the model (1) could be its conversion to a model of growth (symbolised by % added to given variables):

$$\%Y_{j,t} = \alpha + \beta \%DI_{j,t} + \gamma \%FI_{j,t} + \varepsilon'_{j,t} \quad (2)$$

Remark: an alternative version to model (2) can be also approximated by taking natural logarithms of (1).

If we would interpret the stock of foreign investment as a proxy variable for human capital, and technological or marketing know-how, then our model can be **interpreted** as an approximation of the theory of growth given as:

$$\Delta Y_{j,t} = A \cdot \Delta K_{j,t}^{\alpha} \cdot \Delta H_{j,t}^{1-\alpha}, \text{ where}$$

$A$  is the exogenous state of technology common for all countries,

$\Delta K$  is the annual change of domestic physical capital due to domestic investment,

$\Delta H$  is the annual change in human capital by a raised level of the FDI.

Even though our data are not perfectly compatible with this specification, the interpretation holds: the variable of DI is a close proxy for the annual change of domestic physical capital due to domestic investment. It is the basic factor of the GDP growth, which in the Harrod-Domar model is related to the GDP by means of the coefficient of average capital/output ratio <sup>14</sup>.

The variable of FI is an accumulated stock, which is compatible with the endogenous variable of GDP at its annual value. FI contains in itself both the volume of physical capital, and an increment of the stock, which determines the GDP growth. At the same time FI contains the stock of imported human capital, which is essential as a factor generating additional growth. As was found by Borensztein et al. (1996) and Easterly (2001), FDI was indeed an autonomous factor of growth. We should therefore expect that marginal productivities of FDI should be higher than those of domestic investments.

The results of our estimations are indicated in Table 1.

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<sup>13</sup> The following countries were included in our panel: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan, and Turkey.

<sup>14</sup> Ideally, the exogenous variables should include the stock of domestic physical capital. As was already mentioned, the statistics of post-Soviet economies do not provide such time series. Another snag is that even if such series would exist they would be biased because a great deal of huge capital stocks bequeathed from the period of central planning was in a form of sunk capital that was actually a retardant and not an engine of growth.

<b>Table 1: GDP as a function of physical capital</b> (132 observations)			
<b>a) Linear estimation for GDP at PPS (constant prices of 2000)</b>			
Exogenous variables	Coefficient	t-statistics	Beta coeff.
Intercept (constant)	-6542	- 1,7	
Domestic investment in \$ at PPS	<b>4,81</b>	49,3	0,89
FDI stock in \$ at PPS	<b>4,50</b>	6,3	0,11
F-statistics:	6352	$R^2_{adj.} = 0,981$	
Durbin-Watson:	2,00		
<b>b) Logarithmic estimation for Ln(GDP) at PPS (constant prices of 2000)</b>			
Exogenous variables	Coefficient	t-statistics	Beta coeff.
Ln (Intercept)	2,21	20,3	
Ln (Domestic investment in \$ at PPS)	<b>0,935</b>	47,7	0,98
Ln (FDI stock in \$ at PPS)	<i>0,007</i>	<i>0,4</i>	<i>0,02</i>
F-statistics:	2981	$R^2_{adj.} = 0,977$	
Durbin-Watson:	1,60		
<b>c) Linear estimation for GDP at commercial exchange rates in US\$</b>			
Exogenous variables	Coefficient	t-statistics	Beta coeff.
Intercept (constant)	-6003	-2,34	
Domestic investment in \$ at PPS	<b>1,54</b>	23,45	0,79
FDI stock in \$ at PPS	<b>3,11</b>	6,45	0,21
F-statistics:	1020	$R^2_{adj.} = 0,935$	
Durbin-Watson:	1,96		
<b>d) Logarithmic estimation for Ln(GDP) at commercial exchange rates in US\$</b>			
Exogenous variables	Coefficient	t-statistics	Beta coeff.
Ln (Intercept)	0,350	2,164	
Ln (Domestic investment in \$ at PPS)	<b>0,917</b>	31,422	0,887
Ln (FDI stock in \$ at PPS)	<b>0,109</b>	3,992	0,113
F-statistics:	1550	$R^2_{adj.} = 0,956$	
Durbin-Watson:	1,65		

Source of data: UN ECE, 2006, and national statistics of some countries.

Though the specification of this model is not ideal, we have found an exceptionally strong direct relationship between the level of GDP and the intensity of investment activities. The correlation between the GDP and the domestic investment varies between 0,96 and 0,99, implying a highly robust relationship between the growth of these two macrovariables. Nevertheless, the correlation between the GDP and the level foreign capital stock varied between 0,81 and 0,83, which was also very high <sup>15</sup>.

In an alternative specification we modified the model by regressing the physical capital against GDP in two alternative measures: at constant PPS and at current commercial exchange rates. We have also estimated the production functions with coefficients as exponents after taking logarithms <sup>16</sup>. Alternatively we excluded Russia from the list of countries because Russian economy represented a half of production of the analysed

<sup>15</sup> Thus the correlation between domestic investments and FDI stocks was the lowest – at 0,77, which was not strong enough to cause a significant bias due to multicollinearity. As a result, the estimates led to a dominant influence being conferred on domestic investments, as is also shown by the high values of BETA coefficients.

<sup>16</sup> Such function is similar to Cobb-Douglas equation, where the countries would decide between using domestic or foreign capital for expanding production. With certain limits, the coefficients of such regressions can be interpreted as elasticities.

countries. As was shown, Russia did not cause any bias to our estimates. All results indicated the basic relationship: both the GDP volume and the GDP growth in all analysed countries were exceptionally closely related to the availability of capital of any form (domestic or foreign). Though we cannot judge from mere empirics, which of these three variables was the cause and which was the effect, we can rely on economic theories and presume that it was the presence of capital which generated growth.

If we concentrate on the roles of domestic and foreign investments, we can see magnitudes of Beta coefficients that the **GDP growth in our studied countries was dominantly dependent on domestic investments and the role of FDI was auxiliary**. That is in sharp contrast to advanced reforming countries in Central and Baltic Europe where domestic growth was primarily associated with the presence of foreign investors (Liebscher, Christl et al. 2004). We could also see, if compared with the importance of FDI in Czechia, Hungary or Estonia, that the majority of post-Soviet economies acquired very low levels of FDI, thus their impact on the growth must have been limited.

An important observation was pointed out by Mencinger, 2003: for long the FDI in transition countries of Central Europe was related to massive politically motivated privatisations where FDI inflows were mere acquisitions without investments into real assets and the government proceeds from FDI were spent on consumption and imports. It was in the advanced stages of transition when the presence of FDI reached the level of a critical mass and its spillovers became visible (Campos and Kinoshita, 2002, Borensztein et al., 2004). However, FDI is not a primary source of economic success. Reaching the critical mass of FDI and a high level of its productivity is conditioned by a prior **accumulation of human capital** of domestic resources and by **installing growth-enhancing institutions**, such as the legislation enforcing property rights and free enterprise. Both of these domestically-induced developments generate spinoffs, which are beneficial to both foreign and domestic firms. Such “crowding-in effect” of institutional build-up implies higher levels of domestic investments and the complementarity with domestic firms (Zebres, 1998, Winiacki et al., 2004). Therefore the causal chain of high growth starts with domestic reforms and ends with high inflows of FDI and its spillovers.

Our above results reveal that the majority of countries in the region of Central Asia have not reached such a stage of development. Especially in EC-3 (Kyrgyzstan, Tajikistan and Uzbekistan) the stocks of FDI are far below its critical mass and therefore far from being dominant in their impacts on growth, as it was in all eight EU accession countries. Our findings point to a hypothesis that small countries with insignificant export of natural resources and with low levels of GDP per capita in 1991 (such as Tajikistan or Kyrgyzstan) were caught in a vicious circle of insufficient growth not only because of their inability to attract sufficient foreign capital but primarily because of their inadequate capacity for building institutions more compatible with market economies. Their domestic investments, though quite high in the later stages of transition, could not lift them by pulling their own shoestrings. A break-through in policies for attracting foreign investments and mushrooming of indigenous entrepreneurship is therefore a condition, which can be hardly replaced by any other political orientation.

A similar experience can be drawn from the developments in transition countries in Central, Baltic and South-East Europe. **An establishment of investment incentives, combined with legislative reforms and judiciary that guarantee the enforcement of property rights is a necessary starting condition**. An establishment of a central government institutions of FDI surveillance and assistance to foreign and indigenous investors is most recommendable. The experiences of IDA and Enterprise Ireland, and CzechInvest and CzechTrade, as specialised cross-sectional institutions of investment and trade intermediation,

are absolutely essential. Their efficiency and contribution to the breakthrough of Ireland and Czechia in economic development is beyond doubt <sup>17</sup>.

#### **D. Model of Determining Factors of Exchange Rate**

After having analysed the relationship between the GDP growth and the inputs of capital FDI, our next step concerns the determining factors of international trade and, through their repercussions, the GDP growth. Exchange rate is an instrument, which brings exports and imports into the desired balance and reflects in itself the state in economic fundamentals influencing the traded sector of the economy, i.e. approximately a half of the GDP. If a country is able to specialise in the trade according to comparative advantages, it can get on an accelerated path to growth. Economists speak about export-driven (or better trade-driven) growth. Keen international competition selects the most productive managers, enterprises and industries, the accelerated growth of which brings the exchange rate on an **appreciating path**, which checks for the efficiency in the whole traded part of the GDP <sup>18</sup>. On the other hand, if a country is engaged in autarchic policies, concentrated on import replacements, protectionism and domestically-induced growth, such countries generate weak exchange rates, the undervaluation of which does not push the economy to technical improvements and improvements via intensive import absorption.

Balassa-Samuelsong effect is a mechanism that depicts in time how intensively a poor country has been able to adjust to international competition and improve its position on world markets. In this part of the paper we will test how the Balassa-Samuelsong hypothesis could be used for the assessment of position of Central Asian countries in the world division of labour. Following the logic of Balassa-Samuelsong applied on small open economies, the formative and most dynamic part of the GDP is in tradables (i.e. in exportable products and domestic production competing with imports). They are the bearers of competition and efficiency and the primary sources of growth. It is also the production of tradables that determines both the wages and the exchange rate. The higher the productivity (relative to world competitors), the higher the wages and the more appreciated is the exchange rate. Wages are then exogenously accepted by the non-traded sector of the GDP (i.e. in approximately the second half of the GDP), which determine the level of prices in non-tradables.

Thus the high level of the GDP per capita at CER is formed not only by high growth in valued added embodied in exports, but also by high nominal value added in non-tradables, which depends on rising wages and appreciating exchange rate. Policies of openness discussed in chapters A and B have therefore a theoretical underpinning in this

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<sup>17</sup> For a more detailed information see IDA (Industrial Development Agency) at <http://www.idaireland.com/>, <http://www.enterprise-ireland.com> and CzechInvest at <http://www.czechinvest.cz/>.

<sup>18</sup> There is a numerous literature about the unavoidable tendency of exchange rate in transition countries to appreciate in real terms. The classic titles are Halpern, Wyplosz (1997) and Grafe, Wyplosz (1997). Although exporters are very reluctant to accept it, the appreciation was an effective instrument for disciplining the producers and speeding their activities towards higher efficiency and quality improvements. Finally, it was both consumers (bringing them cheaper and better products) and producers (offering them cheaper imported inputs exchanged for their production sold for higher prices) who benefited from monetary policies refraining from containing the appreciation.

macroeconomic approach to export-led growth (Czaba (2005)). Competitiveness in tradables and efficient specialisation are the primary engines of growth in small economies and non-tradables become their complement multiplying the GDP growth (measured by converting domestic nominal GDP to dollars at CER) by both: their rising prices and their expanding volume of production. The concept of externally-driven development is characterised by the following functional relationships:

$$\text{GDP} = \Phi (\text{Exports, Imports, FDI; internal spillovers})$$

This implies that tradables (exports and imports) and direct external financing are the engines of growth – exports directly, imports and FDI indirectly. However, all of them have a crucial impact on the remaining internal parts of the economy – into the production of non-tradables, as well as the spinoffs into the efficiency in producing future exports and import substitutes. The sustainable appreciation of the exchange rate is a link between the expanding exports, including their upgrades in structure and quality (both identifying burgeoning competitiveness) and their productivity and price repercussions into so accelerated growth in the non-traded sector.

The externally-driven development can be contrasted with internally-driven development, which can be described as:

$$\text{GDP} = \phi (\text{Domestic aggregate demand, domestic technical change, domestic investment})$$

Such model is more appropriate to large countries aiming at autarchic development. Such tendency and an insufficient reliance on international division of labour was present in centrally planned countries of Europe and Asia. Its retarding development was one of the main reasons for transition (Kornai (2005)). Unfortunately, many transition countries retained it as a legacy of their path-dependency.

Our hypothesis for testing is based on the assumptions of the Balassa-Samuelson effect: poorer countries must have lower price levels than rich countries. Since the relative price levels are determined by exchange rate, their nominal exchange rate must be “undervalued”. It should be proportional to the relative gap in productivities measured by marginal products of labour – MPL of the traded sectors (T) at home and abroad (\*), i.e. by  $\text{MPL}^T / \text{MPL}^{T*}$ . It is assumed that domestic MPL is significantly lower than the  $\text{MPL}^{T*}$  in more advanced countries abroad. Actually their nominal exchange must reflect that situation in order to keep their tradables competitive.

The measure of nominal exchange rate “undervaluation” (i.e. its deviation from the definition of nominal exchange rate according to the absolute purchasing power parity:

$r_t = P_t / P_t^*$  where P and P\* are the weighted price of commodities in national currencies at home and abroad (marked with \*). The easiest way how to estimate such deviation in exchange rates vis-à-vis their benchmark of purchasing power parity (PPP) is by taking ERDI (exchange rate deviation index) as a proxy. ERDI can be approximated by the relationship between the GDP measured in purchasing parity standards and the GDP measured at nominal commercial exchange rate:

$$\text{ERDI}_t = \text{GDP}_t^{\text{PPS}} / \text{GDP}_t^{\text{CER}}$$

ERDI, as a function of the productivity gap, signals also that the gap in productivities is also a gap in quality and competitiveness. This is the feature, which Balassa/Samuelson somehow failed to capture.

However, once the traded sector of a poor country starts catching up with productivities in rich countries, there arises a conflict in determining its exchange rate

according to the hypothesis of relative PPP. Thus the rapidly rising  $MPL^T$  increases wages, while the prices of tradables remain unchanged. Higher wages spill over from traded to non-traded sectors. Therefore the **prices of non-tradables ( $P^N$ ) must rise**, while the price level of tradables  $P^T$  still copies the unchanged world prices. This is shown in the dynamics of annual consumer price index (CPI) in the poor country, which is generally higher than the CPI in rich countries (signalling “inflation” in the former).

This all means that there is no reason why exchange rate  $r$  dynamic transition countries should depreciate in real terms and thus behave according to the rule of relative PPP. If the increase in productivity compensates fully the rise in CPI, the **nominal exchange rate can remain unchanged** and the RER, measured as  $\rho_t = r_t / (P_t / P^*_t)$ , actually **appreciates** because the changes in price levels at home are faster than the price changes abroad. I.e.  $(dP_t / P_t) > (dP^*_t / P^*_t)$ . This is one of the crucial macroeconomic problems in the monetary policy in transition countries.

The questions about the real exchange rate stability are:

- What kind of inflation is a peril and which one can be tolerated?
- And which change in the RER is a “normal” appreciation and which one should be eliminated in order to keep exports competitive?

Going back to the main topic of this paper, we will therefore test here how the CIS transition countries managed their exchange rates and how intensive was their appreciation. A special interest will be given again to CE-3. If their exchange rate would be more depreciated relative to their GDP per capita at PPS, that would indicate that these countries have not used the potential for accelerating their growth from external openness, gains from comparative advantages and specialisation.

Our econometric analysis will test 124 countries of the world and the tautness of their exchange rates. The model will consider the following variables:

$$ERDI_j\% = a + b * GDP/P_j\% + c * NR_j + d * TC_j + \varepsilon_j \quad \text{where}$$

- a, b, c, d are coefficients to be estimated,
- j are indices of countries 1, 2, ..., 124
- ERDI in 2004 is the exogenous (explained) variable; ERDI will be taken in percentages. E.g. the value of Uzbek ERDI of 4,71 is interpreted as 471%.
- GDP per capita in 2004 at nominal commercial exchange rate; the values of individual countries are related to the Czech GDP, which lies close to the median and thus can be taken as a benchmark for 100%. Thus the values of all other countries are normalized to this level. The ERDI should be proportional to the economic level and increase as the GDP is lower than the most advanced country in the sample (i.e. the USA and its ERDI of unity), provided the exchange rate is not undervalued or overvalued (i.e. it is not deviating from the average trend).
- Dummy variable of natural resources (NR) in compliance with the definition in chapter A; we distinguished three levels of NR-intensiveness of exports: 1 = low dependence on natural resources; 2 = important but still not dominant contents of natural resources in exports (e.g. the NR form less than 50% of exports); 3 = dominant dependence of exports on natural resources.
- Dummy variable of transport costs (TC); we distinguished three levels of access: 1 = country has its own and easy access to maritime transport; 2 = land locked country



with good alternative transport to dense international markets; 3 = land locked country with costly alternative transport (all countries of Central Asia were qualified as 3).

Our results provide a hypothesis that the most “common” coefficient of ERDI should be 320, which should be “appreciated” (i.e. decreased) by 1,507% for each percentage level of GDP (related to the Czech level), plus further “appreciated” the more the country relies on exports of natural resources, and further “depreciated” (i.e. increased) depending on the degree of costs associated with transport.

The results of our estimation are indicated in Table 2.

As we computed the residuals for five countries of Central Asia (i.e. the difference between the predicted (“normal”) value of ERDI and its real value, the model indicates that all of them had strongly undervalued exchange rate relative to its GDP per capita alone, except for Turkmenistan. Kazakhstan, Uzbekistan and Kyrgyzstan had an undervaluation above the level determined by all three exogenous factors and Tajikistan was just at the margin. That means they had to have a weaker currency than would be taken for normal, in order to keep their exports competitive. In addition, our CA-3 countries had to undervalue further their exchange rate by nearly 100 points (e.g. if compared to Kazakhstan) because they were not intensive exporters of natural resources. All four countries had to keep their currency weaker because they were land-locked. It could be also expected that Tajikistan will have to depreciate its real exchange rate by approximately 10-15% in order to withstand the pressures of free trade.

<b>Table 2: ERDI as a test of over-valuation or under-valuation of exchange rate</b>			
(124 observations)			
<b>Linear estimation for ERDI in 2004</b>			
Exogenous variables	Coefficient	t-statistics	Beta coeff.
Intercept (constant)	320,2	12,1	
<b>GDP per capita at commercial ER</b>	<b>-1,507</b>	-11,2	-0,64
Natural resources in exports (dummy)	<b>- 47,2</b>	- 4,2	-0,22
Access to sea (dummy)	<b>59,5</b>	4,5	0,25
F-statistics:	66,1	$R^2_{adj.} = 0,615$	
Durbin-Watson:	1,91		

The main finding of this model is that four out of five transition countries of Central Asia had to engage in trade with weaker currency than would be considered normal among remaining 124 largest countries of the world. That means, their exports were less competitive than would be normal, given their level of development, because of the transportation barriers and the dependence on exports on other products than energy-based natural resources. We could also presume that the low level of FDI in CA-3 countries contributed to their exchange rate undervaluation, too. This implies that these three countries could not take full advantage of their access to imports (as a source of growth and higher level of consumption), and also their exports were challenged by impediments in addition to their expected impediments.

**By increasing the competitiveness of exports, the exchange rate could appreciate and thus contribute significantly to the growth in these economies expressed in dollars. The increased competitiveness could be achieved by higher FDI inflows, which are the vital catalysts for building additional export capacities, improvements in the quality of exports, gains in the terms of trade, preferential rise of exports from industries with higher profits and by decreasing the transportation costs by dismantling bureaucratic impediments to the transit of commodities.**

## **Conclusions:**

1/ Three countries of Central Asia, which are not sufficiently endowed with easily exportable natural resources – Tajikistan, Kyrgyzstan and Uzbekistan – perform at approximately 50% of their potential of GDP per capita. Filling this gap by converging at their full capacity would require a doubling of the productivity of labour. That could be achieved within approximately 7 years, provided some immediate steps in policies and internal behaviour of economic agents are undertaken.

2/ In the very long run (approximately 20 years) their economic potential can be enhanced even further by growing faster than the medium-income developing countries (represented at present by Morocco, Philippines or Egypt). That would require the growth at a sustained growth differential of approximately 3% (i.e. at a growth rate of 6-7% instead of 3-4%) and, in addition, withstanding a long-term appreciation rate of approximately 3-4% per year.

3/ The weak chain in the development in these economies rests in insufficient trading with neighbouring regions within the reach of 1200 km in diameter. Three quarters of trade in Central Asian-5 is effected with the non-CIS partners. The inter-regional trade among them (e.g. after excluding Russia) is therefore exceptionally small. The intra-industrial trade among them is nearly negligible. It therefore does not reflect so much the persistent problems with transport infrastructure but institutional failures at the level of integration within EurAsEC.

4/ The mentioned countries must:

- a) dismantle the constraints to their internal institutional setup, in order to enhance the functioning of market economies, and set right the incentives to private entrepreneurship;
- b) progress further with market reforms (e.g. in taxation, labour contracts, investments, deregulation);
- c) unleash the constraints on their aggregate demand by promoting free trade and capital inflows.

5/ The promotion of domestic savings and capital inflows should be done by complete restructuring of commercial banking, preferably by its complete privatisation by well capital-endowed renowned foreign owners. A parallel system of investment incentives and an institution of government support of both investors and indigenous entrepreneurs should be introduced.

6/ The dismantling of all impediments to trade between the countries of Central Asia should be done by turning EurAsEC into a customs union in medium-run and a common market in the long-term perspective. Its inclusion of Turkmenistan and association with large potential trading partners (China, Iran, Turkey and EU) via free trade area is of vital importance.

7/ Re-vamping thoroughly the whole transport infrastructure between the EurAsEC members and minimising (if not completely eliminating) the burdens of bureaucracy, corruption and insecurity in transiting and customs clearance.

8/ The real exchange rate of Central Asian countries without reach endowments with easily exportable natural resources is strongly undervalued. They should be aware that it will be to their advantage that after the acceleration of their development by adopting coordinated policies for unleashing trade and FDI-led long-term growth the exchange rate will keep appreciating and their speed in catching-up with developing countries in the medium brackets of the GDP per capita will be more than proportionally enhanced as its aftermath.

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