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Successes and failures of industrial policy: Lessons from transition (post-communist) economies of Europe and Asia

Vladimir Popov

ABSTRACT

- Is industrial policy necessary for successful development or the market “knows” better, how to allocate resources?
- If industrial policy is needed, how to select industries that need to be supported?
- What are the appropriate tools / instruments to support particular industries?

Eastern European countries in general did not have any explicit industrial policy, neither via tax concessions and/or subsidies, nor via under/overpricing the exchange rate.

Many countries of former Soviet Union carried out large import substitution programs through regulation of domestic fuel and energy prices (directly and via export tax) that subsidized all energy consumers. They also provided subsidies to agricultural enterprises.

China and Vietnam (and to some extent Uzbekistan) were carrying out export oriented industrial policy mostly via underpricing the exchange rate.

The paper discusses pros and cons, achievements and failures of various models of industrial policy. It is argued that export oriented industrial policy via undervaluation of the exchange rate is the best possible option to promote export oriented catch up development based on export of manufactured goods. It is especially needed for resource rich countries (Azerbaijan, Kazakhstan, Russia, Turkmenistan, Uzbekistan) that are prone to Dutch disease.

Assistance to domestic producers via keeping low domestic prices for fuel and energy also helps to stimulate growth, but at a price of very high energy intensity. Industrial policy that is not targeting particular industries (general support for education, research and development and infrastructure) may be reasonable for counties at a higher level of development.

Keywords: Economic growth, economic diversification, industrial policy, exchange rate policy.

JEL classification: O14, O25, O4.

I. Introduction: Industrial policy and economic diversification

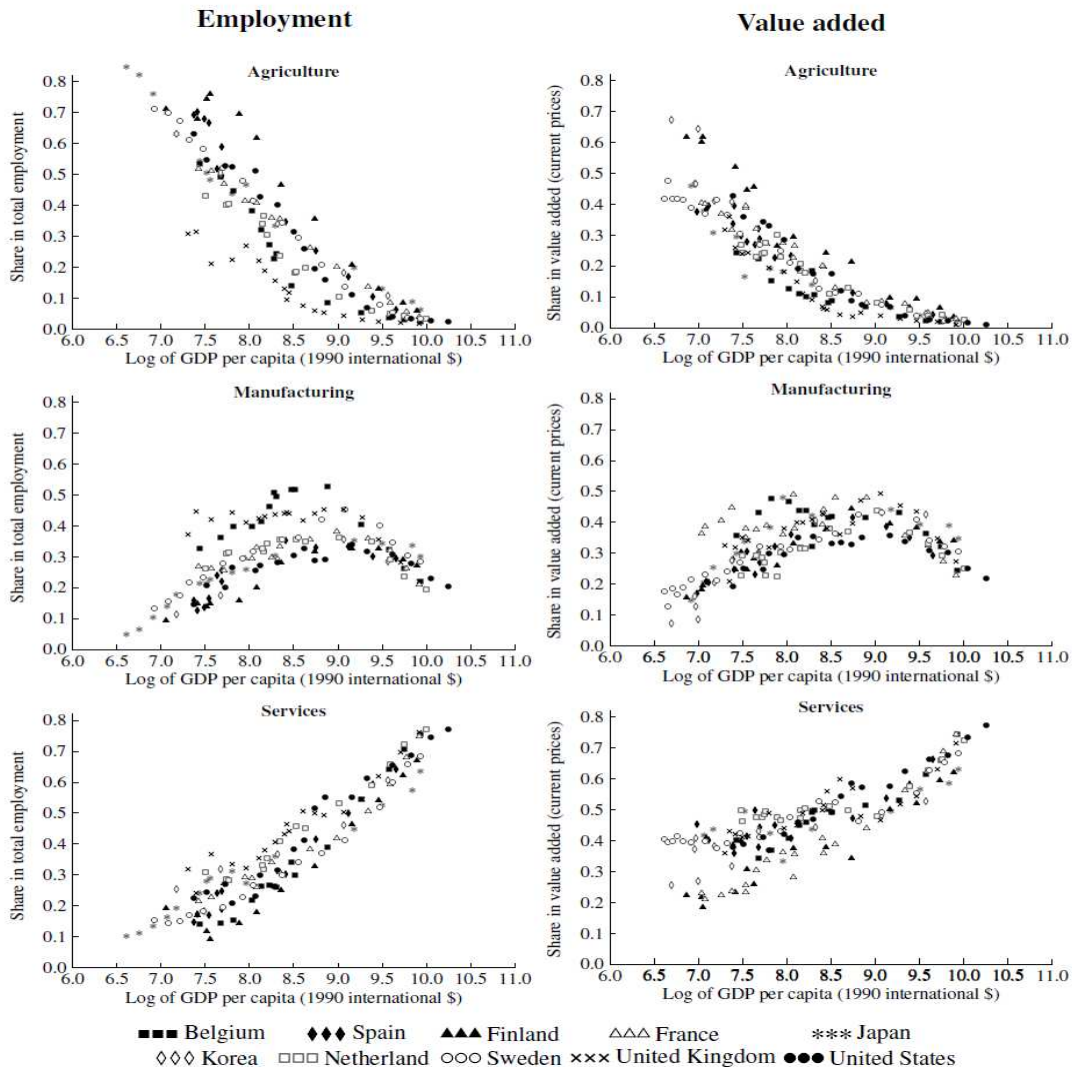
The increase in the share of service sector, especially trade and finance, at the expense of industry (deindustrialization) occurred in all post-communist economies (previously in the centrally planned economies the service sector, in particular trade and finance, was underdeveloped). In Russia, for instance, the share of industry in GDP fell from about one half in 1990 to about one third in the 1990s, whereas in industry itself the share of primary sector (fuel, energy, steel and non-ferrous metals) in total industrial output increased from 25% to over 50%, whereas the share of secondary manufacturing declined accordingly (Popov, 2011). Part of the decline is due to the change in relative prices (domestic prices for resources and services increased more than for manufactured and agricultural goods), but relative changes in physical output also played a role – real decline in secondary manufacturing and agriculture was more pronounced than in services and resource industries.

The structure of exports in most post-Soviet states also became more primitive in recent two decades – the share of manufactured goods in total exports either declined or did not show any clear tendency towards increase. Partly it was caused by the increase in resource prices and resource boom – expansion of fuel production and exports in Azerbaijan, Kazakhstan, Russia, Turkmenistan and Uzbekistan. In Russia the share of fuel, minerals, metals and diamonds in total export grew from 52% in 1990 (USSR) to 67% in 1995 and to 81% in 2012, whereas the share of machinery and equipment fell from 18% in 1990 (USSR) to 10% in 1995 and to 4.5% in 2012. But the real shifts (in constant prices) were also in favour of resources at the expense of ready made goods.

International comparison of the structure of the economy at different stages of development may provide some insights into what kind of structural shifts occur during the transition from agricultural to industrial stage and to post-industrial stage. Figure 1 provides some quantitative estimates for the Chenery hypothesis (Chenery, 1960) – a well-documented process of changes of the relative shares of three major sectors of the economy (agriculture, industry, services) in the process of economic development. In developed countries in recent 200 years the share of agriculture constantly decreased, the share of services constantly increased, whereas the share of

manufacturing increased before countries reached a level of per capita income of about 6000 international dollars of 1990 ($\ln 6000 = 8.7$), i.e. about 12,000 in today's prices, and then declined. To put it differently, at a stage of development of below \$12,000 GDP per capita in today's prices, resources were transferred from agriculture to industry and services, whereas after the level of \$12,000 per capita GDP resources were transferred from both agriculture and industry to services (i.e. the service sector was growing at the expense of not only agriculture, but also industry).

Figure 1. The share of manufacturing in value added and employment in selected developed countries in 1800-2000, %, and log GDP per capita in 1990 international dollars



Source: (Herrendorf, Rogerson, Akos, 2013), Figure 1.

The level of development, of course, is not the only determinant of the structure of the economy. The other determinants are the size of the economy and its resource endowment, as was pointed out in the early literature on the issue. Syrquin and Chenery (1989) concluded that higher income growth and more marked transformation are found among countries with large populations, a predominance of manufactures in exports, and a larger role of exports.

These changes in industrial structure were not the result of “invisible hand of the market” alone. As Greenwald and Stiglitz (1986, 2013) state, market failures are pervasive, private rewards and social rewards virtually always differ, so governments are inevitably involved in shaping the industrial structure of the economy, both by what they do and by what they do not do. As many authors point out, the secret of “good” industrial policy in East Asia, as opposed to “bad” industrial policy in the former Soviet Union, Latin America and Africa may be associated with the ability to reap the benefits of export externalities (Khan, 2007; Gibbs, 2007). Exporting to world markets, especially to developed countries, enables the upgrading of quality and technology standards and yields social returns in excess of returns to particular exporters. The greatest increases in productivity are registered at companies that export to advanced (Western) markets and that export hi-tech goods (Harris & Li, 2007; Shevtsova, 2012). It has been also shown that the gap between the actual level of development and the hypothetical level that corresponds to the degree of sophistication of a country’s exports is strongly correlated with productivity growth rates (Hausmann et al., 2006). To put it differently, it pays off to promote exports of sophisticated and high tech goods. Not all the countries that try to promote such exports succeed, but those that do not try, virtually never engineer growth miracles.¹

It should be noted though that there is an opposite view – for instance, in the recent paper from the World Bank (Gill, Izvorski, van Eeghen & De Rosa, 2014). It concludes that it is not clear

¹ One exception could be Botswana that had one of the highest rates of per-capita GDP growth in the last 50 years (5% during 1960-2010), which was primarily driven by exports of primary commodities (namely, diamonds) and not of high-tech goods. The other exception may be Oman: out of 20 economies with average growth rates of GDP per capita in 1950-2010 of 3% and more a year, Oman was the only oil rich state (nearly 5% growth a year) (Popov, Jomo, 2017). True, many other oil and gas exporters in the Persian Gulf and elsewhere quickly became rich in recent decades, but not due to higher growth rates of output (it was moderate), but due to the improvement of the terms of trade – their income from resource exports grew much faster than their output and exports.

whether diversifying exports and production is necessary for development and that governments need worry less about the composition of exports and the profile of production and more about national asset portfolios—the blend of natural resources, built capital, and economic institutions.

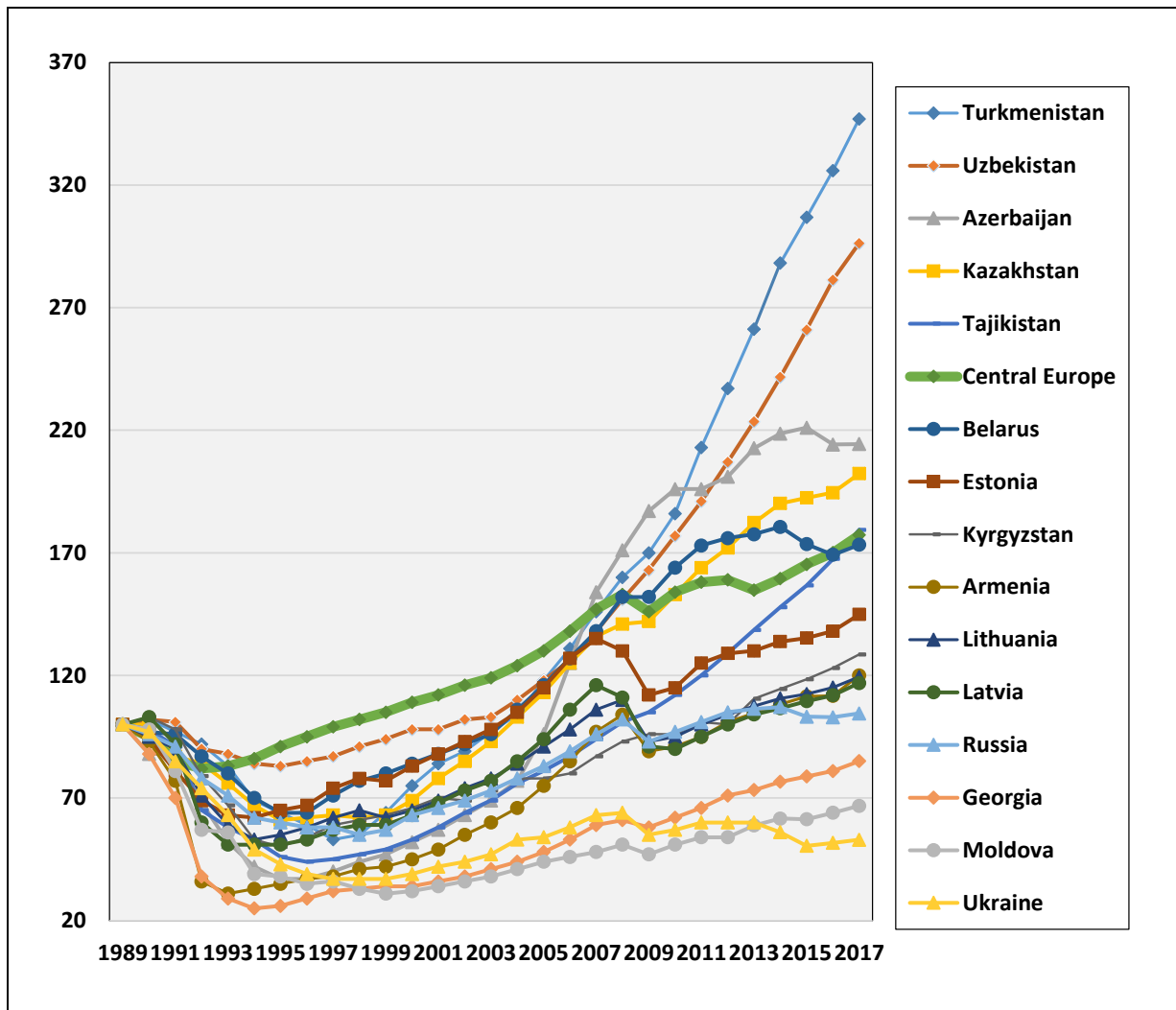
II. Overview of changes in the structure of economies in post-communist countries

After the collapse of the Union of Soviet Socialist Republics (USSR) and market-oriented reforms in successor states, the comparative performance in the post-Soviet space varied greatly (Figure 2). In retrospect, it is obvious that rapid economic liberalization did not pay off: many gradual reformers from the former Soviet Union in this region performed better than the champions of “big bang” liberalization – Baltic states and Central Europe. In Turkmenistan and Uzbekistan, for instance, privatization was rather slow – over 50% of their GDP is still produced at state enterprises, but their performance is superior to that of more liberalized economies. Resource abundance definitely helped resource exporters, such as Azerbaijan, Kazakhstan and Turkmenistan, to maintain higher incomes recently, when resource prices were high, but was not a *sine qua non* for growth – resource poor Tajikistan, as well as self-sufficient in fuel and energy Uzbekistan did much better than resource rich Russia (Figure 2).

As past research shows, the crucial factor of economic performance was the ability to preserve institutional capacity of the state (Popov, 2000; 2007; 2011 for a survey). The story of transition was very much a government failure, not a market failure story. In all former Soviet republics and in East European countries, government spending fell during transition and the provision of traditional public goods, from law and order to health care and infrastructure, worsened. This led to an increase in crime, shadow economy, income inequalities, corruption, and mortality. But in countries with the smallest decline in government spending (countries very different in other respects – from Central European states to China and Vietnam and to Uzbekistan), these effects were less pronounced, and the dynamics of output was better (Popov, 2011). China carried out gradual reforms since 1979, Vietnam – gradual reforms in 1986-89 and radical reforms in 1989,

but both countries managed to avoid the transformational recession² due to ability to preserve state institutional capacity (Popov, 2000).

Figure 2. GDP change in economies of the former Soviet Union, 1989 = 100%



Source: EBRD Transition Reports for various years. Central Europe is the unweighted average for Czech Republic, Hungary, Poland, Slovakia and Slovenia.

² While Vietnamese industry, excluding constantly and rapidly growing oil production, experienced some downturn in 1989-90 (-6% in 1989 and 0% in 1990) agricultural growth remained strong, so that GDP growth rates virtually did not fall (5-6% a year).

All former communist countries had centrally planned economies and all of them inherited distortions in industrial structure and interregional trade patterns created by central planning. Central planners gave high priority to industry, especially heavy and high tech industries (at the expense of resources industries and agriculture) and to self-sufficiency achieved through import substitution policy. As a result, secondary manufacturing industries took a high share of national economy (as compared to other countries with similar per capita incomes), but they were less efficient and competitive.

After the deregulation of prices and the opening of the economy, the market forces were allowed to influence the allocation of resources and most secondary manufacturing and high tech industries proved to be uncompetitive, so their output shrank. All former communist countries (with the exception of China and Vietnam) experienced transformational recession, deindustrialization and the decline in R&D potential in the 1990s after the transition to the market economy. There was also a rapid resource-alization after the transition to the market in 1992. An increase in the share of the service sector, especially trade and finance, at the expense of industry (deindustrialization) occurred in all post-communist economies.

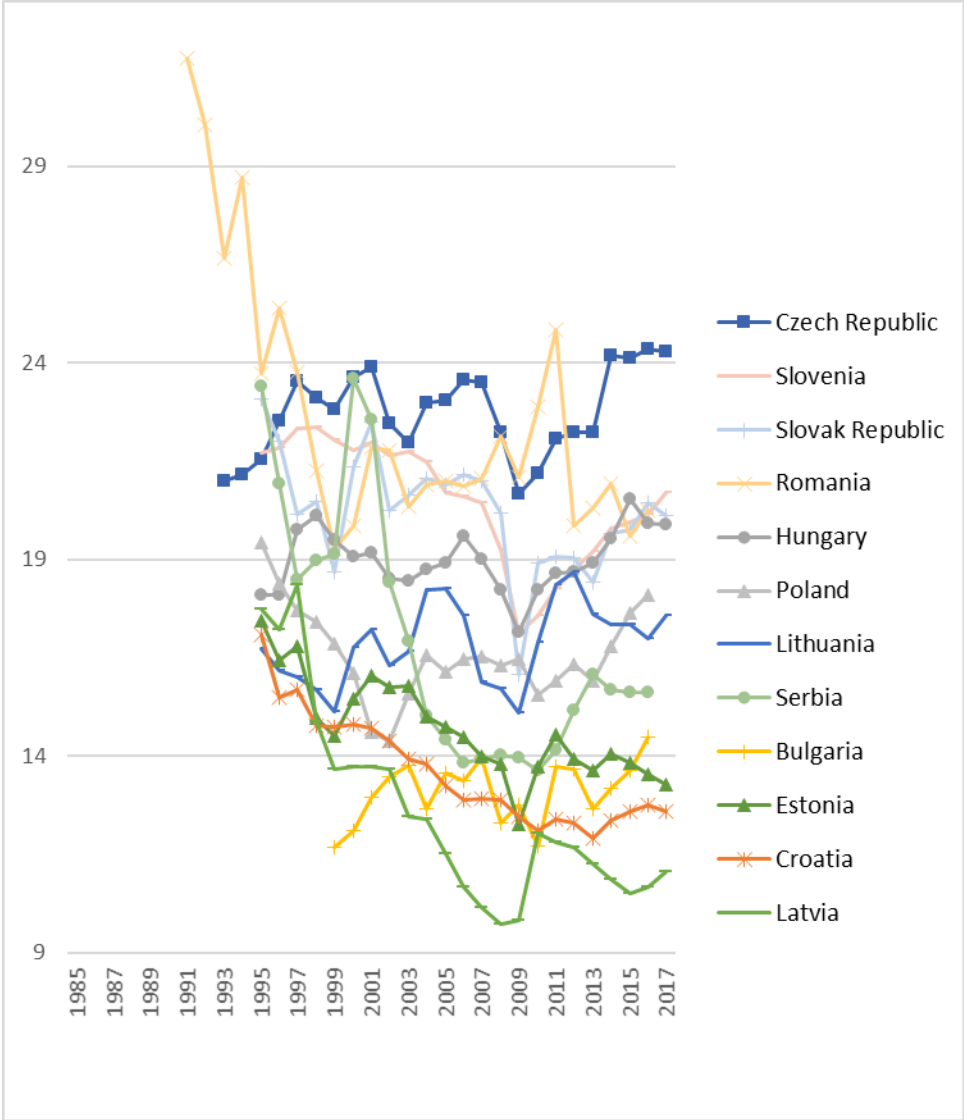
It seems, however, that in many of these economies deindustrialization went too far. In East European countries, especially in the countries of Central Europe (Czech Republic, Hungary, Poland, Slovenia, Slovakia) the decline was less pronounced than in many former Soviet Union (FSU) countries. In Tajikistan, for example, the share of services in GDP nearly doubled, increasing from about 30% in the early 1990s to 57% in 2010, whereas the share of manufacturing in GDP fell from 25% in 1990 to 10% in 2010 (Figures 3 – 5). In Armenia, the share of industry fell from 47% in 1991 to 25% in 2017, the share of manufacturing – from about 30% to 10%, whereas the share of services increased from about 20 to 30% in the late 1980s-early 1990s, and to over 50% in 2017.

In resource rich countries of FSU the decline of the share of manufacturing was most dramatic – it was driven not only by the expansion of the service sector, but also by the expansion of the resource industries that became most competitive with the new price ratios. The contrast with China and Vietnam – two countries with active industrial policies to support export oriented

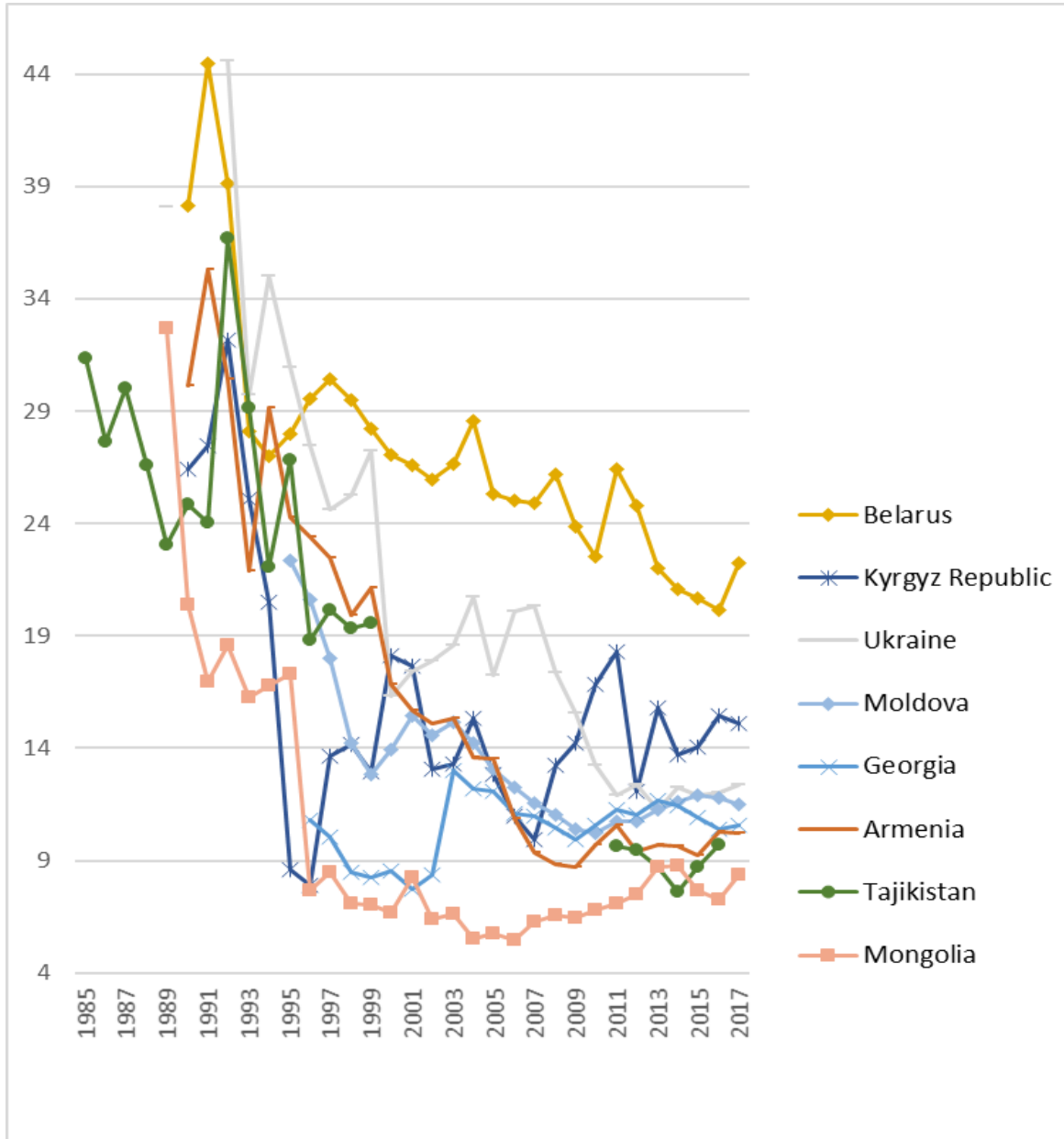
manufacturing – was extremely pronounced. In Azerbaijan, Kazakhstan and Russia the share of manufacturing fell below the level of much poorer Vietnam (15%), not to speak about China (29%).

Figure 3. The share of manufacturing in value added in post-communist transition countries between 1985 and 2017, %

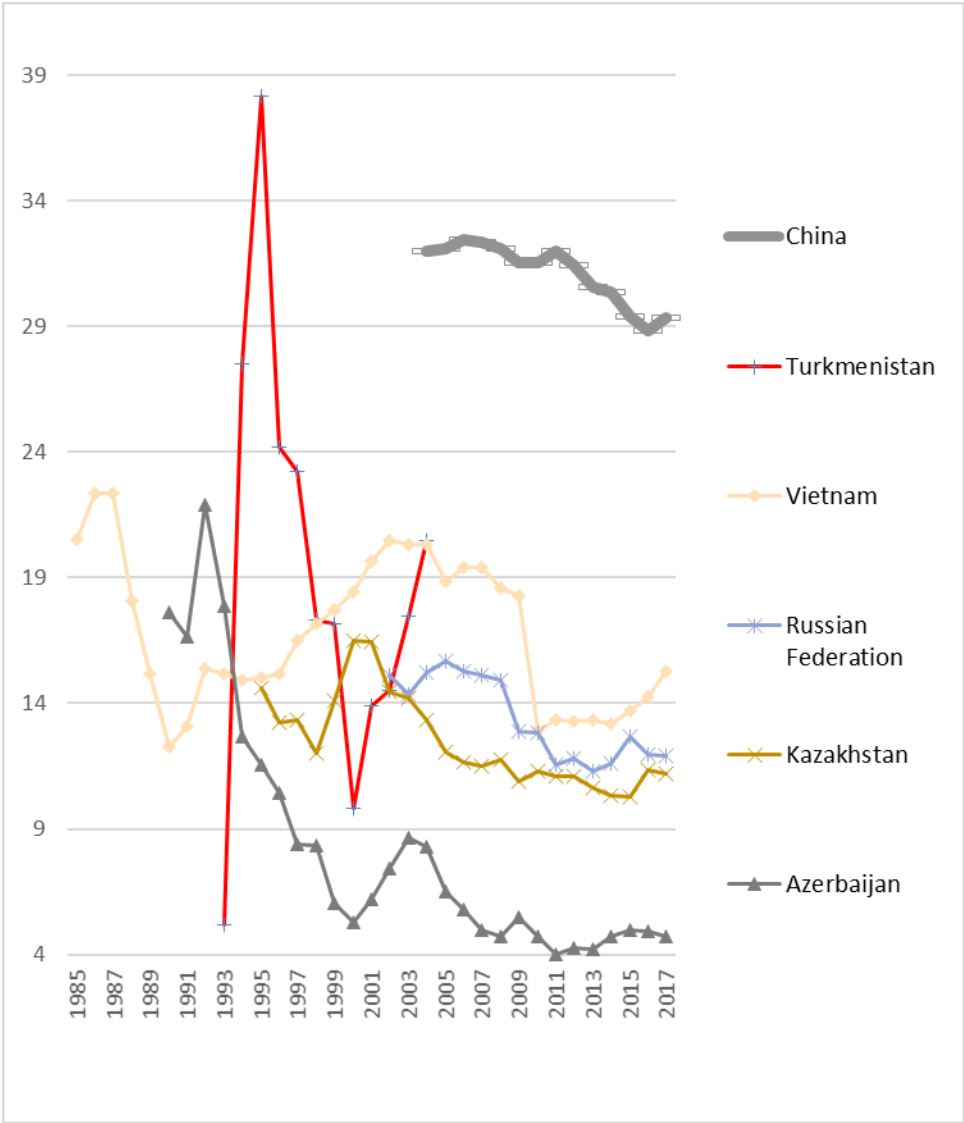
East European countries



Non-resource rich FSU and Mongolia



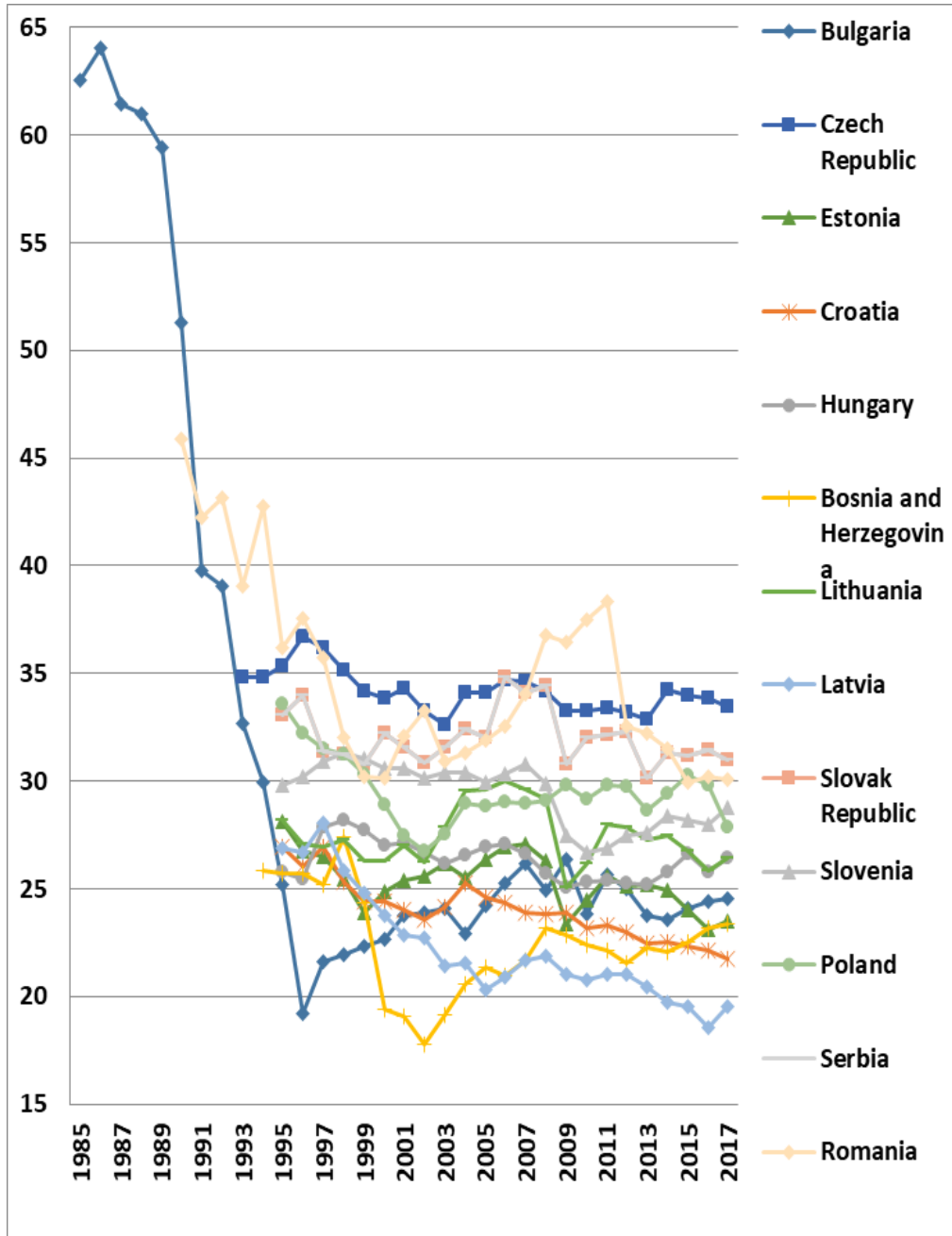
China, Vietnam and resource rich FSU



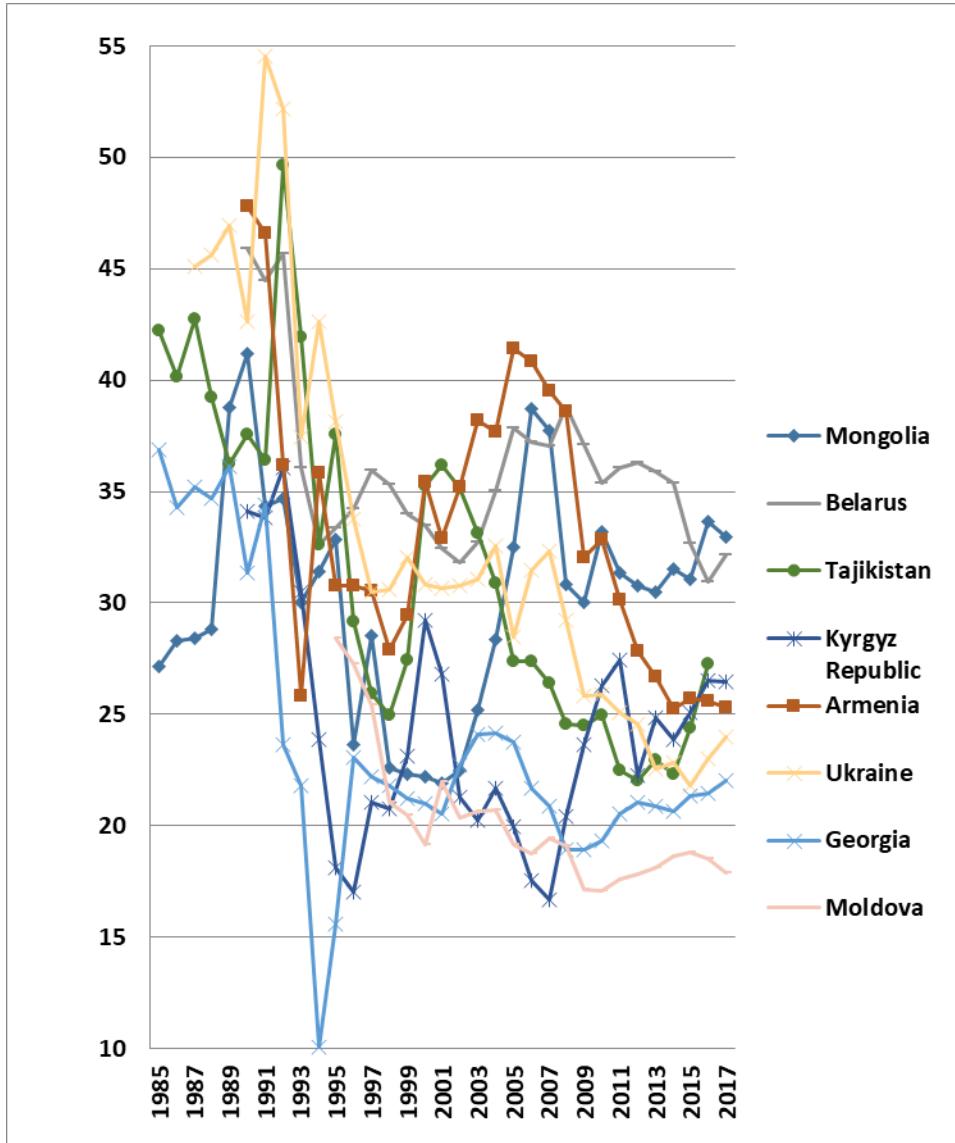
Source: WDI (there is no data for Uzbekistan in WDI).

Figure 4. The share of industry value added in GDP of post-communist countries in 1985-2017, %

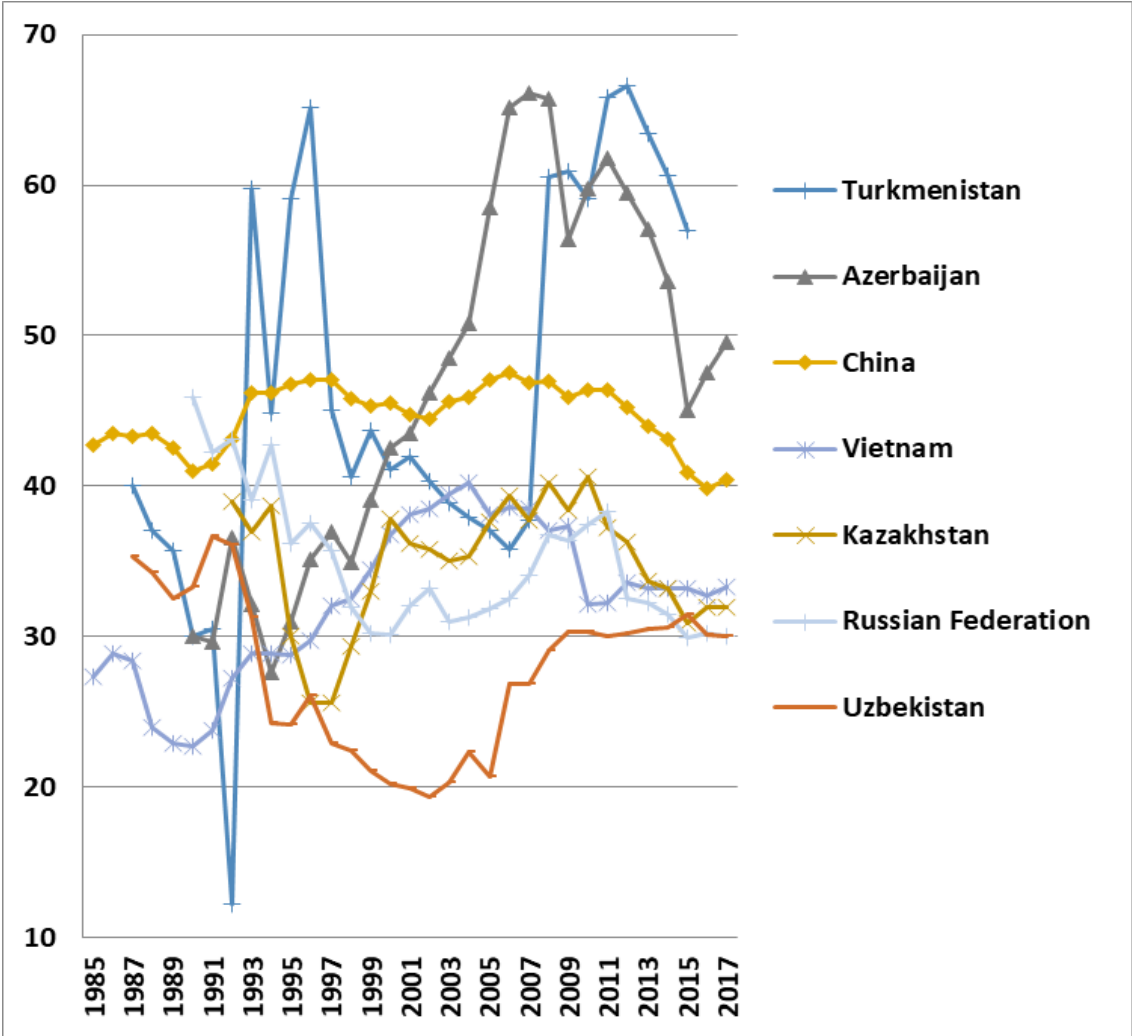
East European countries



Non-resource rich FSU and Mongolia

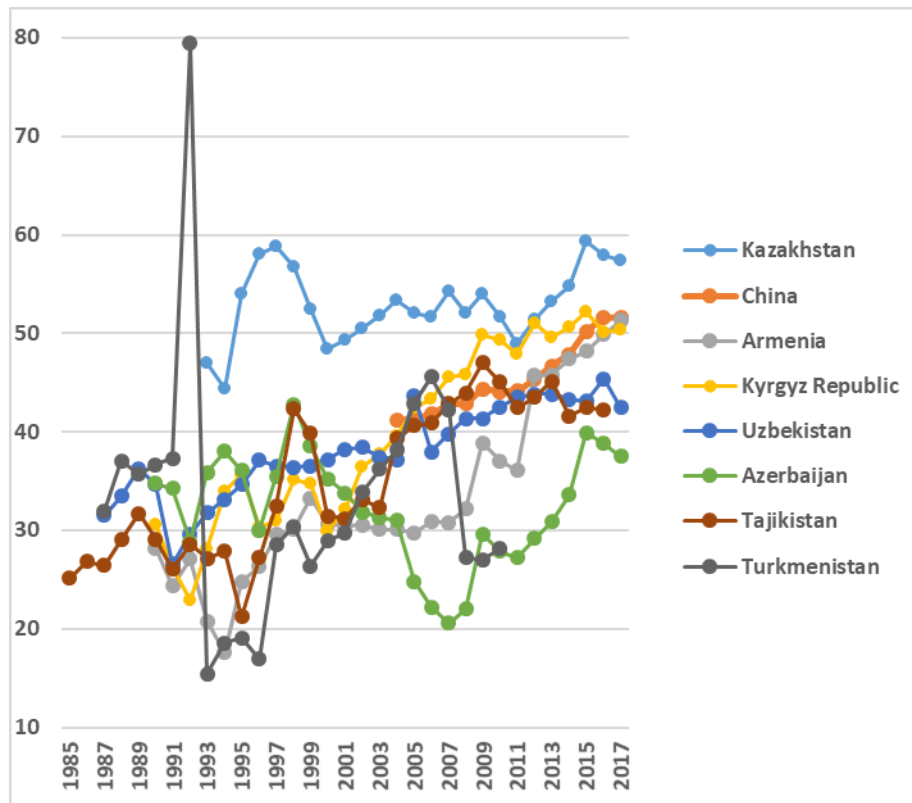


China, Vietnam and resource rich FSU



Source: WDI.

Figure 5. The share of value added in services in GDP in some post-communist countries, 1985-2017, %



Source: WDI.

Comparison of Figures 3 and 4 is quite instructive. The share of manufacturing in total value added (GDP) has declined in all most post-communist countries and is now at a very low level of 4 to 15% (Figure 3), whereas in the late 1980s it was at a level of about 20 to 30%. And of course this share is way lower than in China, where it stays at a level of about 30% in recent years, considerably higher than in other developing countries.

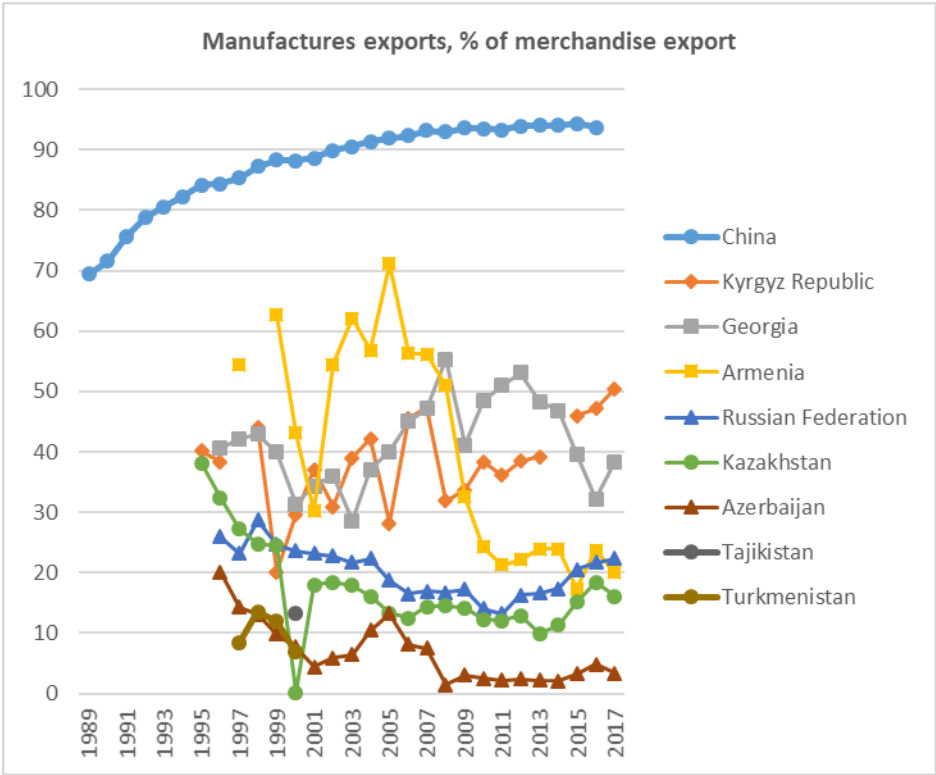
The share of industry as a whole (that includes not only manufacturing, but also mining and utilities – electric energy and gas distribution – Figure 4³), as a rule of thumb, despite sharp fluctuations, did not decline much in resource rich countries (Azerbaijan, Kazakhstan, Russia,

³ Unfortunately, there is no comparable statistics on the share of mining industry and utilities separately.

Turkmenistan), but declined in non-resource rich countries. The only exception is Uzbekistan, which has a medium resource abundance (self-sufficient in energy), but managed to increase the share of industry to over 30% after it fell from 35 to below 20% in 1987-2002 (Figure 4).

The structure of exports in most post-Soviet states also became more primitive in the recent two decades; the share of manufactured goods in total exports either declined or did not show any clear tendency towards increase (Figure 6). Perhaps surprisingly, Kyrgyzstan was the only country where the share of manufacturing exports in total export increased (Figure 6).

Figure 6. Manufactures exports, % of merchandise export, in some post-communist countries



Source: WDI.

III. Structural economic transformation and industrial policy

The crucial question of course is whether the government should participate in the process of structural shifts (and if yes, then how) or the structure of the economy should be totally determined by market forces. Government preferences (tax, trade, credit, other) to particular industries are called industrial policy and the huge literature on industrial policy (see Popov, 2011, for a summary) focuses on three key issues:

- Is industrial policy necessary for successful development or the market “knows” better, how to allocate resources?
- If industrial policy is needed, how to select industries that need to be supported?
- What are the appropriate tools / instruments to support particular industries?

To give one example on what industrial policy can do, consider a resource rich country that was previously (under central planning) favouring secondary manufacturing and now (after transition to the market and change in relative prices of resources and ready made goods) is experiencing under the pressure of market forces the reallocation of capital and labour from manufacturing to mining and primary manufacturing (oil, gas, electric energy, diamonds, steel, non-ferrous metals). Available calculations of total factor productivity show that in resource rich countries, such as Azerbaijan, Kazakhstan, Russia, Turkmenistan, Uzbekistan, it is much higher in mining than in other industries with the possible exception of trade and finance (Popov, 2000, 2014; Gharleghi, Popov, 2018b). No wonder that capital and labour are being reallocated from non-resource to resource industries. Should the government just observe the process without interfering, should it oppose the market forces, or should it try to promote structural shifts already under way to ensure that they happen faster? And what tools to use to promote the desirable shifts: subsidies, cheap credits, tax concessions, import tariffs or exchange rate management?

Page (2011) argues that Africa should industrialize. Without structural change it cannot sustain recent growth. Economies with more diverse and sophisticated industrial sectors tend to grow faster. But since 1980 Africa has deindustrialized. His paper shows that between 1975 and 2005

the size, diversity and sophistication of industry in Africa have all declined. He argues that an industrialization strategy containing two elements is needed.

- The first is straightforward: refocusing current investment climate reforms on infrastructure, skills, and regional integration. These actions alone will not be sufficient, however.
- Africa must also learn to compete through strategies to create an export push, develop industrial clusters, and attract task-based production.

The recent IMF paper (Cherif and Hasanov, 2019) highlights the key role of industrial policy in the Asian miracles, and for the US after the Civil War, Germany under Bismarck, and Japan after the Meiji Restoration. Jomo (2019) argues that East Asian industrial policies contributed to the economic miracle stories and, despite the current conventional wisdom, can be successfully emulated by other developing countries.

Stiglitz (2018), however, states that export-led growth was the model behind the 20th century growth miracles. There was unprecedented growth in East Asia—closing the gap in income per capita and standards of living with the advanced countries. That model won't be working in the future in the way and to the extent that it did in the past. He suggests a multi-prong strategy for developing countries, entailing a combination of manufacturing, agriculture, services, and natural resources.

It is always difficult, of course, to predict the change in the growth model. The famous example is that of Gunnar Myrdal (1968) that was extremely pessimistic about the prospects of Asian future growth in his “Asian Drama” exactly at a time when Asian dragons and tigers were taking off to propel themselves out of poverty and become economic miracles.

Industrial policy: which industries to support? As the UN ESCAP (2014) report on diversification states:

“Implementing strategic diversification requires an industrial policy – the selective promotion of particular economic activities over others. Here, new economic activities should be promoted that would encourage greater levels of product complexity and allow for further diversification in the future. Active public intervention is required that is aimed at supporting infant industries and creating the necessary complementary productive infrastructure, including industrial estates and economic zones. Intervention would also be aimed at encouraging marketing and export market development, together with other promotional measures under industrial policy” (p. viii).

Not only industrial structure is shaped by the development process; it has important implications for economic development as well. The Chenery hypothesis (Chenery, 1960) states that countries at similar levels of economic development should have similar patterns of resource allocation between sectors. But in theoretical models it is often assumed that there are externalities from industrialization and industrial export (Murphy, Shleifer, Vishny, 1989; Polterovich, Popov, 2004; 2005). There is growing evidence that countries which are more industrialized and countries with more technologically sophisticated industrial export are growing faster than others (Hausmann, Hwang, Rodrik, 2005; Rodrik, 2006).

The important stylized fact is that no economic miracle in the developing world was based either on agricultural or service industries. A Canadian economist, Harrold Innis, was the author of the staple theory of economic development (Innis, 1956). He claimed that Canadian economic (and not only economic, but also social and cultural) development was determined by exports of staple goods: in the chronological order since the 17th century – furs, fish, lumber, wheat, mined metals, and coal. It could be also claimed that some countries that are now members of the “rich country club” made their fortunes on resource and agricultural exports, the examples would be (in addition to Canada) Australia, New Zealand and the United States. But in the twentieth century, after the income gap between developed and developing countries emerged, cases of successful catch up development (Popov, Jomo, 2017) were associated with manufacturing exports, not with exports of agricultural or resource commodities. Oil rich countries, like Persian Gulf states or Equatorial Guinea, that now achieved the levels of per capita income in developed countries, did so due to terms of trade improvement (increase in fuel prices), not due to exceptionally high rates of growth of output (Oman is the exception, see footnote 1).

The reduction of the share of industry and manufacturing in GDP and the increase of the share of services is an objective process; but in the fast-growing countries (e.g., China), this decline was slower than in others with similar level of development (Figures 3-5). The increase in the share of machinery and equipment in manufacturing output, as in China, usually accompanies rapid growth or even becomes the engine of growth. We are not aware of cases of rapid growth ("economic miracles") that are based on an accelerated growth of the service sector.

The question "What are the particular manufacturing industries which could become the engine of growth?" is a difficult one (Popov, Chowdhury, 2016). Unfortunately, economic theory does not suggest any definite clues, with the exception of the idea that these industries should have the highest externalities, i.e. their social returns should be higher than private returns. Yet, it is not easy to measure these externalities. Nevertheless, upon examination of the literature and the experience of countries with industrial policy, it is possible to isolate methods which can aid in identification of industries that should be supported.

For example, one can support several industries which seem promising with the condition that assistance ends, if the increase in export is not achieved within, say, five years. This is called "EPconEP" – effective protection conditional on export promotion (Jomo, 2013). Economic policymakers in this case are similar to the military commander who begins an offensive on several fronts, but throws reserves where there has been a breakthrough.

Alternatively, one can attempt to predict the specific industries where limited investment can give the greatest effect leading to the creation of globally competitive production. Most likely, these would be industries that lag behind in total factor productivity in the most advanced countries, but not so much as other industries.

It is also possible to choose at random. In this case, it is important to be consistent by embarking on the path of support for a particular industry without withdrawal even if there is no immediate success or breakthrough in world markets. After all, the modern theory of international trade

explains country specialization not by comparative advantages, but rather by "learning by doing".

If a country does not have any comparative advantage, similarly to post-war Japan for example, it is necessary to create them ("dynamic comparative advantages") by mastering the production of goods that have not been produced before. Supporting such production and consistently encouraging exports, without giving up for some time, is likely to have the learning by doing effect, allowing the country to gradually become competitive.

There are two opposing views on how advanced in technology the industries supported in the framework of industrial policy ought to be. Justin Lin, former chief economist of the World Bank, developed the idea of comparative advantages following (CAF) and comparative advantages defying (CAD) industrial strategy. The best result, according to his argument, could be achieved if countries develop industries that are consistent with their comparative advantages, as determined by their endowment structure, and do not try to overleap necessary stages aiming at exporting the goods which are exported by very advanced countries (Lin, 2011). Oil rich countries, like Kazakhstan and Azerbaijan, for instance, according to this logic, should aim at developing heavy chemistry, not computer industries.

This view is consistent with the "flying geese" paradigm: as more competitive countries move to more advanced types of exported products; the vacated niches are occupied by less developed countries. It is known that relatively poor countries began to export textiles and shoes, then moved on to the export of steel products and heavy chemicals, then to the export of cars and electrical consumer products such as washing machines and refrigerators, then to consumer electronics and computers. In this case, the newcomers could benefit from the experience of other countries by trying to replicate their success.

The transition from one exported good to the other could be dictated by the cycle of innovations. As Lee (Lee, 2013) suggests, the cycle is short for electronics and long for pharmaceuticals and chemicals. This may explain why East Asian countries which focused mostly on industries with

short cycles managed to avoid growth slowdowns while moving from one export niche to another.

The debate between Justin Lin and Ha-Joon Chang (Lin, Chang, 2009) is telling in this respect. The latter was defending the idea of CAD industrial policy which favours industries that defy the country's comparative advantages. Such industries take time to develop, yet they could be worthwhile. For example, "Japan had to protect its car industry with high tariffs for nearly four decades, provide a lot of direct and indirect subsidies, and virtually ban foreign direct investment in the industry before it could become competitive in the world market. It is for the same reason that the electronics subsidiary of the Nokia group had to be cross subsidized by its sister companies for 17 years before it made any profit. History is full of examples of this kind, from eighteenth-century Britain to late twentieth-century Korea" (Lin, Chang, 2009).

The difference between Chang's and Hausman-Hwang-Rodrik's position ((Hausmann, Hwang, Rodrik, 2005; Rodrik, 2006) may be the subtle distinction between the CAD strategy and the policy to promote high tech industries and R&D in relatively poor countries. The CAD strategy does not necessarily imply a transition to more technologically sophisticated industries, but rather, to industries that are not linked to comparative advantages of a particular country. Theoretically, it could be a transition from chemicals to machine building with the same, or even lower, level of R&D intensity and technological sophistication. Hausman-Hwang-Rodrik's idea is that externality benefits from the production and export of new products are proportional to the degree of their technological sophistication, which is measured by the comparison of export structures of rich versus poor countries. High income countries export on average more high tech products. Developing high tech production in poor countries may be costly, yet the returns from such a policy could be greater. It may well pay off for a relatively poor country to make "a big leap forward" by investing heavily in the education of the labour force and high tech industries, bypassing the intermediate stages of producing goods with medium research intensity.

Uzbekistan, for instance, started to invest massively into the development of auto industry and heavy chemistry at such a stage of development (low income country, not even a middle income

country), at which other countries export mostly resource goods, textiles and leather products. It remains to be seen whether these investments would be justified (BOX 1).

BOX 1. WHAT UZBEKISTAN KNOWS ABOUT INDUSTRIAL POLICY THAT OTHER COUNTRIES DO NOT KNOW

Uzbekistan in recent two decades has been an extremely successful economy – high growth (8%), low unemployment and reasonable macro-economic stability, low domestic and international debt, relatively low inequality. Even more impressive are the structural shifts that happened in recent 30 years after Uzbekistan became an independent country: (1) decrease in production and export of cotton (that was previously a mono culture), increase in food production and achievement of self-sufficiency in food, (2) achievement of self-sufficiency in energy and becoming a net fuel exporter; (3) increase in the share of industry in GDP and the share of machinery and equipment in industrial output and export (a competitive export oriented auto industry was created from scratch) (Popov, 2013; 2014).

In recent years Uzbekistan promotes heavy chemical industries (production of synthetic fuel and polypropylene goods from natural gas). This is the next stage of industrial policy after reaching food and energy self-sufficiency and successful auto industry development. In 2011 it became 15th country in the world to launch high speed train line between Tashkent and Samarkand (it was continued to Bukhara and Karshi in 2015 and 2016). The train is made by Spanish Talgo and runs a distance of 600 km between Tashkent and Bukhara in 3 hours 20 minutes.

Uzbekistan's development achievements, even though not as spectacular as that of China, have been due to deliberate government policies. True, Uzbekistan enjoyed favourable external environment, but its rapid growth is due to reasonable macroeconomic stability and industrial policies rather than the result of only market reforms that triggered growth conforming to its factor endowment and/or natural comparative advantages.

What makes Uzbekistan different and even unique is a policy of low exchange rate. It promotes export oriented development – like in Japan in the 1950s-70s, South Korea in the 1960-80s, China and ASEAN countries since the 1990s (Dollar, 1992; Easterly, 1999; Polterovich, Popov, 2004; Rodrik, 2008; Bhala, 2012). Undervaluation of the exchange rate via accumulation of foreign exchange reserves in fact becomes a powerful tool of industrial policy creating stimuli for tradables goods at the expense of non-tradables (Greenwald & Stiglitz, 2013). Former communist countries of Eastern Europe and USSR did not carry out such a policy; on the contrary, their exchange rates were and often are overvalued, especially in countries that export resources (they suffer from the Dutch disease).

Since 2000 Uzbekistan is probably the only country in the post-Soviet space that carries out predictable and **gradual nominal devaluation of the currency** which is a bit larger than needed to counter the differences in inflation rates between Uzbekistan and its major trading partners, so that real effective exchange rate depreciates slowly. The real exchange rate of the som versus the US dollar has appreciated a bit, though not as much as currencies of other countries. However,

the real *effective* exchange rate of som (i.e. with respect to currencies of all major trading partners) decreased by over 50% in 2000-07 – a sharp contrast with other countries of the region on which data are available.

he relatively successful economic performance is even more impressive given that Uzbekistan is not a major oil and gas exporter and is one of two double landlocked countries in the world – that is, a country completely surrounded by other landlocked countries, – the other being Liechtenstein.

Uzbekistan still remains a poor country, with PPP GDP per capita of below 9 \$US 6000 in 2014 against over \$20,000 in Russia and Kazakhstan, \$17,000 in Azerbaijan, and over \$14,000 in Turkmenistan; and many Uzbeks are migrating to find a job in Russia and not vice versa. It is important, however, to distinguish between the growth rates and the level of per capita income. It is necessary to separate the effects associated with the dynamics of output from the effects of the terms of trade and financial flows. At the end of the Soviet period, in the 1980s, real incomes in Uzbekistan were about half of the Russia's level. After the collapse of the USSR real incomes in non-resource republics fell dramatically due to the change in relative prices – oil, gas and other resources became several times more expensive relative to ready made goods (Uzbekistan was a large importer of oil and its trade with all countries, including other Soviet republics, if recalculated in world prices, yielded a deficit of 9% of GDP – (IMF, 1991). To add insult to injury, with the collapse of the Soviet Union financial flows from Moscow dried up (in 1990 only inter-budgetary transfers –from the Union budget – amounted to 31% of the revenues of the republican budget – IMF, 1991).

And diversification in industry and expansion of manufacturing exports was mostly the result of protectionism and government / central bank policy of low exchange rate. Like China, Uzbekistan maintained a low (undervalued) exchange rate due to rapid accumulation of foreign exchange reserves. In addition, there were non-negligible tax measures to stimulate exports of processed goods (50% lower tax rate for manufacturing companies that export 30% and more of their output). Although comparable statistics from WDI for Uzbekistan is lacking, national statistics suggests that the share of non-resource goods in exports increased to over 70% against less than 30% in 1990, before independence (Popov, 2013; 2014).

Rodrik, et al. (2016) consider two sources of productivity growth – within the industry and due to the structural shifts, i.e. due to reallocation of resources to more productive industries. What is more efficient – to rely on productivity growth within existing industries or to promote structural shifts from less productive to more productive industries?

Similarly, Rodrik (2012) describes two approaches to development - bottom-up and top-down. The former focuses directly on the poor, and on delivering services – for example, education, health care, and microcredit – to their communities. This tradition's motto could be,

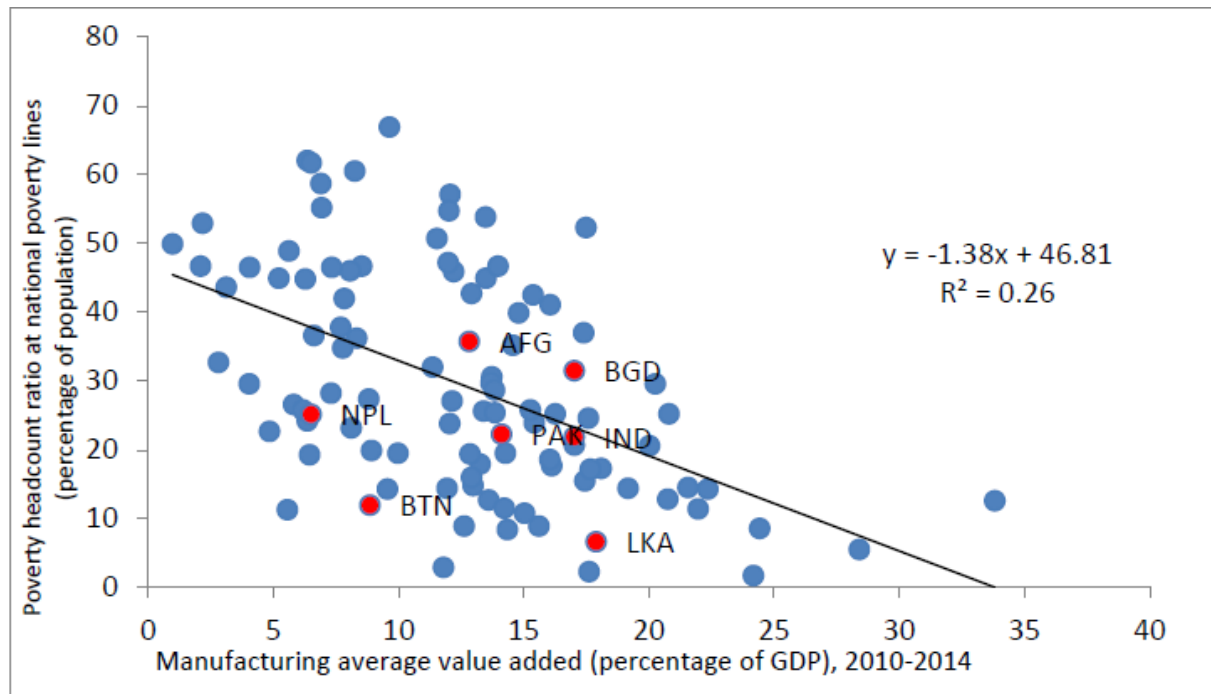
"Development is accomplished one project at a time." The other approach takes an economy-wide perspective. It emphasizes broad reforms that affect the overall economic environment, and thus focuses on areas such as international trade, finance, macroeconomics, and governance.

The first approach uses widely randomized controlled trials as an instrument that could allow formulating good policies – vaccinations and microcredit, additional teachers in schools and mosquitoes bed nets dipped in insecticide – these and others are considered to be small projects that are leading to big breakthroughs. But without reforms at macro level it is often impossible to ensure the efficiency of micro projects (Reddy, 2013). If assistance provided for particular investment projects merely crowds out government or private investment in other areas, the macro impact of the assistance will be zero.

As Rodrik (2012) writes, “poverty is often best addressed not by helping the poor be better at what they already do, but by getting them to do something different”. This latter approach is exactly the one defended here: the global South can gain much more from economy wide reforms aimed at promoting export-oriented growth based on domestic savings than from meagre official foreign assistance or even from all foreign financing. Western benevolent attitude to macro-structural reforms would be more beneficial to catch up development than a thousand minor specific development projects with most noble goals.

UN ESCAP study (UN ESCAP, 2016) suggests that there is a strong link between the share of manufacturing in GDP and the share of poor in total population (Figure 7). It predicts that an industry-oriented structural transformation, enhancing agricultural productivity through sustainable agriculture and overall efficiency improvements through innovations have the potential to lift an additional 71 million people out of poverty, create 56 million additional jobs in South Asia and boost GDP by 15 to 30% by 2030 over and above the business-as-usual scenario.

Figure 7. The relationship between manufacturing value added and poverty



Source: UN ESCAP, 2016.

Industrial policy: what tools to use? All tools of industrial policy can be divided into two broad categories – selective and non-selective. Selective tools are those that apply to specific industries, regions, companies, but not to the other. The examples would be import duties, subsidies, tax concessions, etc. The non-selective tools would be government investment into infrastructure, education, health care, law and order, etc. that help to create better business climate for all businesses. Management of the exchange rate is another important tool of non-selective industrial policy – the maintenance of the undervalued real exchange rate via accumulation of foreign exchange reserves (above the normal amount needed to ensure smooth trade and capital account transactions) is the important instrument of promoting economic growth based on export of tradable goods, although at the expense of non-tradables (Polterovich, Popov, 2004).

There are important differences between import duties and devaluation of the exchange rate. As Larry Summers once observed: "A ten percent decline in the dollar exchange rate is equivalent to a ten percent tariff on all imported goods and a ten percent subsidy for all exported goods (The New Republic, 25 January, 1988, p. 14). Import duties raise the real exchange rate (level of prices in the country as compared to the world), whereas real devaluation lowers the real exchange rate. Besides, "exchange rate protectionism" is more efficient policy to stimulate growth because decisions on import duties and government taxes/spending are affected by a poor quality of institutions (corruption and low efficiency of implementation), whereas low exchange rate policy is indiscriminate and nonselective by nature: it cannot be captured and "privatized" by particular interest groups, what makes it especially efficient growth promoting instrument in poor and middle income countries that generally suffer from corruption (Polterovich, Popov, 2004).

As it is stated in the UN flagship report (UN WESP, 2016), "reserve accumulation can have positive externalities on the production and export of tradables and industrial development and can thus be a feature of the country's development model. Undervaluation of the exchange rate can increase the competitiveness of exports, without the need for sector- or firm-specific subsidies or interventions".

As Griffith-Jones and Ocampo (2010) observe, the rationale for the accumulation of foreign exchange reserves "is usually found in either one of two explanations: the "competitiveness" (or, in more pejorative terms, "mercantilist") and the "self-insurance" motives. This mercantilist view that undervaluation of exchange rate via accumulation of foreign exchange reserves is in fact an industrial policy – aimed at promoting export oriented growth by benefiting the producers of tradables and exporters at the expense of the producers of non-tradables and importers – is gaining support in the literature (Dollar, 1992; Easterly, 2001; Rodrik, 2008; Bhalla, 2012; Greenwald, Stiglitz, 2013). If there are externalities from export and production of tradables (industrialization, development of high tech sectors), undervaluation of the exchange rate resulting from the accumulation of reserves is an efficient way to provide a subsidy to these activities and this subsidy is automatic, i.e. does not require a bureaucrat to select possible beneficiaries.

In short, this is a non-selective industrial policy promoting export and production of tradables that seems to be quite efficient especially in countries with high corruption and poor quality of institutions. Thus, accumulation of reserves and undervaluation of the exchange rate may be good for long term growth. The formal model demonstrating how the accumulation of reserves can spur growth, as well as the empirical evidence, is presented in Polterovich and Popov (2004). It is also shown that accumulation of reserves leads to disequilibrium exchange rate, which in turn causes the increase in export/GDP and trade/GDP ratios, which stimulates growth. There is strong evidence that accumulation of reserves can spur long-term growth in developing countries, although not in rich countries (Polterovich, Popov, 2004).

In practical terms, there are no formal limits for the accumulation of reserves by developing countries, but “exchange rate protectionism” can result in “beggar-thy-neighbor policies”: obviously all countries cannot exercise these policies at the same time to achieve undervaluation of their exchange rates. If all countries use these policies, all will lose, and, on top of that, for developed countries this policy does not work. But for developing countries it works, and there are good reasons, why these countries should have sufficient policy space to use this tool to promote catch up development. Trade surpluses resulting from undervaluation of the exchange rate due to reserve accumulation may lead to what is now called “global imbalances”, driving the other countries into debt, but there is some room for such a scenario that in a sense will only reverse the opposite trend of the 19-20th centuries (US enjoyed a trade surplus for nearly 100 years after the Civil War of the 1860s driving many developing countries into debt – see Popov, 2010 a, b; 2011 for details).

It remains to be said that the policy of reserve accumulation is often considered to be self-defeating because in order to avoid inflation (that would eat up the impact of devaluation on real exchange rate) it is necessary for the monetary authorities to carry out sterilization policy, i.e. to sell government bonds in order to neutralize the impact of purchases of foreign currency on money supply. But sales of government bonds lead to higher interest rates that in turn attract capital from abroad that contribute to increase in foreign exchange reserves that again should be sterilized, which creates a vicious circle. That is why economists talk about “impossible trinity”:

a country cannot maintain at the same time an open capital account, managed exchange rate and independent monetary policy.

But many developing countries exercise control over capital flows (China and India would be the prime examples) and even without such a control, capital mobility – especially for large economies – cannot be considered perfect. In practice, as the statistics shows, the accumulation of foreign exchange is financed through government budget surplus and debt accumulation, but not through money printing. That is to say, most countries that accumulated reserves rapidly exhibited low inflation, and low budget deficit (or budget surplus), but increasing holdings of government bonds by the public (see Polterovich, Popov, 2004).

Industrial policy in resource rich countries. Resource abundance logically should be a plus for economic development, but very often it becomes a constraint, “resource curse” instead of “resource blessing” (Sachs, Warner, 2001; Sala-i-Martin, Subramanian, 2003; Stiglitz, 2005; Polterovich, Popov, Tonis, 2007; 2008; 2010). Whereas resource rich countries have generally overvalued exchange rate (Dutch disease), they also maintain a relatively low level of domestic prices for fuel. This is another important instrument of industrial policy that has at least two implications: first, like the undervaluation of the RER, low domestic prices for fuel provide competitive advantages to domestic producers and stimulate exports and production (especially of energy intensive products); second, low fuel prices lead to energy waste due to higher energy intensity, and hence imply and higher costs.

Today in all resource rich post-communist countries, Russia being the primary example, domestic prices for fuel are kept below the world market level through export taxes (on exports of fuel) and direct restrictions on exports (like access to the pipeline). As a result, domestic prices for oil and gas are considerably lower than in the world, and this allows energy intensive industries to flourish. In Russia, for instance the production of energy intensive aluminium is very competitive due to low energy prices – aluminium is one of Russia’s top export commodities, even though half of it is produced from imported bauxites.

The argument developed in Polterovich, Popov, Tonis (2007; 2008; 2010) is that the undervaluation of exchange rate is a preferable tool of the industrial policy for resource rich countries as compared to the keeping domestic fuel and energy prices below the world market level. It allows to stimulate export oriented development without high energy intensity. In order to make a transition to a new policy, a delicate policy manoeuvre is needed. Theoretically it is possible, but requires good quality of bureaucracy:

- Gradual increase in domestic fuel and energy prices (via phasing out export tax + lifting access to pipeline restriction) up to the world level,
- Higher taxes on fuel companies to capture windfall profits from increasing domestic fuel prices,
- Spending of increased budget revenues on infrastructure and non-tradables,
- Lower real exchange rate (via accumulation of foreign exchange reserves and import subsidies) to compensate losses of non-fuel industries from higher domestic fuel prices.

IV. Innovations, research and development

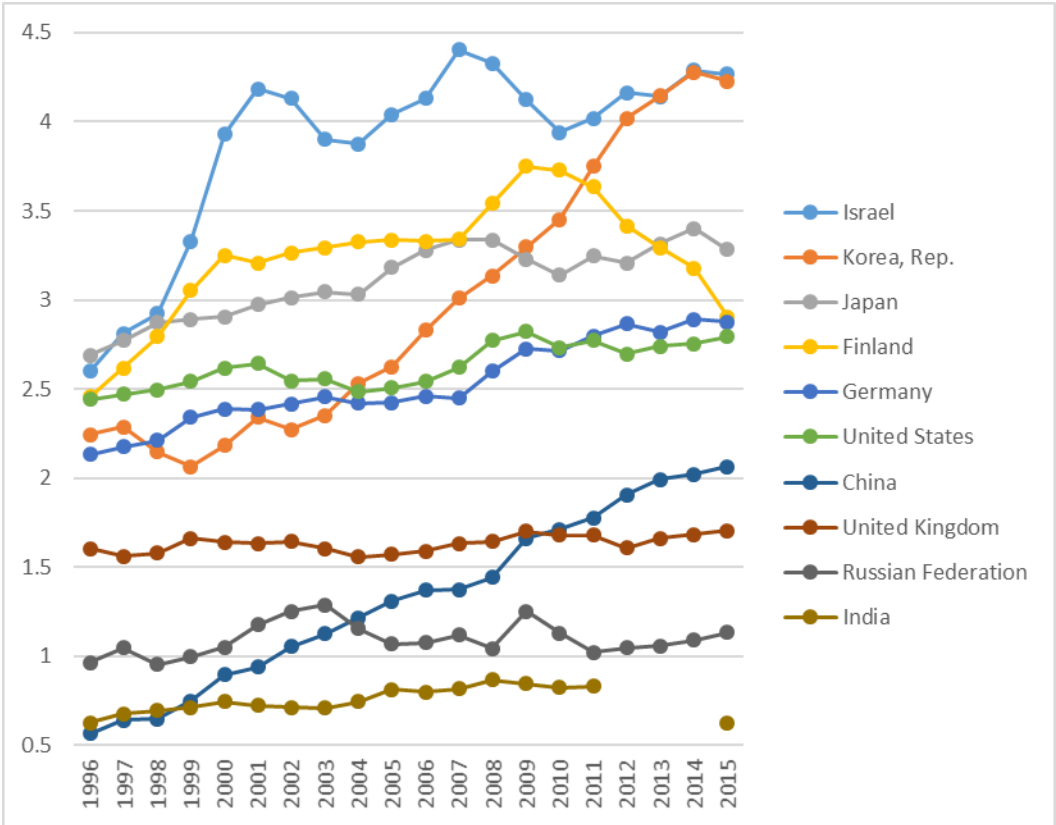
Should countries which are behind the technological frontier invest into adoption of already existing technologies or should they aim to develop completely new technologies and products? The notion of the “advantages of backwardness” introduced by Alexander Gerschenkron (1962) implies, among other things, that relatively backward economies can grow rapidly by investing in, and adopting already existing technologies.

Justin Lin believes that countries should not leap over the consecutive stages by going from processing agricultural goods directly to high tech industries (see previous section). He suggests, for instance, that Uzbekistan could gain greater benefits by developing less sophisticated industries such as food, textile and leather goods.⁴ The arguments against, however, are supported by the examples of Israel and South Korea which, at the end of the 20th century, mastered the production of high tech goods (electronics) and are now leading the world in the share of R&D expenditure in GDP (Figure 8).

⁴ Personal communication with Justin Lin. In the general form the theory is presented in (Lin, 2011).

In contrast, Ricardo Hausmann, Jason Hwang and Dani Rodrik (Hausmann, Rodrik, 2006; Hausmann, Hwang, Rodrik, 2005; Rodrik, 2006) hypothesize that the more technologically sophisticated the export structure of a country is, the greater are the stimuli for economic growth. China in 1992 and 2003 for example, had the greatest gap between the hypothetical per capita income (computed based on the technological sophistication of export structure) and the actual per capita income. That is to say, the structure of the Chinese exports was similar to that of countries with several-fold higher levels of economic development, and this gap stimulated economic growth.

Figure 8. R&D expenditure in selected countries, % of GDP



Source: WDI.

In another article (Hausmann, Rodrik, 2006) the process of transition from the production and export of one group of goods to the other is compared to the movement of monkeys in a forest from closer to more distant trees in search of food. The trees rich with fruits are far away,

whereas closer trees do not have as much. Thus, the monkeys must compare the movement costs with the benefits of reaching the more fruit abundant trees. Like the monkeys, firms and society as a whole must compare the cost of mastering the new output and export (low for “nearby” industries which are close to existing technologies and high for “far away” industries with totally new technological processes) with the benefits (externalities) associated with developing particular industries (theoretically, the benefits are higher, the more sophisticated these industries are).

Today the share of R&D expenditure in GDP in most post-communist economies is lower than 1% (except for several East European countries, Russia and China – table), no higher than in countries with similar level of economic development, whereas in the communist past the opposite was normally true. It is an important research question, what is the optimal level of R&D spending at different stages of development. The answer probably is specific for every country: it depends on the structure of the national economy and the share of industries that are close to the technological frontier.

Table. R&D expenditure in post-communist countries as a % of GDP in 2015

Country	R&D as a % of GDP
Slovenia	2.2
China	2.1
Czech Republic	1.9
Estonia	1.5
Hungary	1.4
Slovak Republic	1.2
Russian Federation	1.1
Lithuania	1.0
Poland	1.0
Bulgaria	1.0
Serbia	0.9
Croatia	0.9
Latvia	0.6
Ukraine	0.6
Belarus	0.5
Romania	0.5
Macedonia, FYR	0.4
Vietnam	0.4

Moldova	0.4
Georgia	0.3
Armenia	0.3
Azerbaijan	0.2
Bosnia and Herzegovina	0.2
Uzbekistan	0.2
Albania	0.2
Kazakhstan	0.2
Mongolia	0.2
Kyrgyz Republic	0.1
Tajikistan	0.1

Source: WDI.

V. State versus private sector, government, private and foreign investment

There is a debate, what is the crucial factor behind economic fiascos – market failure or state failure. The dominant story in the profession is that economic breakthroughs are achieved only due to a vital and vivid private sector, which is dynamic and entrepreneurial, oriented towards innovations and is not afraid of risk taking, whereas the state is clumsy, inefficient and even reactionary, and restrains private initiatives. It is said that the private sector contributes to economic growth and poverty eradication through the building of productive capacity, creation of decent jobs, promotion of innovation, economic diversification and competition. In landlocked developing countries, the private sector is actively involved in activities related to transit and trade facilitation, including as traders, freight forwarders, insurance providers and transporters, and the sector is a source of tax revenue and domestic investment and is a partner for foreign direct investment. Public-private partnerships can play an important role in infrastructure development (Almaty Programme of Action for Landlocked Developing Countries (2013)).

Another story, however, is that of the entrepreneurial state: Mazzucato (2013) provides ample evidence that technological breakthroughs are due to public and state funded investments in innovation and technology, and that private sector only finds the courage to invest after an entrepreneurial state has made the high-risk investments.

Rodrik and Subramanian (2014) talk about the attitudinal shift on the part of the national government towards a pro-business (as opposed to the pro-liberalization approach) and attribute the acceleration of Indian economic growth to this factor: they show that the acceleration of growth occurred since 1980 and not since 1991, when liberalization reforms were carried out.

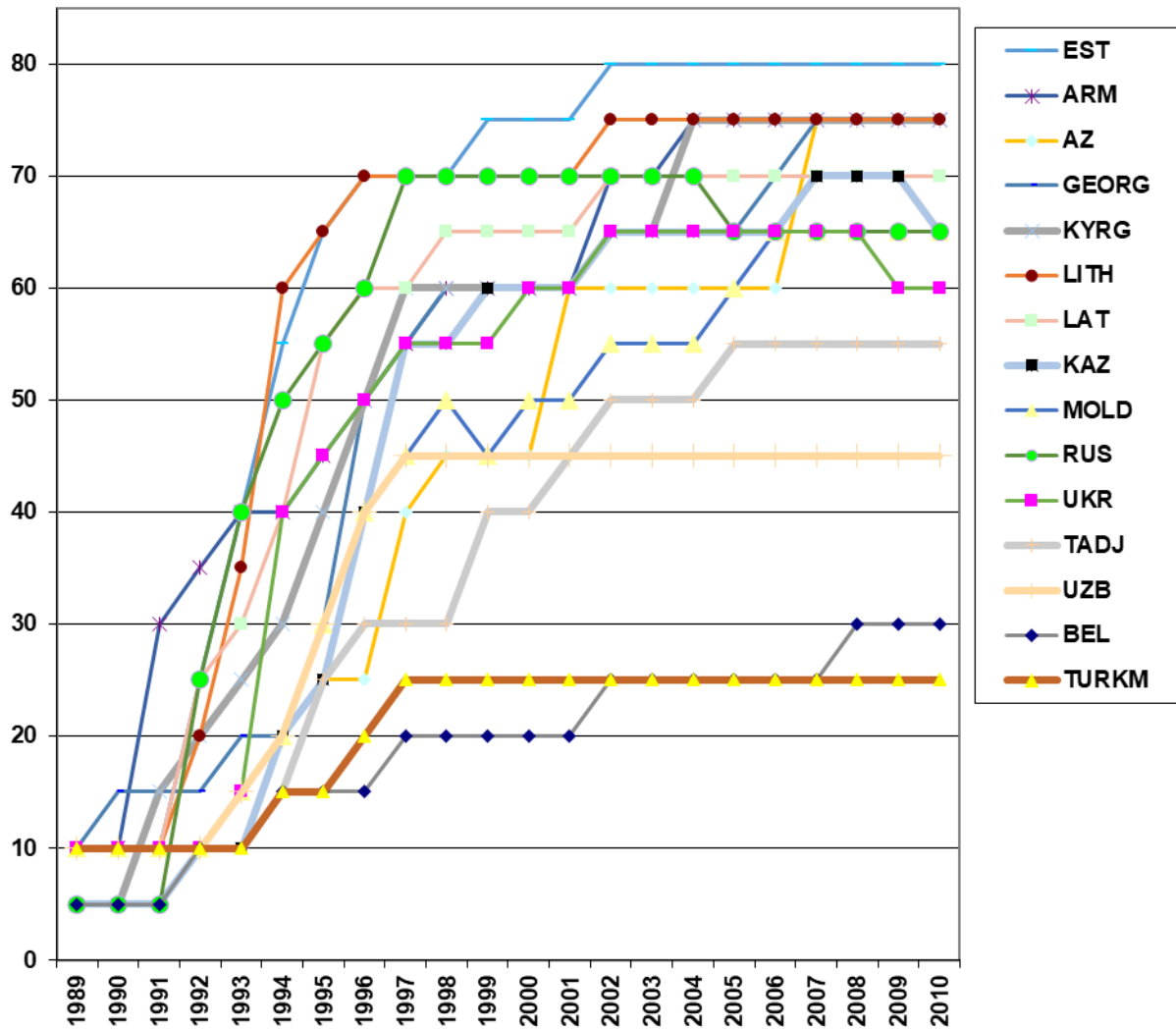
The problem in many developing countries in general and in post-communist countries in particular is that private sector often does not take the initiative in promoting development due to actual or alleged “poor investment climate”. As can be seen from Figure 9 (and comparing it to Figure 2), there is no correlation between the share of the private sector in the economy and the GDP dynamics. Or, if there is a correlation, it is rather negative than positive: more privatized economies are doing worse than less privatized.

Some studies suggest that government investments do not crowd private investment, but have the “crowding in” effect. As can be seen from Figure 10, not only private but also public investments contribute to the increase of the share of investment in GDP. If for some reason private investments are in limbo, the state can achieve the increase in total investments through the expansion of its own public investment projects financed through taxes and/or borrowings. Government savings (financing public investment through government budget and/or budget surplus), as the studies show, do not crowd out private savings in a proportion of 1:1, but only in a proportion of 25-50 cents for every dollar (Schmidt-Hebbel, Serven, Solimano, 1996). In low income countries, as recent research shows, an extra dollar of government investment does not crowd out, but crowds in private investment by raising them by roughly two dollars and output by 1.5 dollars (Eden, Kray, 2014).

If the private sector is not doing the job, the solution may be the government investment and government entrepreneurship that helps to resolve the bottlenecks.

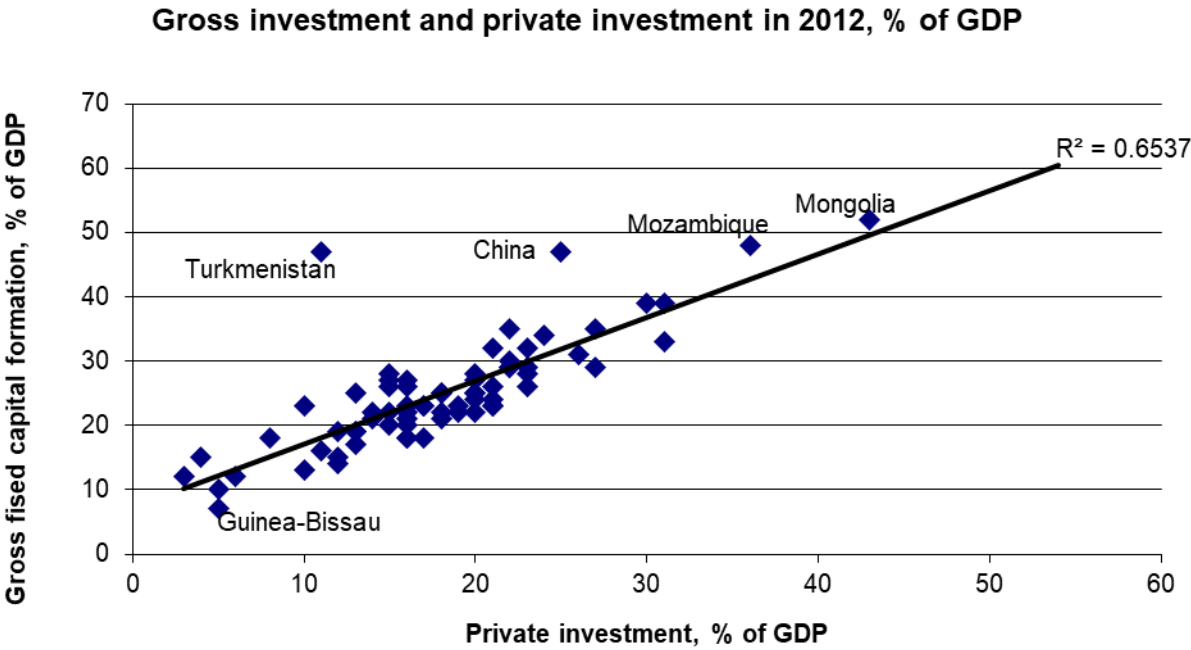
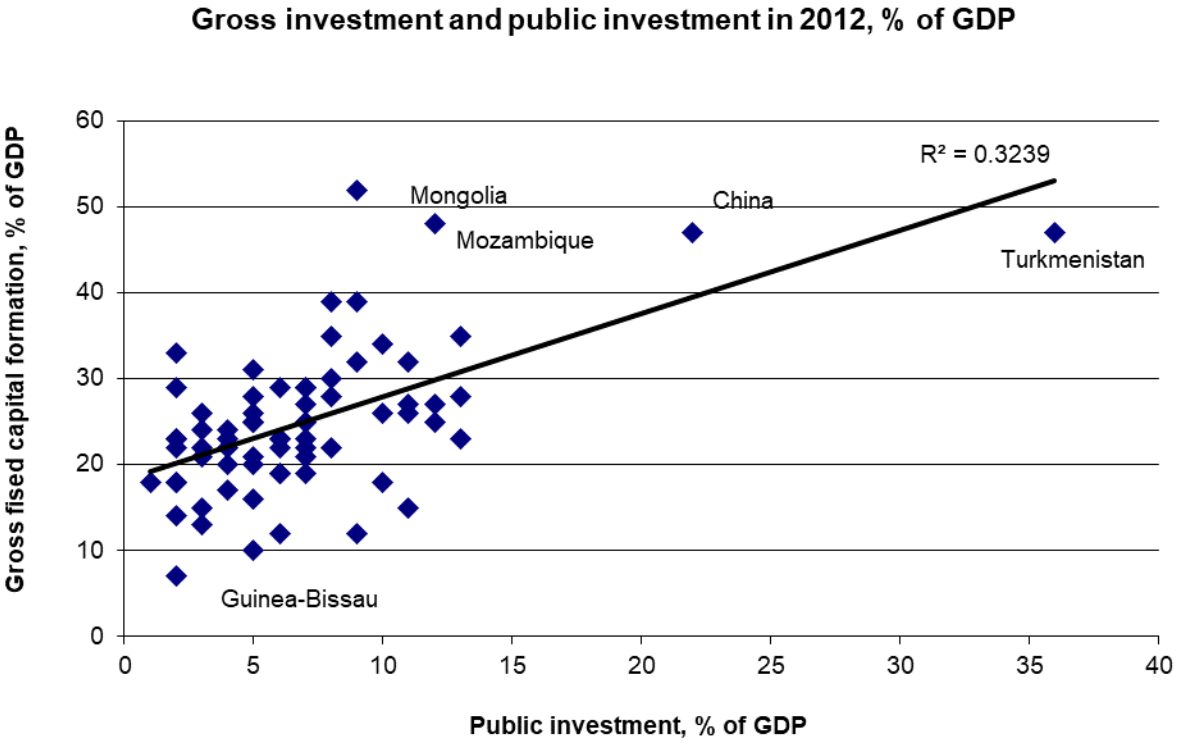
It should be also noticed that the impact of foreign direct investment (FDI) on development is not always positive. Some countries created growth miracles without reliance of FDI (Japan, South Korea, China in 1979-90), others relied on FDI extensively (Taiwan, Singapore, Hong Kong, China after 1990) – Polterovich, Popov, 2005.

Figure 9. The share of private sector in GDP in former Soviet republics, 1989-2010, %

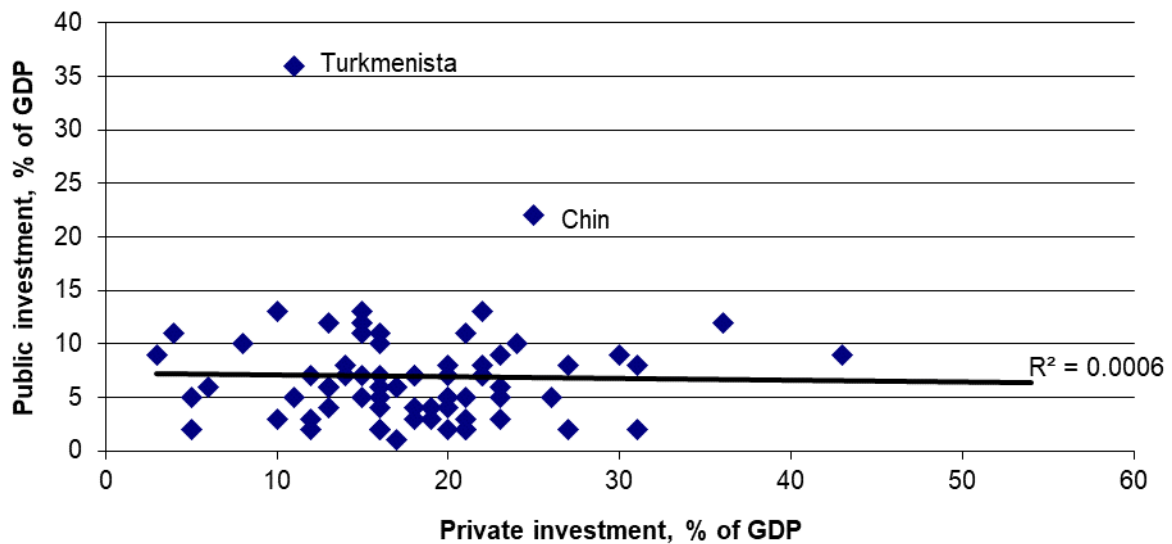


Source: Transition Report, EBRD (Data for years after 2010 are unfortunately unavailable)

Figure 10. Public private and gross investment in developing countries as a % of GDP in 2012



Public investment and private investment in 2012, % of GDP



Source: WDI.

It may be hypothesized that the FDI inflows into countries with poor investment climate do actually more harm than good. First, there is a self-selection of investors: if the investment climate is bad, foreign investors come mostly for short term profit and/or resource projects, where the transfer of technology, the main benefit of FDI, is at best limited. Second, foreign investors do not reinvest profits in countries with poor investment climate, so the outflow of profits with time outweighs the inflow of FDI. Third, purchases of companies in countries with bad investment conditions do not necessarily lead to the increase in total investment because the inflow of FDI is often completely absorbed by an outflow of short term capital⁵.

⁵ The regression analysis (Polterovich, Popov, 2005) supports these conclusions. It implies that FDI positively influence growth in countries with good investment climate and negatively – in countries with poor investment climate:

$$GR = CONST. + CONTR. VAR. + 0.02*FDI (ICI - 80.5),$$

where ICI – investment climate index,

FDI – average foreign direct investment inflow as a % of GDP in 1980-99.

Coefficients are significant at 10% level or less.

VI. International trade and trade policy

Trade specialization (the predominance of particular goods in exports and imports) is the other side of the coin of the structure of national economy: if the country exports manufacturing goods and imports food products, the share of manufacturing in its total output and employment would be high and the share of agriculture – low. That is why the structure of national economy depends to a large extent of trade developments – openness to trade in particular sectors and industrial policies to promote exports of some goods and to provide (or not to provide) protection to particular industries.

Trade liberalisation. What kind of trade policy is best for promoting sustainable development? The debates on whether free trade or protectionism are more conducive to growth are as old as economic research itself. The advocacy of free trade became the common place in economics research and there is a number of studies that show the benefits of free trade (Sachs, Warner, 1995; IMF, WB, WTO, 2017; OECD, 2017 – just to name a few). However, it was noticed that free trade does not always lead to an increase in the share of exports and imports in GDP (Rodrik, Rodriguez, 2001; Polterovich, Popov, 2005). The best example is China after the Opium Wars that forced the country to open up: in 100 years afterwards, there was no increase in external trade to GDP ratio and China continued to fall behind Western countries in per capita income. Other more recent examples are Japan, South Korea and Taiwan of the 1950-60s and China in the 1980-90s. In the 1980s Chinese import duties were at a level of 40 to 50% and only in the 1990s-2000s they were gradually reduced to 10% (Prasad, 2004). China became the member of WTO only in 2001, so growth rates of GDP of about 10% a year in the previous two decades (and of export to GDP ratio from 5% in 1979 to 20% in 2000) cannot be explained by the benefits of trade liberalization.

This equation establishes a very high threshold of investment climate index – about 80%, which is basically the level of developed countries. Only a few developing countries (Botswana, Hong Kong, Kuwait) have such a good investment climate. The worse is investment climate of a country the larger may be losses from FDI, hence, the stronger foreign investments should be regulated by the state.

Studies also show that the benefits of free trade depend on domestic adjustment policies, without which it is impossible to reap the potential benefits of trade liberalization (IMF, WB, WTO, 2017; OECD, 2017). Stiglitz and Charlton (2005) question the conclusion that a broad trade liberalization always makes countries better off. They claim that this conclusion is based upon non-existent assumptions about full employment and perfect competition that lack in most developing countries.

It is well documented that fast growing countries are usually more involved in international trade, have higher and faster growing trade/GDP ratios. In addition, there is a correlation between the share of investment in GDP and the share of export in GDP – countries which export more, invest more as well (Polterovich, Popov, 2006). However, fast growing and more intensively trading nations are not always and were not always more open to trade (had low tariff and non-tariff barriers) than their less globalized competitors.

Empirical studies (Rodriguez and Rodrik, 2001; O'Rourke, Williamson, 2002; O'Rourke, Sinnott, 2002; see for a survey: Williamson, 2002) found that there is no conclusive evidence that free trade is always good for growth: whereas protectionist countries grew more rapidly before the WWI, they exhibited lower than average growth after the WWII. Rose (2002) estimated the effect on international trade of multilateral trade agreements, such as the World Trade Organization (WTO), its predecessor the General Agreement on Tariffs and Trade (GATT), and the Generalized System of Preferences (GSP) extended from rich countries to developing countries, using the standard “gravity” model of bilateral merchandise trade. He found little evidence that countries joining or belonging to the GATT/WTO have different trade patterns than outsiders, whereas the GSP, giving poor countries better access to markets in developed countries, had a very strong effect on trade of developing countries (an approximate doubling of trade).

Import substitution versus export orientation. Import substitution usually is associated with protectionism – the idea is to protect domestic non-competitive industries with trade barriers, so that they could withstand the competition with imported goods and eventually increase their competitiveness and efficiency. The problem with this kind of policy is that efficiency of

protected industries does not increase automatically, and protection that is usually designed as a temporary measure, becomes very often a permanent shield that preserves the existence of industrial “dinosaurs and mastodons”, as inefficient and non-competitive enterprises are often called.

Export orientation is usually understood as a policy of support of the exporters (via subsidies, credits, tax concessions and other stimuluses), but it is important to realize that export promotion could go hand in hand with protectionist measures. In fact, there is no contradiction in imposing high import duties for a particular product and providing export subsidies for this product – higher than the world market prices in the domestic market provide needed finances for restructuring, whereas export orientation in this case is supported by export subsidies. This was exactly the policy of Japan, South Korea and Taiwan (even though not that of Singapore and Hong Kong) in the 1950s-70s.

The difference between import substitution and export orientation is that the first policy only protects domestic industries (without promoting export orientation), whereas the second policy not only protects domestic industries, but also stimulates them to export their output. The criteria to distinguish between two types of policy is the dynamics of the share of export in GDP. If it grows fast, this should be classified as export oriented development, if it stagnates it is import substitution.

The authors of the “East Asian Miracle” (World Bank, 1993) found that government efforts to promote specific industries (without promoting exports) generally did not increase economy wide productivity. But government support for exports was a highly effective way of enhancing absorption of international best-practice technologies, thus boosting productivity and output growth.

In the former Soviet Union region in recent decades there was a lot of trade liberalisation in the 1990s and beyond as former Soviet republics made a transition to the market and deregulated their export-import operations. Kyrgyzstan was the first post-Soviet country to become a member of WTO in 1998, followed the Baltic states (1999-2001), Georgia (2000), Moldova

(2001), Armenia (2003), Ukraine (2008), Russia (2012), Tajikistan (2013), Kazakhstan (2015)⁶. But their development looked anything but export oriented. The share of export in GDP in Central Asian countries, for instance, fell dramatically after the dissolution of the Soviet Union, and has not increased in the 1990s-2010s. A yardstick for comparison can be Turkey – a country at a similar level of development: it managed to increase the share of exports in GDP from 6 to 9.5 % in 1992-2016, whereas in Central Asian countries this indicator either increased only marginally (Kyrgyzstan, Turkmenistan) or decreased (Kazakhstan, Tajikistan, Uzbekistan) – (Gharleghi, Popov, 2018a). It is noteworthy that 4 former Soviet republics that are still not members of WTO as of 2019 (Azerbaijan, Belarus, Turkmenistan, Uzbekistan) had higher growth rates in recent 30 years than the others (fig. 2).

VII. Conclusion

In the 1990s East European and the former Soviet Union countries carried out market reforms and experienced regressive developments in their industrial structure – deindustrialization, “resource-ialization” and “primitivization” of the structure of their exports. Swiping liberalization of the 1990s in the former Soviet Union countries led to premature deindustrialization in the region and such a deindustrialization inhibited economic growth.

On the contrary, China and Vietnam also carried out market type reforms (China – gradual reforms since 1979, Vietnam – gradual reforms in 1986-89 and radical reforms in 1989) and achieved an acceleration of economic growth and an impressive increase in manufacturing output and exports.

The varying performance of post-communist countries can be attributed to a large extent to different models of industrial policy: whereas China and Vietnam relied on active promotion of exports (mostly via undervalued exchange rate), East European countries did not introduce any sizeable stimulus to particular industries, and former Soviet republics for a long time assisted

⁶ Uzbekistan is currently in the accession negotiations and Turkmenistan and Azerbaijan have not started them yet.

domestic producers in a very inefficient way – through maintaining low prices for energy and fuel in the domestic market.

This is one of the most important lessons of the post-communist transition: market-oriented reforms alone are not enough, there is a need to maintain strong institutional capacity of the state and to stimulate progressive structural shifts. A successful industrial policy is needed for structural economic transformation to achieve inclusive and sustainable development. Industrial policy could use protectionist instruments, but should stimulate exports. Protectionism alone is not enough for upgrading the industrial structure and speeding up economic and social development.

There are many ways to promote manufacturing exports, but the most promising tool is the undervaluation of the exchange rate and public investment, especially in infrastructure and education. These policies were widely used by virtually all “economic miracle” countries and contributed to rapid growth and successful catch up development in East Asia and elsewhere. Undervaluation of the exchange rate is a non-selective industrial policy that creates stimuli for tradable goods sector and exports of tradables, whereas public investments contribute to the acceleration of economic growth not only because they lead to the rise of the share of investment in GDP (no crowding out effect), but also because they provide public goods (education, infrastructure) with strong externalities and can eliminate bottlenecks (if private investors ignore particular areas).

For resource rich countries the need for the special policy to lower the real exchange rate is especially pressing (to avoid Dutch disease). Today in all resource rich countries domestic prices for fuel are kept below the world market level through export taxes (on exports of fuel) and direct restrictions on exports (export quotas, access to the pipeline). This provides subsidies to all producers using fuel and energy and thus stimulates economic growth, but at the same time leads to high energy intensity. A more efficient way to stimulate export oriented growth is to eliminate gradually export taxes for fuel and energy, to tax the extra profits of fuel companies and to use the revenues for infrastructure investment, and to stimulate producers of tradables not via price subsidies for fuel, but via but via underpriced exchange rate.

Since the mid-1990s and especially in the 2000s and 2010s many FSU countries made substantial economic advances – 6 countries in the region (Turkmenistan, Uzbekistan, Azerbaijan, Kazakhstan, Tajikistan and Belarus) increased their output no less than Central Europe (1.7 times and more as compared to 1989 – fig. 2). Uzbekistan's and Tajikistan's achievements are especially impressive because they are only partly based on resource exports. Such positive dynamics are due to a large extent to the efficient industrial policy that resisted de-industrialization and supported manufacturing exports through undervalued exchange rate and tax policies.

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