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From "Brain Drain" to "Brain Circulation": The Case of NES and Modern Economics in Russia

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## I. Introduction:

The story of NES, the graduate school of modern (Western) economics is mainly a case study of a 'transfer of technology' or a variant of 'foreign direct investment' (FDI) from the West to Russia following the transition. Yet, the data on the where-about of the graduates of NES, that shows that a great majority of those who continued their studies abroad for PhD (a few for MBA), didn't come back, at least by now, brings into the picture also the brain drain (BD) paradigm.

By the end of academic year 2006/7, out of 98 graduates that completed successfully their PhD studies in the West only 13 came back, mostly to NES. The picture is improved to some extent if we add to the above 3 graduates and one non-graduate with Russian PhDs (*candidat nauk*) who came back to NES following a *Post-doc* period in the West, and 3 non NES graduates with a Western PhD who joined the faculty of NES. All these bring the balance to 86 graduates with PhD that stayed abroad against 20 who came back to Russia, a ratio of one to between 4 and 5.<sup>1</sup> On the face of it therefore Russia already lost nearly 90 high quality economists, a very substantial proportion among those with up-to-date modern economic education, what may be considered a severe case of BD. Moreover, this outflow was not the same as the rather autonomous wave of scientists, mostly in the natural sciences, computer sciences and engineering that left Russia upon the fall of the iron curtain and the opening up of its borders with the West. In the case of NES the school prepared its students, among others, for study in the West, even helped them with admission, and can therefore be 'blamed' for encouraging the brain drain of its graduates. Indeed many in Russia, even among the group of market reformists, sighted NES for causing the BD, some even saw this as a hidden goal of NES.

There is no need to deny any wrong intentions; we hope this is clear to all. Even so, the figures are there and this is a good enough reason to evaluate the project of NES also in the context of the wide discussion in the economic literature about what was used to be called until a couple of decades ago 'brain drain', but since then accumulated many other titles, mostly of a more positive nature, like "brain circulation". This paper surveys the relevant literature about "high skilled labor migration" and then discusses NES, also as a case study of this paradigm. The paper proceeds with a short survey of the

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<sup>1</sup> In addition to the above balance of PhDs of 14 graduates who received MBA degrees in the West 7 came back, and out of 15 who received a Western Master degree, 10 came back. (In most cases a Western Master degree is endowed to students who don't qualify to continue for PhD. All the numbers above omit travel of graduates during the early years for shorter periods, up to a year of study, mostly to Western Europe, most of which did come back.

relevant aspects of the "brain-drain-brain circulation literature (section II), continue with a discussion of the application of the above to the case of Russia during the transition (Section III), followed by a discussion of the case of NES (Section IV) and by a conclusion.

## **II. From brain drain to brain circulation: the role of the Diaspora<sup>2</sup>**

The brain drain literature, while concentrating mostly on the impact of the migration on the countries of origin, deals also with its costs and benefits to the countries of destination as well as the welfare effect on the entire world. Here we are mostly interested in the impact on the COs in general and eventually on Russia in particular. Other aspects of this vast literature will be discussed only so far as they affect the COs.

The economic motivation to migrate across countries is based on existing and perceived advantages of the CD over the CO. Following a classification offered by Solimano (2008, p. 5), for the motivation to migrate among highly skilled people, the urge for out-migration is determined by three clusters of gaps between the two countries, with some overlap among them: First is the expected material gain in income and wealth, standard of living and material quality of life. These may include, on top of the sheer material advantages, also differences in the provision of public goods and services, including the appreciation of the socio-political regime, like freedom and democracy. Second are the expected gaps in the levels of study, research and/or job infrastructure and environment, - the quality of research facilities, proximity to the centers of innovation for scientists, the level of study for students etc., the prospects for advancing careers and of upward mobility. The third gap between origin and destination is the perceived differences in personal and cultural attachment to the family, to the local culture and the way of life. In many cases, but not in all, it is this third cluster of factors that offset the other gaps and tilt the balance in favor of returning to the country of origin.

The literature of the 1960s and 1970s of the previous century, inaugurated with a series of classical papers by Patinkin (1968), Johnson (1968) and Bhagwati (1976) and others, tended to concentrate on the emigration of scientists and other highly skilled professionals out of developing countries, and of thousands of students going to study, while only few had been coming back. This phenomenon was dubbed "brain drain" and the discussion concentrated on the negative implications for the countries of origin (COs). Some positive offsets, like the sending back of remittances and the benefits of those coming back with improved skills were mentioned, as well as potential benefits of the forming of scientific Diasporas in the countries of destinations. However, all these were considered as very partial offsets, justifiably so. One notorious example that was highlighted by this literature was the migration of tens of thousands of medical doctors and nurses mainly from India to Great Britain and to other developed countries, causing severe loss of scarce public funds spent on training, and a decline in the availability and quality of medical services, so critically needed in the countries of origin,. This 'slice' of brain drain persists to this day and the range of COs has been expanded to include the Philippines, countries in Sub-Saharan Africa and others, (Bach, 2008). Proposals to tax emigrating scientists as a partial repayment of the cost of education, among other means, were brought up, and the Soviet Union even imposed such payments during a few years in the 1970s on Jewish immigrants that sought to leave [XX].

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<sup>2</sup> This section is based mainly on papers and books by Adams (1968) Bhagwati, (1976), Commander et al (2003), Commaner et al (2004) Docquier and Rapoport, (2005); Schif, 2005; *The Economist*, (2005) Saxenian (2006), Saxenian, Sabel and Kuznetsov (2008), Kuznetsov, (2008; 2009 forthcoming), Ellerman, 2009 forthcoming, Solimano (2008), Regets, (2007) and many references therein.

A second generation of papers during the 1980s and 1990s, brought into the discussion, a number of dynamic elements that could have also serve as additional offsets. The most important among them were the assumed positive incentives to study at the home country in order to qualify for migration, created by the increased opportunity to go abroad as advanced students or professional employees. Since only a small proportion of those investing in such education would be allowed to enter to the host countries, the rest provided additions to the human capital of their COs. The theoretical and empirical literature attempted to estimate the extent of the offset of this phenomenon under different conditions and policies (Commander et al, 2003 pp. 11-17; Ellerman, 2009 p. 37; Stark, 2004 and many references in the above).

The increasing numbers of 'brain' or skilled migrants over time in the host countries, and the rise in their professional, material, entrepreneurial and executive positions, brought about the development of variably organized diasporas, and economists turned more attention to possible benefits of their activities to their COs. The main focus was first on the volume of financial flows, remittances, mostly to families of the migrants but increasingly also as philanthropic contributions to the home governments and other welfare organizations, and then also as business investments. Attention was then directed to the role of members of the diasporas as bridges between their two countries: the development of trade, the transfer of scientific information and knowledge and new technologies, the establishing of businesses and the facilitating of joint business activities; in a number of cases even the creation and development of entirely new branches of economic activity. The main attention of the literature in this last case was directed at the transfer of high-tech and ICT activities from Silicon Valley and similar innovation centers - where scientists of many nationalities, specifically of Chinese and Indian origin had been working, - to Taiwan, India and then China, not to mention more advanced countries like Israel and Ireland, where similar developments took place at the same time (Commander et al, 2004; Saxenian, 2006 and many of her earlier works and other citations there; Saxenian, Sabel and Kuznetsov (2008), Kuznetsov and Sabel, 2009). Kuznetsov (2009a),

In these last cases a small number of entrepreneurs (called by Saxenian 'Argonauts' (2006) that saw the business potential in their respective COs, including that of low cost skilled work, that new how to deal with domestic bureaucracies and other barriers, and understood the potential of creating new industries and opening new markets, and in some cases also out of patriotic feelings, - succeeded to create in these countries over a relatively short period of time, entire sectors of different IT activities. Their activities moved from simple outsourcing services (India) and basic production of IT hardware (Taiwan) to higher levels of sophistication, up to the development of indigenous innovative activities in specific niches. Furthermore, the newly developed IT sectors created, through 'backward linkages', demand for inputs and activities of many kinds including in particular training and teaching in the countries of origin the skills needed for the new industries, the development of financial markets, including for venture capital, and of other required new private and public institutions, pressures on the public bureaucracy to ease and relax the regulatory barriers; and to also gradually open 'forward linkages', - exports and internal markets for the new products and services. The development of internal markets is particularly important for large countries like India and China.

The above mentioned initiatives and activities were accomplished by a relatively small number of entrepreneurial expatriates that traveled to their country of origin, some permanently and many others for shorter periods of time 'commuting' between the US and Asia. This commuting was supported by intensive telephone, internet and video conference communications that grew wider, better and cheaper. More travel was done by people of the COs to be trained and study abroad, many of whom among the employees of the new companies. This traffic, back and forth, by domestic people and by members of the diaspora received the title of "brain circulation" (BC). In a number of cases mentioned above, this BC contributed to the enhancement of the growth potential of the COs and thus turned the

BC into a "virtuous circle" or "cycle" (Kuznetsov, 2009 (preface), p. xiii; 2009a, p. 236; Ellerman, 2009) as a replacement of its opposite, the vicious circle of the BD. The BC as we have seen is composed not only of return migration but also of intensive flows in both directions, of people, for shorter periods of time, of information, technologies and money.

The important point here is that the economic contribution of the few entrepreneurs and scientists who created these new industries far exceeded, by any measure, the net potential loss of those who left. This is even more the case when one considers that the alternatives opened at home to those who migrated in the first wave, were of very modest value to themselves and to their countries, and also that many who traveled abroad were students that acquired abroad a significant part of their human capital.

In the more recent literature the discussion about the diasporas is concentrated on two main, interrelated roles: the first is the dual advantage of their members emanating from their acquaintance with the new economic and technological developments in the destination countries and from their position in corporations and organizations that are pursuing research and business activities in these spheres; and at the same time with the conditions, people and institutions in their respective countries of origin. This dual advantage put diaspora members in a position to benefit the latter and to deal with barriers there, applying technologies and opportunities developed in the former. The second advantage of the diaspora is its development into, a search network for knowledge, people and organizations: members of the diaspora and others that can be drawn into the activities listed above in the countries of origin (Kuznetsov and Sabel, 2009, pp. 6-9; Kuznetsov, 2009a, pp. 226-230). We come back to this below.

The "brain circulation" across the 'bridge' provided by diaspora members and through their activities is more productive and bears more results the stronger are the "bridge-heads" or the 'nodes' of the various networks, at both ends, the COs and the CDs. At the destination, the better the organization, cohesiveness, of the diaspora and the wider and tighter is its network, the more active it is in promoting closer connections with the home country and higher level of identity with it, the higher is its contribution to the success of the above listed roles. This is the case even if much of the actual activities are taking place by individual members of the diaspora.

At the other end, the benefits of the 'brain movement' to the COs depend to a large extent on its reception there. An open economy engaged in the Globalization process, with a developed institutional structure and environment, and a favorable approach to the outside as well as their own diasporas can better utilize the offerings provided by the outside, and more effectively harness them to the cause of economic development and technological innovation. Notice that in both India and China and also in other countries of origin, the involvement of the Diaspora became possible, as well as more attractive and effective when their respective countries opened up and liberalized.

In addition to general policies of 'openness' one can distinguish two, though related, vectors of elements that facilitate productive brain imports: The first is the state and level of the relevant institutional infrastructure; the more advanced and modernize it is the more attractive it is to outsiders. Institutional developments in the COs can be thought of as the process of narrowing the clusters of gaps discussed above, especially in areas of interest to members of the high skill diaspora, like research infrastructure and reforms in higher education and in policy making. The second important vector consists of the general approach of the people and the governments toward the outside world in general and the diaspora: Are expatriates welcome? Is cooperation part of the official policy? Are there specific policies designed to remove barriers to returnees? And, are there special programs to

encourage back migration, including material incentives, in income and, when applicable, in research infrastructure.

Finally the effectiveness of BC is much enhanced if the CO is endowed with 'elite', higher education and research institutions. Such top "centers of excellence" (CEs), can play the role of a bridgehead in the CO, a principal 'node' in the search network: in the absorption, interpretation and adaptation of knowledge received from the outside to the condition and needs of the CO, in the attraction of scientists to return and/or visit and to train more highly skilled scientists and thus accelerate and intensify the process of BC into a "virtuous circle"(Saxenian, 2006; Kuznetsov, 2007; *The Economist*, 2005; Cervantes and Guellec 2002).

The existence of CEs in the COs is especially important in the context of the recent growth literature that emphasis their importance leverages of growth in developing countries: It is now recognized that in addition to the traditional role of developing countries of producing at the lower levels of the production cycle, even they can take part in the higher levels of the cycle by creating their own innovative, cutting edge, production niches. Top level research and higher educational institutions are necessary conditions to make this possible. (Kuznetsov, 2007)

The impact of the movement of talent in both directions, be it expatriation or just 'circulation', is therefore affected by the quality and disposition of the diasporas, on one hand, and the approach toward expatriates and conditions in the countries of origin. In a recent paper (forthcoming, 2009) Kuznetsov maps the attributes and dynamics over time of diasporas, their relationships with the countries of origin, the types of activities they engage in those countries, all these as depending also on the approach of the CO towards the diaspora and its institutional readiness and adequacy.<sup>3</sup> Young diasporas at their embryonic stage are fragile, not well organized and their networks are small and thin. Immigrants typically concentrate on their individual careers and sometimes consider their branding as members of the diaspora as a barrier. They usually also have little to offer to their CO. If they engage at all in any activities in the COs, they are small, sporadic, unpublicized and short term projects. Only later, when the migrants accumulate relevant knowledge and human capital establish connections, rise in the career ladder and, sometimes assemble material capital. At the same time also the diasporas reach a higher developing stage, their organization is improved, membership becomes a source of national pride and there is more involvement in small start- up projects and with some cooperation with the CO governments (Table 11.1 p. 223).

The next step according to Kuznetsov is to list the forms of support and involvement of diasporas: First, he classifies the type of intervention of expatriates, mostly according to the partner or target in the COs: from family remittances and philanthropic activities, through investment in small business projects, the provision of skills and human capital to the public and then the business sector, up to the transfer of knowledge in various ways, through documentation of technologies, translations of books, support for local universities, distance learning and the like (Table 11.2, p. 226 and the discussion around it). Then Kuznetsov classifies the involvement of diasporas according to (monetary) commitment levels and project development, - donating "seed money" all the way to a larger investment -; and, the extent of actual engagement and implementation (Table 11.3, p. 229). At the top-left corner there is "seed money" donated to "showcase" projects, while the bottom-right corner lists large projects like the establishment of universities, large collective diaspora investments and significant return migration of talent.

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<sup>3</sup> See in particular Tables 11.1-11.4 and the discussion around them, pp. 222-237.

The final distinction between different activities of diasporas, indeed their nature, is between the roles of direct involvement, - investment, return migration -, and those of "search", providing information, advice, looking for the right experts that can help. The role of "search network" is characterized as "antennas bridges and springboards" (p. 225) to facilitate "knowledge based growth" (p. 234). This distinction also characterizes types of diasporas: the role of "search" is at the same time the most important and the more realistic. More important, because it provides the essential and absent elements needed in the COs for both institutional transition and "knowledge based growth"; it is most realistic since the chances for return migration are low, at least during the early stages. Kuznetsov compares such search diaspora network to alumni associations of universities and to venture capital groups, where the 'venture', rather than the 'capital' element is their most important feature (pp. 230-233).

The problem with the "search" activities of the diasporas is that they need a domestic partner, able, interested, and favorably disposed at the receiving end in the COs. When such a partner is missing, it may be up to the diaspora to, first help create it, or at least establish "demonstration projects" before moving away to the pure 'search role'. It may be necessary to first bring back a core group that will establish a bridge head in order to get the process moving (pp. 230-236).

The full range of interaction between the quality and character of the Diaspora on the one side and the conditions and absorption readiness in the COs on the other is presented in Kuznetsov's Table 11.4 (p. 234). The best match is between highly sophisticated diasporas and favorable conditions in the COs where "sophisticated brain circulation networks" in both sides provide a "key resource in transition to knowledge - based economics" (p. 234). If the conditions in the CO are less ready, more work needs to be done. Weaker diasporas can only do so much, even less so if the COs are institutionally behind and adversely disposed. Kuznetsov classifies Russia and other FSU states as countries with "relatively disengaged (emerging diaspora networks)" and at least Russia and Ukraine as COs where the conditions for diaspora activities are "unfavorable". In the next section we come discuss the Russian case in greater detail.

### **III. Brain drain and brain circulation in Russia during the transition**

Under the Soviet system the sectors of higher education, scientific research and engineering enjoyed a high priority status, manifested in generous budgets, material and social privileges to leading scientists and developers of advanced technology. The Soviet Union had among the largest number of scientific workers, engineers and students relative to the size of the population. Much of this effort was directed toward military goals, as part of the cold war and the effort to match the military capability of the West; however, another part was directed to industrialization and economic growth with an emphasis on machinery and heavy industry. For these reasons both higher education and research were concentrated in the natural sciences and engineering. Social sciences served mostly as tools for ideological education and indoctrination, in order to maintain the communist ideology. A number of fields in the sphere of humanities, culture and art were also on high levels, though they were ideologically biased and constrained. The ample budgets and large numbers of students and scientists came in part to compensate for the negative effects on the efficiency of much of the scientific work of the centralized nature of the Soviet system, the tight control from above, the distorted incentives, the ideological biases, and the relative isolation from most of the rest of the world.

Following the fall of the Soviet Union and the opening up of its borders, Russia, as well as the other newly created FSU (and Soviet Bloc) states, experienced an outflow of hundreds of thousands of

scientists, engineers and other highly skilled workers.<sup>4</sup> They were lured by better opportunities: higher salaries and quality of life, a more productive research and work environments. At the same time they were pushed out by the sharp decline in funding and the general disorganization in the spheres of research and production, including in the military sector and in heavy industry, as well as in higher education. All these suffered from the sharp decline in government revenues and from the general disorganization of governance during the early years of the transition, as well as from the radical structural changes that left many previous top priority industries and research areas redundant.

In addition to the out migration of scientists and engineers, there was also a wave of young people and students at various stages of study, seeking education and training, among others, in new fields of study, unavailable in Russia but required to the transition to the market, or as a means of migration. For some the urge to leave reflected disapproval of the conduct of the Soviet regime under the old regime, centralization, governmental and ideological control, and isolation from the outside world, combined with little hope of near change. Others suffered more from the disorganization and the declining incomes, work and research environment, during the early stages of the transition. The emigration wave among the general population was accompanied by a specific exit wave of members of the Jewish community who were allowed to leave in various numbers already before the fall, indeed since 1968, a community characterized by a very high proportion of scientists and academic professionals. These two exit waves to the West were only partially offset by migration of highly skilled ethnic Russians from the other FSU states 'back' to Russia.

The push outside created by the opening up and the situation in Russia was reinforced by a pull from the countries of destination in the West, luring leading Soviet scientists in a number of fields, mathematics, physics, engineering, where Soviet science and research excelled. As a result many research institutes in these areas lost some of their best people in a matter of few years, and with them also the capacity to adequately train younger generations of scientists and other professionals.

Finally, the declining state of the research institutes and of the state universities in Russia created even a larger movement dubbed 'internal migration' of scientists and academics, as well as students, who left institutions and universities in order to pursue more promising and better paid positions in the emerging new economy.

The declining quantitative trends in the number of scientists, students and in research and of the budgets of higher education were reversed around and after 2000 when more order was restored to Russia and the general material conditions improved somewhat. Since then also the numbers of high skill emigrants declined. Expenditures on R&D in Russia that declined from about 2 percent of GDP in 1990-91, to about one half of one percent during the mid 1990s, climbed back to just above 1 percent of GDP in 2006, still only about half the OECD average. The number of researchers per 1000 employed went down from a high level of 9 (1994) to less than 7 in 2006, very close to the OECD average. (OECD, *Statistical Portal*, 2008). Also, following a decline during the early years, the number of students in higher education started to increase and as of 2006 it surpasses, in relative terms, most of the developed countries (Kotkin, 2007, pp. 17-18). Add to this that the entire volume of brain drain from Russia, up to recently, accounted for no more than 2-2.5% of the stock of highly skilled workers in Russia (Based on Docquier and Marfouk, 2006, p.177), it becomes clear that the main problem facing Russia on this front is not one of the number of scientists lost but their quality; and that while funds are still behind the Western norm, the way funds (and scientists) are being used, and their quality, are the main problem: Science and higher education are still conducted pretty much

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<sup>4</sup>Some Data on migration of Russians to the West can be found in Docquier and Marfouk, 2006; Rybakovsky and Ryazantsev, 2005, pp. 9-12, 25-27; [NSF, OECD]

in the old ways of centralization, bad incentives, rigid and flawed appointment methods and governance (Cervantes and Malkin, 2001; Kotkin, 2007, p. 8 (see quote below); pp. 17-25). All these and other factors to be discussed below, severely limits the level of communication of the high skilled sectors with the outside, particularly the West, including little use of the emerging diaspora and little interest of this diaspora to engage with Russia, let alone to come back. Here too, the number of contacts made or of return migrants is less crucial; the qualitative value of such mutual relationship is the key.

We come back below to the discussion of the barriers to the development of modern high education and research in Russia.

### ***The Russian diaspora during the transition:***

Most of the relatively small number of people who left (or expelled from) Russia and the Soviet Union during the Soviet period, where opposed to the regime and to the extent that they formed diaspora-like groups, they were longing for 'old Russia' or for a new one, both waiting for the regime to fall. Many among them as well as the larger wave of Jewish immigrants that since 1967 were allowed to leave in increasing numbers didn't have plans to come back even under a change in the regime. A few among the high skilled emigrants joined the ranks of the 'Sovietologists' as political and social scientists and economists and contributed to the scholarly research on the Soviet Union.

It takes a considerable amount of time for new waves of immigrants to get organized into active diaspora organization and in most cases the initial efforts of immigrants are directed to individual advancement, on financial support to families left behind and on assistance to the absorption of new groups of immigrants. Only later, as we have seen above, some diasporas start to engage in more concerted projects towards their respective COs. In his analytical chapter on diasporas Kuznetsov (2009a) provides examples on the state of diasporas of various countries in recent years and on their activities, the conditions in the COs, and the range of forms of cooperation of the diasporas with the COs. In what follows we focus on the characterization of Russia (and occasionally on other transition countries, TEs) during the transition period:

The diaspora of Russia and of most other TEs following the transition are still very young and at their 'embryonic' stage. Their members focus on "individual success"; and their attitudes are characterized by "belonging to a diaspora viewed as a disadvantage" (ibid, Table 11.1, p. 223) and where "Migrants are usually concerned with getting ahead individually and are not concerned with collective diaspora identity, and those personal ambitions drive the nature of the projects they sponsor at home, which are often limited to unpublicized sporadic and individual efforts". (p. 222).

And (that): "Elsewhere Diaspora networks have failed to emerge despite the large number of high-skilled migrants who do not even try to get involved with their home countries, for example, those from the Russian Federation and Ukraine". (p. 221). Later down in the chapter Kuznetsov classifies again the diasporas of Russia and Ukraine under the rubric of "relatively disengaged (emerging diaspora networks)" (Table 11.4, p. 234).

A corroboration for this evaluation by Kuznetsov is provided by Pandey et al (2009) where on a number of occasions, they mention Russia as a potential competitor to India, given its low wages and multitude of engineers and scientists, among others also during the Y2K boom, a potential that didn't materialize, at least partly due to an inactive Diaspora (pp. 82-89, 103-105).

**(And) the level of cooperation and institutional readiness of Russia**

At the outset of his chapter Kuznetsov classifies Russia (and Ukraine) among a "A third set of countries..(that)...do not yet recognize expatriate talent abroad as an opportunity." (*ibid*, p. 224). He then goes on to put these two countries, together with all FSU states (and others), among those with unfavorable country conditions, to engage in intensive circulation with the diaspora (Table 11.4, p. 234), which, as we have seen before they are also "disengaged" and at best only 'emerging' (*ibid*)<sup>5</sup>.

Here and elsewhere Russia and other FSU states are cited consistently as examples where their institutional environment is undeveloped and lagging, the investment climate is weak, risky and unfriendly, the government and the bureaucracies are self protective and defensive. Appointments in the public sector are made by connections rather than merit, so that high skilled and better qualified expatriates have little chance to be invited.

A glaring example of the above, as cited by Kuznetsov is that of Armenia where a highly qualified, well organized and willing diaspora (unlike that of Russia) is restricted mostly to philanthropic activity and barred from more productive more productive 'brain circulation':

"The chief obstacle to development was a domestic elite composed, like the elite of many contemporary stalled states, of communist bureaucrats, security service officers, and managers of large state-owned enterprises. This elite did, and does, push aggressively for economic liberalization and privatization, but in a way that allows its own members, especially enterprise managers, to capture the major benefits of reforms. While such elites in Armenia and elsewhere welcome economic and political support from the diaspora, they do not want to see diaspora activists and investors perturb their own privileged position at home. They treat the diaspora primarily as a potential political and economic competitor" (Kuznetsov and Sabel 2009, p. 17)<sup>6</sup>

The above is one example of a general finding in the literature of the lagging institutional development for a market economy and a free society in Russia and the other FSU states, even given their (low) level of per-capita GDP. (See for example Keren and Ofer, 2007).

When the specific case of Russia is concerned, one have to add to the above on the negative side also a strong anti-Western disposition and sentiment of many among the population as well as of the government. This sentiment, with deep and old historical roots, reemerged first when the early liberalization and market reforms in the 1990s didn't live up to expectations, and then again, during Putin's years and following his leadership. The imprisonment of Khodorkhovsky and the nagging of foreign investors, the virtual re-nationalization of the energy and other 'strategic' industries, the increasing government meddling in the economy, the retreat of democratic institutions, including the specific law that restrict the operation of foreign NGOs, and the limitations and quasi nationalization of many media institutions, all contributed to reduced interest of Russia in brain circulation and of members of the diaspora to get engaged with Russia.

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<sup>5</sup> Russia, Ukraine, Armenia and other FSU are cited in these connections in Tables 11-1 and 11-4. The case of Armenia with similar characteristics is discussed in detail in chapter 6, by Minoian and Freinkman (2009). Hungary and Slovenia and the Baltic countries are mentioned as more successful cases.

<sup>6</sup> Kuznetsov's assessment here is based on a much more detailed analysis by Minoian and Freinkman, 2009.

### ***BC and reform in higher education and research***

While the phenomenon of brain circulation in all its aspects is relevant to many sectors of the economy of COs, this study is more interested in its manifestation in the sector of higher education and research. Here we find in Russia (as well as in most other TEs) a very slow process of reform, held up by a combination of lack of resources, more important at the early stages of the transition, and deep conservatism and resistance to reform by the rectors and faculty of the old universities. We mentioned the initial budget crunch as an important incentive to external as well as internal brain drain. In recent years the budget situation improved quite significantly, as we have seen above, may be more so in Russia as compared with other TEs (Chawla, 2007, pp. 224-225, 254; Kotkin, 2007, pp. 19)<sup>7</sup>. But as Kotkin emphasized, the additional budgets were used in many cases to solidify the conservative structure and as a tool to resist reforms rather than for the purpose making them (p. 8, see a full citation below).

Yet, beyond the poor material conditions there is also resistance by the staff and administrations to make the necessary changes in curriculum, modes of teaching, the combining of teaching and research and the conduct of research, in academic policy, institutional and governance setting and no less important, in opening up and readiness to accept a new generation of scholars, especially expatriates, a generation that brings with it the knowledge, ability and will to make all these changes. This is true despite the fact that Russia (and other TEs) joined the "Bologna process" (EU, 2007; Csaba, 2007, pp. 97-103; Kotkin, pp. 3-5, 8-10; 31) and introduced some organizational changes, like the recommended shift to a system of three distinguishable degrees, as in the Anglo-Saxon countries. The needed changes in higher education and research in Russia (and the rest of the TE group) are enormous and have to deal with the old modes of the pre-revolutionary system as well as with the thick layer of controls and ideological biases imposed on it by the communist regime<sup>8</sup>.

With respect to academic appointments, only a few countries among the TEs, but not Russia, moved to recognize foreign academic degrees, or publications in foreign journals for purposes of hiring and promotion. Expatriates with PhD who want to be recognized by the state have to go through a process of domestic defense as candidates of science or doctors of science. In most cases existing faculties are defending their positions and academic appointments are still not made on the basis of (the new) merit. (See Dabrowski, 2007, pp. 77-83; Csaba, 2007, pp. 95-108; Gaidar, 2001; Coupe, 2007 on Ukraine.

The following are a few citations from a report prepared recently by Stephen Kotkin for the Ford foundation (2007):

"Fifteen years into independence, the universal problem in Russia remains the need for good management and good governance (of universities). A poor governance and incentive structure at universities threatens to skew the Russian state's now-ambitious plans for and major new investments in higher education". [P. 6]

"A Mostly Unreformed State Environment: Programs working with the state to promote change have had (predictably) circumscribed systemic effects. State environments in Russian higher education are unreformed in most decisive dimensions: the continuing absence of a countrywide

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<sup>7</sup> According to Kotkin, the budget to higher education rose by about 70% during the Putin years, but even at that level comprised of just 1 percent of GDP, as compared with 2 percent for the OECD and 3 percent in the US (ibid, p.17)

<sup>8</sup> We devote a separate chapter in the book to higher education reforms in Russia and other TEs. In the mean time see Ofer, 2008).

objective entrance examination to curtail admissions corruption (belatedly under partial experiment); the continuing feudal management structures and habits; the undifferentiated state diploma for all universities and the lack of a real public ranking system that would encourage institutions to strive to rise in rank and that would punish laggards; the absence of possibilities (let alone rewards) for genuine research. These circumstances of upside-down incentives and of an overall poor management system (even in cases when the managers themselves are good people) seriously blunt the efforts to introduce anything new in the state system, such as happened with the Soros Megaproject. (pp. 7-8)."<sup>9</sup>

"Amid all the rhetoric about "disintegration," the university system (like many other subunits) did not disintegrate. On the contrary, the state system proved it could absorb fantastic sums of grant money and more or less continue on its merry way. As Ford Moscow's former higher education program officer, Galina Rakhmanova, noted, "working with the state is desirable but highly problematic." [P. 8]

"Education Ministry officials have introduced major reform projects, and these officials themselves complain of rector conservatism, of dogged resistance to change, which is indeed evident in many cases. ... But even the Education Ministry continues to feel frustration with its inability to transform the state sector." [P. 8].

"Rakhmanova (one among the heads of the Ford Moscow office) notes that the gigantic state system in higher education remains weak in the sphere of professional development, with heavy teaching loads, an enduring weak research culture, highly centralized and bureaucratized management, even less mobility than previously (to universities outside one's home region) and corruption. One idea— introduction of a countrywide standardized university admission exam— has met opposition, since taking the admissions process out of the hands of faculty committees would cut off an illicit revenue stream....

"By and large," Rakhmanova soberly concludes about the state higher education system, "the reality is that the quality of education remains low, research capacity is lacking, and little, if any, has changed in teaching methods." [P. 31].

"In some ways, the key to everything is the actuarial table: the generational shift that was supposed to have happened, but the biggest part of which was delayed by the refusal of the older generation of "scientific communists" to give up and retire. Whatever their determination, however, they cannot cheat death. The older generation, good and bad, is dying off. This generational change promises to be massive." (P. 61)

The above relates to higher education in general and it applies with some variation to all sciences and disciplines. Economics, however, is a special case, mainly because under communism it resembled modern economics only in name, even this only partially, - it was called "political Economy" rather than economics, and consisted of completely different principles, content, research methodology and teaching modes. So while most sciences could benefit in many respects from the opening up and the establishing of communications with their counterparts in the West, economics had to be replaced almost completely<sup>10</sup>. Thus, the establishing of modern economics in Russia created a much stronger

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<sup>9</sup> A project designed to upgrade a few dozens of provincial universities as a counter weight to the academic and political dominance of Moscow and St. Petersburg. It took place over a few years at the turn of the last century.

<sup>10</sup> The exception consisted of a group of mathematical economists who practiced modern economics and were connected to the global community of the field. See Gaidar, 2001 and Ofer and Polterovich, 2000. A number of faculty members at NES belong to this group.

dependency on the West, including the sending of students to study abroad and to bring to Russia materials and people to teach modern economics and to train others. While at that time there were in the West a small number of 'emigres' with training in modern economics, much assistance had to be sought from the economics profession at large. At the same time there was also a much stronger resistance by the established faculties to accept the kinds of help that will make them redundant, even though a number among the members of the traditional faculties trained themselves to teach modern economics. The best example is the establishment, in 1992, of the "High School of Economics" (HSE) as a new state university, mostly by members of the faculty of economics of Moscow State University, a response to conservative forces and barriers inside MSU. A similar experience brought about the establishment of the European University of St. Petersburg with a small economics department. During the deliberations on the creation of the New Economic School, in 1991, its establishment inside MSU was considered but rejected on similar grounds.

The most common practice to establish teaching and research programs in modern economics in Russia was through the use of Western texts, short training visits in the West by prospective teachers and the invitation of Western economists for short period of time. In the next section we examine the role of the diaspora as part of the experience of NES to the transfer of modern economics to Russia.

#### **IV. NES and the diaspora<sup>11</sup>**

NES was not established by efforts of members of any kind of Russian diaspora. Unlike the case of ICT in India, Taiwan or China, NES was conceived and established by a group made of a number of domestic Russian (mathematical) economists and a number of Western economists. Only a few among the latter had some connection to the Soviet Union or the study of its economy.<sup>12</sup> Indeed, the selection of the Western members of the International Advisory Board (IAB) was made basically on the basis of their main field within economics and their potential contribution to the project. In this way no one among the IAB members could be considered a 'classical' diaspora member.

Yet, the model chosen for NES by the founders was based on a two year 'graduate' program of teaching in Moscow followed, for a select group of top graduates, by PhD training in the West designated as the future faculty, first of all for NES but also for other faculties of economics across the country, and also as senior economists in research institutions and policy making departments in the private and public sectors in Russia. In the mean time, until enough PhDs will be hired back to NES, teaching at NES would be conducted mostly by visiting professors from the West, coming to Moscow for at least one module of 8 weeks. Under the state of modern economics in Russia during the early 1990s, a full PhD training at home in Moscow was deemed not only non-feasible but also undesirable. We thought that at that initial stage only training at leading Western universities can produce the future leadership of economists that will be able to oversee the spread of economics in higher education and research institutions in Russia; and at the same time, maintain intensive collaboration with the West and the profession, a necessary condition for the fulfillment of the first goal.

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<sup>11</sup> Part of the information in this section comes from the web site of NES: [www.nes.ru](http://www.nes.ru).

<sup>12</sup> Of the members of the initial founding group, later the International Advisory Board, Gur Ofer is a 'Sovietologist' and his parents were born in Ukraine and Poland, Zvi Griliches was born in Latvia, survived the Holocaust and left following WWII, Sergiu Hart was born in Rumania, others may have had some socialist ideological leaning in the past. Barry Ickes, who joined somewhat later, was also a Sovietologist, as also was Eric Berglof. Barry has his parental roots in Poland.

Over the years a considerable segment among NES graduates chose to pursue PhD studies abroad. Most of them were admitted to top universities and with full fellowships (Ofer, 2007, table 4, pp. 55-56). The first appointments of Western trained PhD to NES were made in 1999 and by now (academic year 2008/9) there is at NES a faculty of 20 members with Western training, 3 among them already with (Western type) tenure.<sup>13</sup> Despite the young academic and biological age of the faculty, it already has a respectable record of publications in Western Journals, its members are active in international conferences, in joint research projects, and it acquired to itself high reputation and respectable ranking both inside Russia and abroad. In a few years, when the faculty at NES will mature, the introduction of a full PhD program will be considered. Even if a positive decision on this will be made, let me estimate that the option to go abroad for PhD studies will remain and will be used, and prudently so, for the reasons mentioned above. In September 2004 most of the veteran group who run the school since the beginning stepped aside and assumed various consultative roles, and transferred the leadership of NES to the young generation of Western trained faculty, and to a governing board made of majority Russian and only two Western members.

In 1998 a group of Western Economists, led by Eric Berglof of Stockholm University, won a tender to run RECEP (*Russian European Center for Economic Policy*), a research and policy think tank that consulted the Russian Government. A number of NES graduates with Western PhDs were hired as senior researchers and since then RECEP, which later was reestablished as CEFIR (*Center for Economic and Financial Research*), developed as a research and policy hub for many graduates of NES, led by expatriates with Western PhD degrees. In this way CEFIR became the first institutional contribution of the emerging NES diaspora to the effort of bringing modern economics to Russia. Over time NES and CEFIR moved closer to each other and by 2006 merged almost fully into one institution.

By 2008, indeed a few years earlier, NES/CEFIR fulfilled a major first step of its goal of bringing modern economics to Russia: it became the leading center of teaching and research in modern economics in Russia and among the very few behind the old iron curtain, a lighthouse and a bridgehead between the West and Russia, a key 'node' in a network that brings Russia into the brain circulation and network of the global study of economics.

NES is thus an embodiment of a major innovation, that while conceived not by members of the diaspora, it became possible through the expatriation of graduates, many among them that were trained at NES and admitted for study in the West that came back. They created an elite institution and a faculty of economics, a base and leverage for further engagement of the diaspora, made of those who didn't yet come back, in the effort of expanding the mission across Russia. This is in my view a case where the impact of a relatively small number of expatriates that did come back, out-weights whatever loss embodied in those who stayed abroad. True, the introduction of modern economics to Russia is an innovation that takes place in the public rather than the business sector, like the ICT sector in Asian countries, but the mission is similar in principle, to establish in the CO a new productive activity that provides an important contribution to modern economic growth.

As shown above, Kuznetsov and others emphasize the importance of an elite institutions of learning and research as a magnet for expatriation and for the creation of search networks and brain circulation with the diaspora in particular and on global arena in general. As we have seen, NES provided for both: most of the expatriates with PhD in economics who came back to Russia mostly to NES and CEFIR and only very few turned to other universities or the public sector. The few that did join other

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<sup>13</sup> In addition the NES faculty includes three tenured veteran Russian professors. See p. 1 above for more details on the structure of the NES faculty.

academic institutions, concentrated almost exclusively in the HSE and its affiliate ICEF (*International College of Economics and Finance*) and in the European University of St. Petersburg, some among them did this following a period at NES or with the help of NES. Only a few expatriates joined the business sector, some in a reverse order: following graduation (or even before) they took positions in private corporations and later traveled to the West to pursue studies for PhD or MBA.

We listed above the various barriers to the involvement of the diaspora in the domestic affairs of Russia. These barriers explain the small number of expatriates to Russia, other than to NES, and underline the strong pull of NES/CEFIR. It is well known among members of the NES community that these barriers also affect the decision of candidates to NES on whether to accept job offers or not.

As we have seen a significant number of NES graduates that pursued PhD (or MBA) studies in the West didn't come back (yet?). Many of them took academic positions in Western Universities, others moved to the private sector (mostly to consulting firms, banks and financial services, and some joined the staff of international organizations). Most of them joined the alumni association of NES, to which belong also most of the more than 350 NES graduates who upon graduation took up jobs in Moscow, Russia and other FSU states. The alumni association of NES is well organized, its members are closely attached to NES. Over the years members of the Alumni association provided a range of services for NES. Here we mostly focus on the segment living abroad that makes-up the emerging diaspora. This diaspora, the best organized diaspora of Russians abroad, maintains an intensive information and communication network where issues of NES and of the diaspora are discussed, there are already initial efforts of fund raising for various needs at NES. Members of the diaspora (indeed the alumni association) come periodically to teach courses at NES, both at NES proper and in outreach and executive education programs conducted by NES, there are joined research and policy oriented projects between diaspora members and the faculty at NES and CEFIR, NES alumni present papers at seminars at NES when they visit, take part in workshops and conferences and invite NES faculty members to do the same in their respective universities. NES alumni consult NES graduates on admission to PhD studies, and there are business related exchanges between graduates abroad and in Russia. Many graduates come periodically to Moscow for family visits and vacations that always include also visits to NES. The diaspora of NES thus fits beautifully into the alumni-diaspora model described and heralded by Kuznetsov (2009a, pp. 231-233).

As mentioned above most of the expatriate economists that came back to academia in Russia came back to NES and this was not the intended outcome. The original idea of the founders of NES was to provide Western trained PhD in economics to other universities and thereby to expedite the changes in the way economics is taught. This, noticing the few exceptions mentioned above, didn't happen yet on a sufficient scale. There may be many reasons for this but clearly a major one among them is the lagging reform in the higher education sector as described above, among others by Kotkin and Kuznetsov. Salaries are still low, little attention is paid to encourage and reward research, the mode of teaching is archaic, and the academic policy, institutional structure and governance are all rigid and conservative, including in the case of appointments and promotions. In addition expatriates face resistance by existing deans and faculties, their foreign degrees are not recognized as well as publications in external journals. Even the most advanced state faculties of economics, like in HSE are not able to bring their hiring and promotion policies, the emphasis on research and the governance structure, up to modern practices (Kotkin, p. 55; see fn. 14 below). In this respect there seems to be at least as of now, some degree of missed synchronization between the model of NES and the pace of reform in the higher education sector in Russia.

This is also the case with respect to expatriation of NES graduates to the public and private sectors in Russia. By now more than 350 graduates of NES are employed in Moscow and beyond mostly by business firms and a few in the government and other public organizations, NGOs, think tanks, international organizations. The small number employed by the government and the public sector reflects lower rates of pay as well as resistance by existing bureaucracies, reflecting fear of competition, preference to hire through connections rather than merit, and a different culture of public policy. Here there may be also parallel hesitations on the part of NES graduates. The same is even more relevant with respect to expatriates from the West. Graduates of NES living abroad are still too young to be able to invest in Russia or establish their own businesses, so in most cases they can be hired as employees. In both the public and the private sector they face similar barriers as mentioned above. They also face a different business culture and environment than in their current jobs in the West.

Finally, there is a more general hesitations by diaspora members to come back to Russia, because of public and governmental unfriendly (not to use 'hostile') disposition toward the "West", and the domestic policy of strong and increasing government intervention in the economy, the restrictions imposed on the independent media, and the general retreat in the level of democracy and freedom in Russia. Of the three clusters of gaps between the conditions in Russia and in the countries of destination, there is over the last 15 years some narrowing of the gaps in income levels and material conditions, but much less so in the work conditions and environment for the highly skilled, and in the general public atmosphere. One may therefore assume that under different conditions, of reforms in higher education and research and in the public sector and business climate, as well as in the general public atmosphere, the extent of repatriation to and brain circulation with Russia would be higher.

The above discussion points to the relative weakness so far in the ability of NES/CEFIR and its diaspora to create significant forward and backward linkages into the Russian economy and society, unlike some of the parallel cases in India and the Chinas mentioned above. While this is true with respect to the penetration into higher education and the public and private sectors, a certain adjustment seems to be in place. During recent years the visibility and recognition of NES/CEFIR in the economics and business communities in Russia increased significantly. NES/CEFIR participates, as an institution and through its faculty members in conferences, policy discussions and consultations, it is visible in various media channels and in public debates and it is recognized as a (the) leading authority in economics in the country. A few of its graduates also reached high positions in the government administration.

## **V. The balance of the BD-BC and conclusions**

What is then the balance of cost and benefit of the model of NES in terms of brain movement? The headcount is that out of about 106 graduates that completed PhD (plus those with Russian PhD and post-doc period abroad), by mid 2007, 20 came back and 86 stayed abroad, at least for now. This ratio of 1 to 4+ may be considered as strongly negative, though it is better than the statistics in many other countries and probably also in Russia (for non-NES migrants). The ratio is upward biased since there is no doubt that some among those who left came to NES in order to eventually leave and some among them would have found other ways to accomplish it. Let's mention here that until recently most of the financing of NES came from Western sources, so that the direct costs (other than the alternative costs of the time devoted to study) to Russia were very modest. Since 2005, NES instituted a significant tuition backed by a student loan scheme, so now the students themselves bear a significant share of the

cost. Since then also the proportion of financing from Russian sources (though not the government) has been rising.

On top of the above, in addition to those who pursued Western PhD, NES graduated so far more than 350 professional economists with advanced master degrees, covering a curriculum of high level graduate schools in the West. Almost all of them work in Russia as economists and this produces extra value added above any available alternative.

The second consideration is about the alternatives to study at NES, and hence, what could have been their career afterwards? This is difficult to determine, but given the state of higher education and research in Russia many of them might have ended up with ordinary careers in the private sector. True, they are very talented and probably could have made successful careers.

Do we have more students studying economics because of NES? Probably yes, and they study at a very high level. This is so if the theories mentioned above on the increased number of students as a response to a chance to be able to immigrate do hold<sup>14</sup>. The successful record of admission of NES graduates to top universities in the West may provide further support for this hypothesis. To the extent that this is so the economic cost of the net migration is lower.

Finally there is the creation and development of NES as an elite graduate school of economics in Russia, a project that fits beautifully into what was described above as part of the third generation of theories of brain circulation: NES as a pioneer of a technological transfer to the CO, here Russia, the teaching and research of modern economics. NES performs the function of a bridgehead that provides a solid base and a key 'node' in a 'search network' for expatriation and other forms of brain circulation, both activated by members of a young but solid, well organized and strongly attached diaspora. This diaspora, made mostly of graduates of NES who completed or still pursuing PhD studies, organized as part of the alumni association of NES and acts as the parallel bridgehead of the network in the countries of destination.

If we consider the micro-cosmos of NES in isolation, we can see that it fits the best configurations of brain circulation listed by Kuznetsov: it is an example of intensive knowledge transfer (2009a, Table 11.2, p.226), it qualifies under "large investment" and "large engagement" by a diaspora, though true, not in terms of money (Table 11.3 p. 229); and, it acts like a "relatively mature and well organized (diaspora), meeting "favorable country conditions" (that is at NES/CEFIR) and providing a "key resource in transition to knowledge-based economies" and "encourage return migration and form sophisticated brain circulation networks" (Table 11.4, p.234). The "unfavorable country conditions" in Russia are responsible for the fact that this micro model is not yet fully transformed into a macro, country wide one, and that Russia is classified by Kuznetsov as a country with unfavorable conditions as well as with "...disengaged emerging diaspora network", that is at the very bottom among developing countries (*ibid*). Ironically, one can claim that it is the same unfavorable conditions that contributed to the development of the diaspora of NES, its size as well as cohesion and quality. When

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<sup>14</sup> Elleman (2009, p. 51) writes on this as follows: "Where a professional degree is seen as an exit visa, the demand for such degrees will increase. After the financial collapse in the Russian Federation in 1998, enrollment in science and technology rose. The initial delight of educators was somewhat tempered when interviews showed that since the getting rich exit door had closed, many students saw a science and technology education as the next best road out of Russia. The net result of this natural experiment may well be that Russia will end up with more trained scientists and engineers than would otherwise have been the case. See also Commander et al, 2003, pp. 11-17, and Stark, 2004

the country conditions improve, this strong diaspora may become a model as well as a base for its expansion into a countrywide operation both abroad and in Russia with more backward and forward links in the Russian economy, as compared with the present situation.

Is the model of NES the best possible for the task of bringing modern economics to Russia (or for that matter to other TE)? Are there better alternatives? In Russia we may consider the model of the HSE, with four programs in economics, a bachelor degree for most students, a four year college in English, ICEF, under the guidance of LSE, and with a higher level curriculum; recently ICEF inaugurated a new Master program ([www.icef.ru](http://www.icef.ru)); and a general Master degree at HSE, all three with a small number of students. Let us state first of all that the HSE model should be considered more as complementary to NES rather than a substitute or competitor. Russia is a large country and NES is small and the expansion of modern economics can only take place if more faculties like HSE will adopt it and serve as vehicles for its spread<sup>15</sup>. As mentioned above a number of NES graduates are teaching at HSE, mostly in ICEF and in the master program. In addition parts of the curriculum for the master programs are adopted from NES. Yet, HSE didn't manage so far to introduce the conduct of research as mandatory requirement to its faculty, nor it was able to adopt, despite efforts, modern academic policy, mainly of appointments and promotions, a Western type tenure system, and of the governance structure<sup>16</sup>. While HSE has a network of connections with the West, mostly in Europe, its faculty, with very few exceptions, is not playing the kind of active role that the faculty of NES managed to acquire.

Another alternative model is provided by CERGE-EI in Prague, and CEU in Budapest. CERGE-EI is a graduate school of modern economics at the Charles (State) University, established in 1991 ([www.cerge-ei.cz](http://www.cerge-ei.cz)). CEU is a private University that includes a department of economics, established in Budapest in 1992 ([www.ceu.hu](http://www.ceu.hu)). Both provide a full PhD program to their students, with most of the supervision had been provided by visiting professors from the West, normally coming for short periods a few times a year. In recent years there is a higher number of in house supervision. The students at CERGE-EI and CEU come from most countries of Eastern and Central Europe and the FSU. Prague and Budapest are nearer to the West and are more inviting and friendly than Moscow and this facilitates the implementation of such a model. For these reasons also the faculties of economics that developed at CERGE-EI and the CEU are of a wider international composition and include a number of more senior professors. The Czech Republic and Hungary also have more devoted 'older' diasporas, also from the period before the transition<sup>17</sup>, and they offer more favorable "country conditions" (ala Kuznetsov, 2009a, table 11.4, p. 234), including generous financial support to CERGE-EI by the state, and by pursuing a more dynamic transition reforms, also in connection with the preparation to join the EU.

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<sup>15</sup> "Nonetheless, to the extent that Higher Economics School adopts governing structures analogous to those at NES, and to the extent that the high-profile Higher Economics School becomes a model, the influence of NES could spread". (Kotkin, p.55).

<sup>16</sup> "Governance remain(s) a challenge at the Higher Economics School. Its rector, Yaroslav Kuzminov, has been influenced or at least highly intrigued by the board-centered governance model at NES, but efforts to copy it at the Vyshka have not made deep progress. Kuzminov has also sought to imitate the strong research orientation of NES by awarding internal grants to faculty on a competitive basis, but the success of those efforts has been mixed". (Kotkin, p. 55). The statement on research is also supported by an interview of the author with the HSE rector, Vadim Radaev.

<sup>17</sup> Jan Svejnar an ex-Czech national, established CERGE-EI and directed it for a long time, and is still a member of its board. He is highly respected in his homeland; he was a candidate for president of the Czech Republic in 2008. George Soros, an exile from Hungary, established and financed CEU and Yehuda Elkana, a holocaust survivor from Hungary, served as its rector for many years, and a number of exiles of various universities joined as faculty and staff.

One outcome of the Prague model is that nearly 80 percent of their PhD graduates stay in the region. At the CEU there is a higher proportion of graduates who leave to the West. Both faculties are well connected with the Western economics community, indeed they are part of it. The publication record in the West of the faculty at CERGE-EI is somewhat better than that of NES, part of which is explained by its more senior academic profile. However, this is not the case with respect to CEU.

The models of CERGE-EI and CEU were feasible to a certain degree due to the much better "domestic conditions" (ala Kuznetsov) in the Czech Republic and Hungary as compared with Russia, and the much closer, natural, links with the West. These domestic conditions possibly also made the model more attractive. Russia, given that it is more isolated from the Global community, again, to some extent due to the quite different "domestic conditions" can use to a much larger extent a strong and active diaspora that will help to create the link and network between Russia and the Global research and business communities. At the same time Russia can also better use such links to the West as it already has a potentially strong research infrastructure that can vastly improve through opening up to the Global community. It may sound a bit strange (and see the statement of Ellerman in fn 14 above), but the in the case of Russia, if a brain drain flow and a creation of a diaspora wouldn't take place by themselves, one would have to encourage or invent it. A strong scientific diaspora is badly needed and it has a great promise to help pull up Russia's great scientific and innovation potential (that doesn't exist in many developing countries), and help restructure it toward the goals of the transition and for modern economic growth. NES provided Russia with a pioneering experience on how to do it in economics. We are still waiting for Russia to live up to this challenge.

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