

# GETTING OUT OF RECESSION IN THE TRANSITION ECONOMIES

— A TEST CASE FOR THE KNOWLEDGE ECONOMY ? —

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## Abstract

The world recession has affected the transition countries with particular severity. This is not directly due to failures of science, technology and education policies, but it has highlighted the weaknesses of the transition countries in these areas. It has also revealed serious problems in the banking sector, particularly with reference to venture capital. Falling levels of FDI have demonstrated how dependent the transition countries have come to be on foreign organisations for technology transfer. Policies for the medium-term future must build on the foundation laid by the integration of the transition countries into the global economy over the past two decades. But they must also seek to integrate domestic R&D and education systems much more closely into the international networks, and that means shifting the emphasis from the supply-driven policies of the past to a new, more demand-driven approach. **Key words** : Recession, transition countries, R & D, education, banking

## Introduction

Failures of innovation and education policy did not cause the recession in the transition countries anymore than they did in the rest of the world. Indeed precisely one of the key problems of knowledge economy policy-making is that it rarely has a critical impact in the short run, whether for good or for bad. But the crisis has been particularly severe in the transition region (see Table 1). The region as a whole had still not regained its 2008 level of GDP per head by 2010, and every sub-region except Central Asia shows the same pattern. Can we tie that in with failures of innovation policy? Again, the answer has to be no, at least in the first instance. The main immediate cause of the downturn throughout the transition region was the knock-on effect of the financial and banking crisis in North America and Western Europe on transition country banking systems, and the secondary effect of that crisis on business confidence, and therefore on FDI flows, upon which most of the transition countries had become heavily dependent (see Table 2). In the oil-and gas exporting transition countries the dip was exacerbated by the fall in the price of oil concomitant on the easing-off of global economic growth from 2008, but it should be stressed that the weakness and vulnerability of domestic banking systems was just as important a factor in the downturn in

Table 1 Percentage rates of growth of GDP

	2007	2008	2009	2010 (estimate)
<i>Russia</i>	8.1	5.6	-7.9	4.0
<i>Central-East Europe and the Baltic States</i>	6.3	3.5	-3.0	2.2
<i>South-Eastern Europe</i>	6.3	6.8	-5.4	-0.6
<i>Eastern Europe and the Caucasus<sup>a</sup></i>	10.0	5.0	-8.0	5.0
<i>Central Asia</i>	9.2	5.6	2.7	6.7
<i>All transition countries</i>	7.0	4.1	-5.5	4.2
<i>World</i>	3.9	1.5	-2.2	3.1
<i>China</i>	14.2	9.6	9.1	9.9
<i>Saudi Arabia</i>	2.0	4.3	0.6	3.6
<i>United Arab Emirates</i>	6.2	7.4	-2.7	2.6

Source: For transition countries, EBRD; for Russia, also national statistics; for World and China EIU, 2010, p.42; for Saudi Arabia and UAE CIA *Factbook* and EIU, 2010, p.30

a Armenia, Azerbaijan, Belarus, Georgia, Moldova, Ukraine

Table 2 Net inflows of FDI

	2007		2008		2009 (prelim.)		2010 (estimate)
	US\$ m	% of GDP	US\$ m	% of GDP	US\$ m	% of GDP	
<i>Central-East Europe and the Baltic States</i>	40,434	4.1	36,533	3.3	10,574	0.5	7,284
<i>South-Eastern Europe</i>	25,157	11.5	23,821	9.0	15,271	9.4	4,483
<i>Eastern Europe and the Caucasus</i>	8,710	4.9	14,657	6.5	7,173	4.1	7,406
<i>Russia</i>	9,158	0.7	20,425	1.2	-7,335	-0.6	5,015
<i>Central Asia</i>	10,237	6.0	13,382	6.2	9,481	4.6	8,550
<i>All transition countries</i>	104,478	6.3	104,025	5.8	48,525	4.1	38,024

Source: EBRD

these countries as in the other countries of the region. Thus Russia was much harder hit than other (non-transition) countries heavily dependent on hydrocarbon exports like Saudi Arabia and the United Arab Emirates (see Table 1).

When we start to look behind these basic factors of recession, however, the issue becomes more complex. Why did the transition countries become so dependent on FDI, both in financial terms (supporting the Balance of Payments) and in real terms (supporting productivity growth)? Why had the hydrocarbon exporters not diversified more? Why had they fallen victim to the Dutch disease? Why did the banks in the transition countries find it so difficult to find creditworthy customers on which they could build a solid portfolio of loans? Let us look in greater detail at these issues, starting with FDI.

### FDI in the transition countries — an uneven and incomplete revolution

FDI in the transition countries has been a great success story, especially in the Central-East European countries and the Baltic countries. As Table 2 shows, it was running 2007-2008 at over \$100 billion per annum for the region as a whole, with over one-third of that going to Central-East Europe and the Baltic States. In terms of regional aggregates, FDI in those years was equivalent to some 6 per cent of GDP, i. e. approaching 20 per cent of total investment. Since then the average aggregate figure for net FDI inflow into the transition region has fallen by over 50 per cent (for Central and East Europe and the Baltic States by over 75 per cent), but FDI continues to represent a substantial proportion of national income, and there is no reason to suppose that it will not recover to something like its previous level as the global economy comes out of recession.

Whether in financial terms, or in terms of modernising the capital stock of the region, therefore, FDI has been crucial. But its impact has been uneven. Spillover effects have been limited. Multinationals operating in transition countries have tended to source their supplies from companies within their existing supply network in the home country, or from wholly or partly foreign-owned companies within the host country. As far as R & D is concerned, they have largely ignored local organisations. A recent survey of FDI in key Central-East European countries found that

(it) is absolutely clear is that there is a major and deep-seated network misalignment here. The results suggest that the majority of FIEs [foreign investment enterprises] in fact consider national research institutions as having either no or minor importance — and this holds across all countries. Clearly the national Academies of Sciences in post-socialist countries have so far not been able to overcome their unfavourable reputation to play a vital role in national innovation systems. (Gunther et al, 2010)

The result has been the emergence of a dual-economy pattern, with a high-productivity, export-oriented foreign-owned sector coexisting with, but not interacting with, a low-productivity domestically owned sector with weak export capability. It is this that explains the paradox of a country like Hungary, which runs a Balance of Trade surplus in high-tech goods, but reported an overall deficit on Balance of Payments, current account, equivalent to 6.8 per cent of GDP in 2007 and 7.2 per cent of GDP in 2008.<sup>1)</sup>

Why this networking failure on the interface between foreign subsidiaries and domestically owned companies in the transition countries? We should be careful not to jump to the conclusion that it must be all the fault of the local companies. There is plenty evidence of weakness of entrepreneurial vision on the part of the multinationals, even in the relatively advanced economies of Central-East Europe (Dyker et al, 2006). The fact remains, however, that very few companies in the transition region are capable of operating in international supply networks at the highest level. There are hardly any 'first-tier suppliers', providing design and other knowledge-intensive inputs as well as artefacts, even in Central-East Europe.

Interestingly, Chinese companies do much better on this indicator than companies from CEE (Sutton, 2004), though China's general level of development as measured by GDP per head is still well below that of any of the Central-East European countries. One can only speculate as to the reasons for this. The comparative brevity of the period of central planning in China may have been a factor, in that it permitted a substantial degree of continuity in the evolution and 'learning curves' of Chinese firms — most notably in the bicycle industry, which subsequently emerged as a technological platform for the development of the car parts industry (Zhang et al., 2004). The fact that China's market-based transformation started a full decade before that of the transition region may be another one. Still, one has to wonder why, in twenty years, even the transition countries that are now members of the EU have made such little progress on this dimension. Might policies for human capital formation have played a role?

The education systems of the communist countries, effective enough though they were in terms of establishing basic literacy and numeracy, and inculcating essential Fordist engineering skills, were ill-adapted to the needs of an emerging market economy. Has the situation improved over twenty years of transition? Let us look at the situation in Hungary, one of the leading transition economies, and a member-state of the EU.

Despite rapid growth in the supply of graduates, the Hungarian education system has been unable to give an adequate response to the challenges triggered by economic transformation and skill-biased technical change. Instead of demand-led adjustment and skill upgrading, educational expansion has rather produced a supply shock ... The traditional relations between the key players of the system (employers, educational institutions, students) [were] disrupted after the change of regime, and have not recovered since. *Parents, students and educational institutions disregard the messages of the labour market.* Educational institutions are financed according to the number of students admitted, thus are not forced to establish 'business-oriented' relations with firms and take employers' needs into consideration when determining their curriculum. Decision-makers are too timid to intervene in educational institutions that insist on their autonomy. This has led to the emergence of *extreme and worsening imbalances: on the one hand shortages of specific skills keep building up, and on the other the stock of holders of superfluous degrees for which no demand exists also keeps growing.* (Szalavetz, 2010)

This pattern is repeated throughout the region. 'Bums-on-seats' policies by higher educational institutions have produced oversupply of fashionable and apparently transition-friendly subjects like business studies, and undersupply of graduates in areas like physics and chemistry (traditional strengths of the former communist countries) and more particularly in sunrise subjects like biotechnology and information technology. In Russia, the exposure of graduate students to coal-face innovation work has fallen sharply.

While in the late 1980's and early 1990's over 70 per cent of post-graduate students and almost 30 per cent of full-time students took part in research and innovation activities, the current level of participation is 3-4 times lower (Kovaleva and Zaichenko, 2006, p. 10).

The collapse of the old system has produced, if anything, an even bigger crisis in the system of sub-higher-education training and apprenticeship. In Kazakhstan, the system of industrial training has virtually collapsed, and this is seen as a key obstacle to government policies for diversification — i. e. policies to counter the Dutch disease (Yuritsyn, 2003). Just 604,700 people graduated from Russian technical colleges in 2008, compared to 877,900 in 1994.<sup>2)</sup> In Romania, introduction of a series of measures to remedy the problem started in 2003. But serious problems remain, notably in terms of development and appraisal of partnership in education and training, and cooperation in developing continuing education programmes and work-based learning programmes; lack of up-to-date information and studies on long-term labour market needs; and insufficient involvement and insufficient training of relevant stakeholders (Pislaru, 2010).

So much for supplier enterprises and domestic human capital formation. What about domestic R & D organisations in the transition economies? Why are they so marginal to the big international companies operating in their countries? Here, in fact, the situation is rather more stark than in relation to the production and education and training sectors. R & D sectors are among the least reformed sectors of the transition countries. While government financial support for R & D has dwindled and gross expenditure on R & D (GERD) has fallen in most cases to 1 per cent of GDP or less, the number of research institutes has kept up surprisingly well. The best survivors have been the institutes of the Academies of Sciences — largely concerned with basic ‘blue skies’ research, and in advanced transition countries like the Czech Republic and Hungary the Academies continue to claim some 30 per cent of the total public R & D budget (ERAWATCH Research Inventory reports). But survival has often been on the thinnest of shoestrings, with governments doling out just enough funds to keep heads above water. Meanwhile levels of ancillary staffing and equipment supply have been slashed, making it increasingly difficult for scientists to do real research, and many of them have ended up making ends meet by ‘moonlighting’ — doing odd jobs like computer maintenance and software programming that are far removed from scientific research. The old industrial research institutes, which were mostly subordinate to industrial ministries under the old regime, fared badly in the early transition period, as most of those ministries were abolished. That might have seemed like an incentive to do some basic restructuring. But in countries like Poland and Russia where large numbers of these research institutes survive, they do little today to bridge the gap between public-sector R & D and the business sector (Dyker, 2010). Against this background, it is not surprising that the structure of scientific output from the transition countries is extremely conservative. In the Russian case, no less than 50.6 per cent of publications registered on the Web of Science relate to physics and chemistry, compared to a figure for the whole world of 21.9 per cent. And for clinical medicine the corresponding figures are 4.9 per cent and 20.6 per cent (Dezhina, 2009, p. 6).

Against the background of all this, the governments of the transition countries — and in some cases the research institutes and universities themselves — have been anxious to develop bridging institutions, to channel the (often rather academic) outputs of the research community to commercial applications. Science parks, business incubators, innovation centres etc. have

been established in most of the transition countries, with varying degrees of success. As in the advanced countries, some of these have tended to turn into speculative ventures in real estate. Often there has been little enough in the way of commercialisable intellectual capital to channel. Most fundamentally, however, there has been a problem of demand. The domestic firms which are in most cases the most obvious customers for local R & D outputs are simply not sufficiently involved in innovation to want to spend money on buying R & D services in the marketplace; and while the multinationals have the money and the will to spend on R & D, they do not generally look to transition country research institutes to supply their needs. Radošević argues in this connection that the whole focus of transition country government policy has been wrong.

Integration of local firms through value chains and FDI has been relatively undeveloped as a policy in CEECs ... There has been much more policy focus on linkage mechanisms like S & T parks, innovation centers etc., i. e. on linkages for which weak and dependent local firms may not have immediate demand. This explains their irrelevance to local firms and their innovation activities, which are, primarily, value-chain driven (Radošević, 2006, p.138).

Thus we are back with FDI and supply networks. It seems that that is the nexus on which policy must concentrate — even if the ultimate goal is to make these economies more independent of FDI. We come back to this in our final section.

### The special case of Russia

Russia is not a completely unique case. Much of what we say in this section applies equally to Kazakhstan, and to the other hydrocarbon-rich transition states. But Russia is special in terms of its size, and also in terms of its political leadership, with its well defined nationalist agenda which has set clear limits to foreign involvement in the Russian economy.

Russia is a substantial recipient of FDI, to the tune of some \$20 billion in 2008, nearly one-fifth the total for the transition region. But as Table 2 shows, FDI was equivalent to only a small fraction of Russian GDP in that year. And since then FDI inflow to Russia has fallen sharply.<sup>3)</sup> The marginal role of FDI in the Russian economy reflects restrictions on foreign investment in some sectors, notably gas. It also reflects the fact that the multinationals have never seen Russia as a primary target for efficiency-seeking FDI. So FDI has never provided any significant corrective to the progress of the Dutch disease in Russia. How serious is the disease? Between 1997 and 2006 the share of manufacturing in Russia's exports fell from 11.6 per cent to 6.1 per cent.<sup>4)</sup> On a more qualitative level, we may cite the judgement of a leading Russian businessman that Russian energy equipment is 30-40 years out-of-date in technological terms.<sup>5)</sup> So the decline in Russia's manufacturing capability has actually gone so far as to seriously threaten Russia's strength in the fuel and energy sectors themselves — and also the operation of her basic infrastructure at home.<sup>6)</sup>

The global crisis has not hit Russia as badly as some of the other transition countries in

terms of the Balance of Payments, with the Russian current account still in surplus to the tune of more than 4 per cent of GDP for 2009.<sup>7)</sup> But the budget deficit was 6.8 per cent of GDP in 2009,<sup>8)</sup> and as Table 1 indicates, Russia is one of the hardest-hit transition countries in terms of GDP. To what extent has this reflected problems in the structure of the real economy?

In speeches made just before he stepped down from the presidency, and just before the world economic crisis broke, Vladimir Putin stressed the need for Russia to make the transition to ‘innovation-based development... otherwise we will not be able to guarantee the security and normal development of the country, and its very existence will be threatened.’ (Nabiullina, 2008, p. 1) In the same vein, in-coming president Dmitrii Medvedev has proposed four ‘i’s — innovation, investment, infrastructure and institutions (Nabiullina, 2008, p. 2). Minister for the Economy Elvira Nabiullina has developed these ideas in terms of three possible scenarios for Russia, ranging from the unsatisfactory, through the tolerable to the desirable, viz.-

- The *inertia* scenario: In this scenario, nothing changes, either structurally or in terms of institutions. The economy remains totally dependent on hydrocarbons and other extractive sectors, but these are unable to maintain their present impetus as long-run marginal costs rise, and the rate of growth of GDP falls to some 3.5 per cent — a perfectly respectable rate of growth for an advanced economy, but not enough for an economy like the Russian to continue to close the gap with the advanced economies. Slowing growth apart, continued heavy dependence on oil and gas means that Russia would continue to be at the mercy of movements in the international economy, like the present global crisis, making strategic planning at home on economic and social dimensions impossible. This is essentially the Dutch disease scenario.
- The *energy/raw materials-based* scenario: This is similar to the first scenario, except that here Russia seeks to develop her natural resource base and other natural advantages. That means developing oil-and gas-processing, but also developing new sectors such as spring water, and exploiting Russia’s unique geographical position to develop the country as a point of transit. That scenario would generate rates of growth of 5-5.5 per cent. That would mean catching up, but slowly, and the vulnerability to international economic fluctuations, and the dependence on imported technology, would remain.
- Finally, we are back with Putin’s *innovation* scenario: Here the focus is shifted away from natural resources to human resources. Investment in education and R & D, and also in infrastructure, is increased, and the economy is diversified. Inherited technological strengths like aviation, space technology and telecommunications are consolidated, high-tech small companies are encouraged, and innovation runs through everything. There may be some overlap with the energy-based scenario, in terms of the technological modernisation of traditional sectors and the development of Russia as a transit zone. The economy grows at 6.5 per cent annually, and rapid catch-up is achieved (Nabiullina, 2008, pp. 1-2).

Russian economists and businessmen have criticised this approach to the underlying Rus-

sian economic problem. In a Round Table organised by the *Izvestiya* newspaper Boris Titov,<sup>9)</sup> president of the 'Business Russia' association, argued that it was premature to talk about an innovation economy in Russia, because the Russian economy could no longer be classified as an industrial one. Titov went on to argue that decay of the Russian capital stock had progressed to a stage where the economy could now only be described as 'pre-industrial'. The implication is that Russia's first policy priority should be simply industrialisation, following the Japanese and Chinese models, i. e. borrowing or stealing technology from abroad and introducing it in Russia. Vladislav Inozemtsev, head of the Centre for Research on Post-Industrial Society, is happy to use the word 'modernisation', and argues that there are, indeed, lots of new technologies around in Russia. The problem is (and here Inozemtsev echoes Radošević's dictum, quoted above), that no one in Russia wants to put them into practice. Inozemtsev may err on the side of patriotism in his assessment of Russian R & D here. But his second point is absolutely valid, and, as he says himself, is as valid for foreign technologies as for Russian ones. Inozemtsev concludes:

The president writes persuasive articles, but there is still not enough consensus in society on what has to be changed. There's no drive. I have the feeling that no one wants any real action, because nobody really thinks that there will be a catastrophe. But whether there will be, well, let's wait and see.

A year on from the *Izvestiya* Round Table, the risk of catastrophe may seem to have increased somewhat. If it is now time to face up to the need for serious policy change in Russia, what concrete measures might be proposed? We shall return to this question in our final section.

### The banks in the transition region — a failure of mobilisation

Banks have a crucial role to play in the knowledge economy. There are no start-ups without venture capital, and SMEs of all kinds struggle to grow and develop in the absence of cheap and reliable overdraft facilities. Active banking hardly existed in the old, socialist economies, and by the early 2000s banking was still a major weak point of the transition region as a whole. Here is a snapshot of the Armenian banking sector c. 2005.

Banks differ greatly in size, outreach effort, and customer base. Around half of all Armenian banks are very small with negligible market shares in deposits and loans, which contributes to the sector's overall low banking productivity. A number of these banks concentrate their activities in trade financing, money transfers, and private banking, rather than in deposit-taking and loan-making. Anecdotal evidence suggests that several small banks serve as 'pocket banks' of enterprise groups or wealthy individuals, which use them for treasury operations, or as sources of cheap liquidity, and equity investment. Other banks serve a large number of small scale depositors and borrowers. While they may have comparatively large shares of the overall deposit and credit markets, the size of financial service per customer can be extremely small, with some banks having aver-



Table 3 Banking sectors — degree of foreign ownership and incidence of bad loans

	Foreign-owned assets as % of total (end of period)			Bad loans as % of total loans (end of period)			
	2007	2008	2009	2007	2008	2009	1 <sup>st</sup> half 2010
Central-East Europe and the Baltic							
<i>Croatia</i>	90.4	90.8	91.0	4.8	4.8	...	9.5 <sup>g</sup>
<i>Estonia</i>	98.8	98.2	98.3	0.5	1.9	6.0 <sup>b</sup>	6.0 <sup>b</sup>
<i>Hungary</i>	64.2	84.0	81.3	2.8	3.3	5.5 <sup>c</sup>	8.3 <sup>h</sup>
<i>Latvia</i>	63.8	65.7	69.3	0.4	2.4	14.5 <sup>c</sup>	19.4 <sup>i</sup>
<i>Lithuania</i>	91.7	92.1	91.5	2.7	4.6	...	19.1 <sup>j</sup>
<i>Poland</i>	75.5	76.5	72.3	5.4	4.7	7.0 <sup>c</sup>	8.0 <sup>k</sup>
<i>Slovakia</i>	99.0	99.2	91.6	2.6	3.5	4.5 <sup>c</sup>	...
<i>Slovenia</i>	28.8	31.1	29.5	3.9	3.6	3.7 <sup>d</sup>	4.2 <sup>l</sup>
South-East Europe							
<i>Albania</i>	94.2	93.6	92.4	3.4	6.6	5.0 <sup>c</sup>	12.0 <sup>g</sup>
<i>Bosnia and Herzegovina</i>	93.8	95.0	94.5	3.0	3.1	4.0 <sup>e</sup>	8.7 <sup>g</sup>
<i>Bulgaria</i>	82.3	83.9	84.0	2.5	3.2	8.0 <sup>c</sup>	7.8 <sup>n</sup>
<i>Macedonia</i>	85.9	93.1	93.3	10.9	10.1	...	9.9 <sup>g</sup>
<i>Montenegro</i>	78.7	84.6	87.1	3.2	6.0	...	17.2 <sup>i</sup>
<i>Romania</i>	87.3	87.7	84.3	3.0	4.5	10.0 <sup>c</sup>	17 <sup>n</sup>
<i>Serbia</i>	75.5	75.3	75.3	...	5.0 <sup>a</sup>	10.5 <sup>c</sup>	17.5 <sup>g</sup>
Eastern Europe and the Caucasus							
<i>Armenia</i>	49.0	50.5	63.6	2.5	4.4	5.0 <sup>f</sup>	...
<i>Azerbaijan</i>	7.5	9.1	9.3	8.1	5.2	4.0 <sup>c</sup>	...
<i>Belarus</i>	19.7	20.6	20.6	2.0	1.7	...	4.9 <sup>o</sup>
<i>Georgia</i>	90.6	90.8	89.1	2.6	12.8	...	7.0 <sup>n</sup>
<i>Moldova</i>	24.8	31.6	41.0	3.7	5.9	...	17.3 <sup>n</sup>
<i>Ukraine</i>	39.4	51.1	50.8	1.3	2.3	30.0 <sup>c</sup>	41.6 <sup>n</sup>
Russia	17.2	18.7	18.3	2.6	3.9	...	9.5 <sup>n</sup>
Central Asia							
<i>Kazakhstan</i>	38.5	12.9	17.2	2.7	7.1	34.5 <sup>c</sup>	26.9 <sup>n</sup>
<i>Kyrgyzstan</i>	58.7	72.0	72.0	3.5	5.7	↑	...
<i>Mongolia</i>	46.4	40.8	41.9	3.2	7.1	↑	...

Source: EBRD; De Haas and Knobloch, 2010

Note: ↑ = 'on the increase'

a June

b Data from *Bloomberg Newsweek*, 16 June 2010

c September

d Data from *Reuters*, 3 November 2010

e June data from *Finanznachrichten. de*, 16 September 2010

f Data from *FinPort. am*, 26 March 2010

g Data from *Finanznachrichten. de*, 16 September 2010

h March data from *Reuters*, 9 August 2010

i July data from *Finanznachrichten. de*, 16 September 2010

j September data from *Reuters*, 26 October 2010

k Data from N. Buckley (see fn. 18)

l August data from *Reuters*, 3 November 2010

m September data from *Bloomberg*, 29 October 2010

n IMF data for September published by *BELTA*, 1 November 2010

o IMF data published by *BELTA*, 1 November 2010

age loans and deposits as low as US\$200 per customer. (Dabla-Norris and Floerkemeier, 2007, p.10)

Armenia is an extreme example, but the general pattern was similar throughout the region up to the early 2000s.

It is hardly surprising in this context that banking sectors in the transition countries have now been largely taken over the foreign banks. Among the new member-states of the EU, foreign ownership of banking sectors approaches in many cases 100 per cent (see Table 3). FDI in the transition banking sectors has helped those sectors to develop in a number of ways. It has bolstered liquidity from external resources. It has strengthened competition, and brought interest-rate spreads down, and lending rates with them. It has introduced the latest computerised banking technology, and it has helped to break down the web of connected lending and insider dealing which has tended to characterise the activities of domestically-owned banks. The fact remains, however, that even in countries where the banking sector is almost wholly foreign-owned, the bulk of lending is in the form of consumer credit, rather than loans to companies. And loans to small companies remain a particular problem.

Is this simply a reflection of an over-cautious approach to credit assessment? The figures for bad loans presented in Table 3 suggest not. Many transition countries were reporting relatively high rates of non-performing loans in 2007, before the crisis broke. Since then, the situation has become much worse, with provisional and incomplete data for 2009 and 2010 indicating bad loan ratios in the range of 5-20 per cent in Central-East Europe and the Balkan countries and 5-40 per cent in the countries of the former Soviet Union. And there is no indication that the situation is systematically better in countries with very high levels of foreign bank ownership. Of course, some of the increase in non-performing loans over the past year or so has reflected the purely macroeconomic side of the global crisis, as individuals have lost their jobs and companies their markets. It is nevertheless clear that the banks in the transition countries have made a poor job of assessing credit risk over the past few years. This problem is, of course, no monopoly of the transition region. But in Turkey, an emerging economy with a level of GDP per head similar to the transition country average, and with GDP falling by 4.7 per cent in 2009, the proportion of bad loans stood at just 4.5 per cent in 2009 (De Haas and Knobloch, 2010, p.6), up from 3.5 per cent in 2007 and 3.7 per cent in 2008.<sup>10)</sup> Turkey, it should be added, has plenty of experience with bad debt problems, and the non-performing loans ratio stood as high as 11.5 per cent as recently as 2003. But while Turkey, with only 16 per cent of bank assets foreign-owned, displays a steady learning curve in this regard, so far undisturbed by the world recession, transition country banking systems have seen their weaknesses mercilessly revealed by the crisis.

## Conclusions

The bad news is that the transition region is stuck with multinationals, including multinational banks, as the major vehicles for innovation and knowledge stock enhancement in the

region, whether it likes it or not. Russia may be a partial exception here, but the more it gets into a real innovation growth strategy, the less of an exception will it be. Further bad news is that FDI will continue to be somewhat unstable, following the business cycle. It would be foolish to suppose that this is the last time there will be a sudden drop in FDI. But there is good news as well. FDI is volatile, but it is not nearly so volatile as hot money, and it always leaves a knowledge footprint. Taking one year with another, there has been no problem with the quantity of FDI (again Russia, and indeed some of the other countries of the former Soviet Union are partial exceptions here). The problem is one of *engagement* with the FDI, specifically with the comparative failure of local firms and R & D organisations to engage. That will not be an easy problem to solve, but it will not be an *expensive* problem to solve. As we saw earlier, throwing money at the technology transfer issue by creating ineffectual technology parks and the like is worse than useless as a way of restructuring knowledge-intensive organisations. Rather, policy should concentrate on extending and deepening relations between local firms and R & D organisations and international supply and research networks, in the first instance through the medium of the multinationals and other foreign organisations, but with the ultimate goal of establishing these firms and organisations as independent actors on the global scene, as the leading Chinese companies in the auto components industry have done (Sutton, 2004). Polish experience with development of blue laser technology has demonstrated that:

Emerging players should not strive for technological and strategic self-sufficiency. Partner companies are needed to penetrate markets, develop complementary technologies and improve the value of the solutions offered. Technology start-ups and smaller market players should focus on carefully selected market segments and applications instead of offering wide portfolios of applications for a variety of customers. This approach helps optimize resources, improve returns on investment and build customer reference bases. (Kliniewicz, 2010, p. 114)

All of this is much easier said than done, but it has the great merit that it involves *better* public policies rather than *more* public policies.

As complexity grows in depth as well as breadth, new pressures are ... placed on governments to sustain development processes. In this, they tend to be limited by the insufficient 'capabilities' of the state/authority to link its policy-making to client needs ... Governments need to exert dynamic capabilities of their own, by keeping abreast or ahead of the game, but nowadays in a networked society potentially able to call on a wide range of talent and expertise rather than a hierarchically structured one. (von Tunzelmann, 2010, p. 18)

Thus if the government sector is to play a role in the development of the knowledge economy in the transition countries it must start by improving its own level of knowledge—staffing Economics and Industry Ministries with people with the training and aptitude to play a central role in the knowledge economy at large, nurturing (but not subsidising!) 'teaching companies' as role models, and helping entrepreneurs and R & D managers to learn how to learn. The prize for such a policy effort would be economies, deeply integrated into the

international economy, working closely with the multinationals and other foreign organisations, offering them an investment environment with technological depth as well as favourable regulations, but free of the one-sided dependence which we have seen exacerbating the impact of the global crisis on the region. None of this will be possible without critical improvements in education systems, broadly following Western models in terms of integrating Ph. D. programmes into research programmes, correcting globally fashionable mistakes like channelling too many students into business studies just because the students — and their parents — like the sound of it, and developing industrial training systems appropriate to a knowledge-intensive society and economy. In some ways, this last issue is the most difficult. It is less clear what the models should be here, and the UK, for instance, continues to struggle with industrial training problems comparable to those of the transition countries.<sup>11)</sup> But the situation here in many transition countries is so bad that significant improvements could surely be made without huge expense or administrative disruption.

What about Russia's special problems? They may have been eased in the short-run by the increase in oil prices in 2010, as the global economy has come out of recession. But Russia actually now needs an oil price of \$109 per barrel just to balance the budget.<sup>12)</sup> The average price of oil in 2010 was something under \$80 per barrel, and it is currently forecast to fall slightly in the period to 2015 (EIU, 2010). In the medium-long run, therefore, the essential problem will remain: how to switch the Russian economic growth model from one based on exhaustible resources to one based on renewable resources, i. e. primarily able and well-educated people? As we saw, everyone in Russia seems to understand what needs to be done, but no one has a clear vision of how to do it. Solution of the problem would require some fundamental political changes — a better welcome for FDI and a more favourable environment for SMEs, whether Russian-or foreign-owned, and it is no use pretending that those changes will come easily in Russia. 'Innovation strategy' is a good slogan, but in practice it will be difficult to tread the tightrope between legitimate technological comparative advantage and lobbying by established interests when it comes to 'picking winners'.

One new area where Russia does have real scientific strength is that of nanotechnology, with the Moscow region ahead of London in terms of published papers on the subject (European Techno-economic ..., 2005). In this connection the Russian government has already created a special agency, *Rosnanotekh*, dedicated to forging public-private partnerships in this key area. Rosnano has partnerships and joint ventures with leading international companies (notably with Swiss Oerlikon and Intel Corp), and caused a stir in British government and security circles in August 2010 when it opened discussions about taking a significant share in the British company Plastic Logic, a leader in the field of development of cheap plastic computer chips. In the event an agreement was signed in November 2010 under which Rosnano will provide funding to Plastic Logic to develop production of plastic chips in Russia, and take a 25 per cent stake in the British company.<sup>13)</sup> Deals like this allow Russian companies to plug into international technology networks, and, at a more modest level, to raise their status as international suppliers from that of third-tier supplier, supplying basic engineering elements, to second-tier supplier, providing complete components.<sup>14)</sup> Such

deals must do something to break down the traditional isolation of Russian production and technology systems.

But against these pluses we have to set a number of characteristically Russian minuses. Operating in areas where strong horizontal networks are of the first importance, Rosnano evinces a typically top-down management structure, with the President of Russia as the effective CEO. The result of this pattern in the area of technology transfer is predictable enough.

In the chain of the innovation economy, the link which is supposed to transform ideas into marketable goods and services is almost completely missing ... Basic research often turns into unproductive dissipation of public money, and Rosnano ... ends up 'slipping and sliding', not managing to find enough projects within Russia. As a result, in order to use up the funds allocated to it, Rosnano is obliged to look for projects abroad and relocate them to Russia, even when they are just assembly operations. This is not in itself bad, but it is not enough to build our own innovation economy. (Nabiullina, 2009)

In another major new initiative, Russian President Medvedev announced in February 2010 that a new high-tech R & D centre was to be set up in the Moscow suburb of Skolkovo, some 20 km from the centre of the capital. The total budgetary cost of the project, covering infrastructure and also government participation in projects, is estimated at Rb110.5 billion (\$3.7 billion). As a science park, Skolkovo will, of course, be dependent for its success on its ability to attract private companies to build on the infrastructure. CISCO and Nokia have already announced that they will participate in the project. But there are still no confirmed co-investors. Skolkovo will concentrate on five key areas of technology — energy, information technology, telecommunications, biomedical research and nuclear technology — precisely the priorities of the President's Commission for the Modernisation and Technological Development of the Russian Economy.<sup>15)</sup> Rosnano boss Anatolii Chubais estimates that Skolkovo's top ten projects in 2015 could be worth Rb100-200 billion (\$3-7 billion).<sup>16)</sup>

The Skolkovo initiative has a lot of positive points. It is based, from its inception, on the principle of inter-organisation cooperation. It seeks to attract and create genuinely first-class companies rather than simply shoring up existing companies. It has a clear technological and sectoral focus, and the government investment in the project is clearly targeted. The big problem with Skolkovo, however, is simply the fact that it is a science park. As argued earlier, science parks are not the right way to address the R & D and innovation problems of transition economies. The chances are that Skolkovo, like Rosnano, will end up 'slipping and sliding' in a frustrated search for good projects and good customers.

All the transition countries need to reform the institutional structure of their R & D systems, but in Russia the task is more critical, and more difficult. Major top-down initiatives like Rosnano and Skolkovo are inevitably insensitive to the nuances of patterns of demand for what they offer or might offer. The Russian Academy of Sciences stands as a beacon of outdated, 'science-push' thinking about R & D, but also as a guardian of Russian 'big' science as a key attribute of the Russian state and nation. It is, therefore, a central element of the nationalist discourse that dominates Russian politics, and it will be difficult to reform it (or

abolish it?) until that discourse changes. The same is, of course, true of the attitude to FDI. For the time being, then, the prospects for the implementation of a meaningful innovation strategy in Russia must be rated as poor.

What do the (mainly internationally-owned) banks need to do to ensure that they make a bigger and better contribution to the next stage of transition/convergence than they did to the last? They clearly have to improve their credit assessment procedures. That, in fairness, is more easily said than done in the short run. Foreign banks are as dependent on local personnel at the local branch level as domestically-owned, and to that extent they are equally hostage to the traditional weaknesses of loan decision-taking in these countries. It takes a long time and a lot of training to change the mind-set of local managers. But it is a predictable process, not subject to critical external shocks, and it is reasonable to assume that within 5-10 years this problem will be resolved. The trouble is that the transition countries cannot wait for 5-10 years, and right now there is no clear tendency for the structure of lending in those countries to improve. Thus in both Poland and Russia, for instance, lending to companies fell sharply through late 2008 and 2009, as banks scrambled to improve their short-term liquidity situation. It has recovered only weakly in 2010.<sup>17)</sup><sup>18)</sup>

It is evident that the transition region desperately needs institutional innovation in this area, specifically the creation of a whole range of new venture capital agencies. International public-sector organisations like the EBRD are doing a lot here, but the transition countries need more broadly-based venture-capital initiatives. Given the traditions of connected lending in these countries, we cannot expect too much from purely domestic initiatives in this area. In the blunt words of President Medvedev of Russia, 'venture capital does not exist in our country. It is simply not there'. (Medvedev, 2010). We *should* expect more from the foreign-owned commercial banks, in terms of the creation of specialised venture capital departments staffed by top-level personnel of both local and international background. But the history of FDI in the transition countries holds out no great hope of a display of entrepreneurial business vision on that scale. And we should not forget that most of those foreign banks originate from Western Europe, a region where venture capital has historically been weakly developed, even in terms of the needs of Western Europe itself. One important, but controversial area of development in investment finance in the transition countries is that of *private equity*. Private equity deals in Poland were expected to total around €800 m in 2010, compared to just €268 m in 2009. This is hardly big business, but it has facilitated the development of cable communications and mobile telephony in Poland. Private equity in Poland works with comparatively low rates of leverage, which makes it a less risky investment finance vehicle. But Polish private equity funds will be looking to sell on a number of their most successful investments in 2011, and this will be a critical test of their medium-term potential.<sup>19)</sup>

If neither the state nor the private sector can be relied upon to do the job, who else can? Should we be looking for the development of some kind of new public-private partnership scheme, perhaps under the aegis of the EBRD, and with the involvement of the main international banks operating in the transition region? The goal of such a scheme would be to

produce highly professional, highly skilled teams of venture capital specialists, with the technical capacity to assess technologically complex proposals — and the personal integrity and banking skill and experience to steer clear of the lobbies and the special pleading. This is a tall order, but it is, again, something that does not have to cost the earth. The key is getting the human capital in the right place, as a precondition for getting the financial capital in the right place. And here we seem to be back with a simple proposition that emerged from our discussion of the general issue of foreign investment, domestic capabilities and government policy. The first target of policy for the knowledge economy must be the policy-makers themselves, in the private as well as the public sector. Only once all the key institutions of the transition countries — government departments, companies, universities, research organisations etc — are run by people with an active understanding of the discourse of the knowledge economy and an ability to dialogue with all their opposite numbers, will those countries be able to build adequate defences against the *magnification* of future global crises.

#### Notes

- 1) EBRD, 2010, p.118. Note that the Hungarian Balance of Payments moved into surplus in 2009, as GDP fell by 6.3 per cent under the impact of the global recession.
- 2) *Rossiiskii Statisticheskii Ezhegodnik 2003*; *Rossiiskii Statisticheskii Ezhegodnik 2009*, Rosstat. Note that these figures include graduates in service trades, as well as in the traditional industrial trades.
- 3) Note that the figures in Table 2 exaggerate the extent of the fall somewhat because they are *net* figures. Thus the negative figure for 2009 reflects large-scale capital outflow as well as a substantial fall in gross inflows in FDI. Speaking at the VTB Capital International Investment Forum 'Russia Calling' conference on 5 October 2010, Russian finance minister Aleksei Kudrin gave a figure of \$36 bn (2.9 per cent of GDP) for gross FDI inflow to Russia in 2009 and an estimate for the corresponding figure for 2010 of \$40+ billion. Total capital outflow for 2010 is estimated by the Central Bank at \$38.3 billion, of which a substantial proportion is in the form of outward FDI. This would nevertheless suggest a substantial upward correction in the EBRD estimate for net FDI inflow in 2010.
- 4) World Bank data
- 5) Aleksei Golubovchik, chairman of the board of directors of Arbat Capital Management, quoted in *Izvestiya*, 14 October 2009
- 6) Golubovchik wonders how many more power stations have to break down in Russia before the problem is addressed.
- 7) Official Russian statistics
- 8) Official Russian statistics
- 9) 14 October 2009
- 10) EBRD, 2009, p. 234
- 11) D. Turner, 'Mandelson plans "technician class"', *Financial Times*, 12 November 2009
- 12) Yevgenii Gavrilin, chief economist of Moscow investment bank Troika Dialog, quoted in C. Belton, 'Moscow backs \$32 billion state assets sale', *Financial Times*, 18 November 2010
- 13) Rosnano press release, 9 November 2010, <http://www.rusnano.com/Post.aspx/Show/28834>
- 14) *President Rossii*, <http://kremlin.ru/news/8904>, 13 September 2010

- 15) *RIA Novosti*, 24 June 2010
- 16) *Vedomosti*, 7 June, 2010
- 17) 'Polish banks unwilling to lend despite having the resources to do so', *New System*, 27 January 2009; 'Russia c. bank sees lending rate growth 15 pct in 2010', *Reuters*, 18 November 2009; 'Russia: will new liquidity measures of the Central Bank kick start bank lending?', *RZB*, June, 2009
- 18) N. Buckley, 'Banks balk at proposed loan restrictions', *Financial Times*, 17 November 2010; 'Russian banks cut bonds for first time since 2008 (update 2)', *Bloomberg Businessweek*, 15 July 2010
- 19) J. Cienski, 'Fast movers in a positive state of mind', *Financial Times*, 17 November 2010

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