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Fostering the Development of Innovative SMEs

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1/ Role of SMEs in economic development and competitiveness

1.1 Role of SMEs in economic development

Russia's economy has gone through a process of deep transformation in the last fifteen years. Its first stage lied mainly on the development of market institutions and the progressive dissemination of market rules. Despite some drawbacks and failures, it can be considered as largely achieved now. However, there is currently another huge challenge: the inscription of Russian economy into the World economy. Despite its huge natural resources and a rather large domestic market, it would be a harmful mistake for Russian policy makers to consider that they can avoid participating *actively* in the current process of globalization.

Of course, this participation is, to some extent, unavoidable and it is indeed already taking place. The distinction is, however, between an *active* and a *passive* participation to the global economy. A *passive* one is merely what we see now: Russia enjoys a rather comfortable trade surplus and, therefore, strong external accounts, but it is almost entirely due to high international commodity price. The level of exports in value is largely dependent to external factors, on which Russia has only a very limited power of influence, while the level of imports keeps on growing due to a higher demand for imported products than for domestic ones. At the same time, Russian big firms have only a very limited international presence and they are all, without exception at the moment, concentrated in the natural resources sectors.

On the contrary, an *active* participation into the global economy goes through a diversification of the economic activity which will make possible a diversification of the trade balance, especially on the export side, and a much lower dependence towards the extracting sectors.

Being *global* means, first of all, being *competitive*. While still being a much debated and rather "soft" concept, competitiveness has progressively imposed itself at the core of economic programs and decisions taken by economic policy-makers (Walter 2005). The problem is all the more acute in Russia where the trap of the rent economy is probably now a more obvious reality than ever before (Cordonnier, 2005). High international commodity price acts as a *placebo* hiding the major weaknesses of Russia's economy and making less urgent the need for structural reforms. The brighter the illusion, the stronger the disappointment when the bubble bursts.

Obviously, Russia's economy appears in a much stronger shape than before the 1998 crisis. And not only because of high oil prices, but because the structural reforms adopted and implemented in the last fifteen years have surely started to play a role and because the fall of the industrial production has been reversed. GDP is growing again, it is an undeniable fact, and it is not only because Russia produces and sells more natural resources. However, it is far from being sufficient in order to be an active part of the global economy and not a shaky supplier of natural resources for other much wealthier and more dynamic economies.

In that sense, there is no key receipt to improve competitiveness of a national economy. However, there are some well-known elements that have proven to play a key role to support the process. In particular, wave of recent theoretical research and empirical studies point to the key input of innovation and the role of small and medium firms (SMEs) in boosting economic development. Convincing contributions to the analysis of the role of SMEs can be found in particular in a whole range of studies published by the international financial institutions such as the United Nations Conference on Trade and Development (UNCTAD), the Organization for Economic Cooperation and Development (OECD) or the World Bank. It is also a particular topic of attention in the European Union (EU) and in most of national economies.

Some of the conclusions of large-scale surveys and observations can be recalled here. Firstly, it is estimated that **SMEs account for more than 90% of all enterprises in activity in the vast majority of countries and provide the majority of jobs.** Moreover, because of their dynamism and flexibility, they are crucial for the creation of jobs and, in a lot of countries, they are in fact practically the only source of new jobs. It is the case in developed countries, where big firms tend to downsize and delocalize their labor force, as well as in emerging countries (OECD 1997, Beck, Demirguc-Kunt, Levine 2005).

Secondly, **some key elements are necessary to foster the development of dynamic and fast growing SMEs.** They can be broadly defined like this:

- A favorable tax environment;
- A sound and stable macroeconomic environment;
- A favorable legal environment based on a strict application of the rule of law and right of contracts;
- Large and easy access to financing;
- Few bureaucratic interference allowing easy entry and exit in the market.

Thirdly, one of the main difficulties in dealing with the notion of SMEs is that it is a **very heterogeneous** one. At first glance, the only common factor is a limited number of workers employed in the firm, which can vary from one person (individual entrepreneurs) to a few hundreds. The type of activity, of branch, the turnover, etc. can considerably vary. SMEs actually cover almost all types of activities, apart from the very high capitalistic or labor intensive ones, which remain the monopoly of big firms.

Despite these difficulties, there were several attempts to define more precisely the notion of SMEs. In this report, we will take into account the one given by the European Commission and

which is now used by all European Countries. This definition was adopted through the Commission Recommendation of April 3rd, 1996 in order to provide a clear global framework for all the measures directed towards micro-, small and medium-sized enterprises. It is the following:

Criteria	Micro Enterprises	Small-Sized Enterprises	Medium-Sized Enterprises
Max. Number of Employees	<10	<50	<250
Max. Turnover (Mio Euros)	-	7	40
Max. Balance Sheet (Mio Euros)	-	5	27

Source: European Commission

To be classed as an SME or a micro-enterprise, an enterprise has to satisfy the criteria for the number of employees and one of the two financial criteria, i.e. either the turnover total or the balance sheet total. In addition, it must be independent, which means less than 25% owned by one enterprise (or jointly by several enterprises) falling outside the definition of an SME or a micro-enterprise, whichever may apply. The thresholds for the turnover and the balance sheet total are adjusted regularly, to take account of changing economic circumstances in Europe (normally every four years).

This global definition of SMEs has however a purely functional character. It does not help to better understand the link between SMEs, economic development and competitiveness. Actually, and this is our fourth point, the key question for Russia is not only to promote the development of SMEs *per se*. There is no obvious proven link, nor in the economic theory, neither in empirical studies, between the development of SMEs, strengthening of competitiveness and economic growth (Warner, 2001). There are useful examples, but it appears that a lot of factors play a role. In that sense, the key lies not only in the development of SMEs, but in the one of

competitive SMEs, which leads back to the problem of the link between competitiveness, innovation and economic growth.

1.2/ Role of SMEs in innovation and the knowledge economy

Enhancing global competitiveness has become a crucial goal of economic policy. In that sense, the experience of industrialized countries as well as successful emerging economies shows that promoting knowledge and innovation processes are keys to overall economic development. In a liberalizing and globalizing World economy, firms operate in markets which demand more and more innovation and flexibility. Furthermore, production involves an increasing number of knowledge-intensive activities. The new paradigm of production (Blandinieres, 2005) implies that product design, marketing strategies, quality control, process engineering, new management techniques and routines become key factors in all kind of sectors and branches.

Empirical evidence also shows that SMEs have a major role to play in this process which enhances the role of continuous improvement in product, process, technology and organization. They are not only providers of traditional services or subcontractors for big firms anymore. They have become one of the cornerstones of this new global economy based on the ever increasing importance of innovation (OECD, 2001).

Speaking very globally, there are two kinds of SMEs regarding the approach to innovation and knowledge: the ones that create innovation and the ones that use it. The first category is obviously a very little minority while the second represents the overwhelming majority. However, there is not any firm, be it of the smaller size and engaged in the most simple activities, that can not take profit from technological progress and innovation. In that sense, and apart from the access to financing, access to new technologies represents a key factor for the

competitiveness of SMEs. They are necessary for them to adapt to the requirements of global markets, to lower their costs of production and to generate strong growth. While the problem of financing will be discussed below, it is important to define more precisely the link between knowledge and SMEs as it is far from being static and well-fixed.

Traditionally in the economic theory, technology was considered to be an external factor, one of which can be acquired merely as a package in the marketplace. In other words, knowledge was considered as a concrete tangible asset that could be acquired with a cost and used as other production factors. However, empirical evidence and new theoretical studies have proven that it is actually always associated with tacit knowledge implying a cumulative process of learning (Stiglitz 1998-1999, Romer 1990). Obviously, there is a significant difference between SMEs that need to acquire new technologies and SMEs that master these new technologies. But they have something in common: they both need access to innovative products in order to foster their competitiveness.

As we will concentrate on innovative SMEs, i.e. on SMEs engaged in activities in which innovation and new idea generation and applications are keys to a successful development, the first task is to define the relationship between small and medium firms, and innovation and the knowledge economy. Following the comprehensive studies on small firms made by the European Commission (European Commission 1998) and the OECD (OECD, 1997), SMEs can be segmented into three main groups:

1. **Technology developers.** They usually do not represent more than 1 or 2% of the total SMEs population. However, they play a leading role in supporting the development of other SMEs by purveying them with innovative products and processes;

2. **Leading technology users.** They can make up to 15% of the SMEs population in developed countries. They do not generate innovation themselves, but the core of their activity relies on an efficient use of innovation in their production process;
3. **Technology followers.** It is the overwhelming category of SMEs. Their activity is not strictly linked to the creation of new technology, but it relies to a more or less important extent to an effective use of it.

1.3/ SMEs in Russia

1.3.1/ Overall situation

Because they provide new jobs, more flexibility and play a significant role in the dynamism of growth, SMEs are now at the center of attention of policy makers. It is also more and more the case in Russia¹. However, there is still much confusion around the notion itself. A lot of discussions on SMEs concentrate only on the “S”, i.e. on *small* enterprises, namely on individual entrepreneurs. Small firms are considered only through the angle of their size and their role in providing jobs, not really through their economic specificity and their strong role in the innovation process.

Secondly, Russia’s economy is still largely dominated by big firms for two obvious reasons. The first is linked to the heritage of the soviet economic system which promoted the building of big, sometimes huge, industrial units and, at the same time, reduced entrepreneurship to a non-existent level, at least officially. The second reason is the abundance of natural resources, which

¹ It is, for example, a recurrent topic in the President’s annual address to the Parliament

led to the formation of a rent economy based on extracting sectors, which are, by essence, dominated by big firms (Cordonnier 2005).

As the topic of SMEs development is the object of a rather new interest in Russia, much has still to be discovered. First of all, it concerns the current situation. What are the Russian small and medium firms? How do they work? As every policy has to define precisely the object it aims to influence, the first step for any policy promoting the development of SMEs is to define the target.

One of the most comprehensive surveys on Russian SMEs up to now has been conducted by VTsIOM², together with OPORA³. Its results were published in March 2005 and they help to have a clearer picture of SMEs, of their common features, problems and perspectives of development⁴. Overall, their number in Russia has not really grown since the mid-1990s and the 900,000 SMEs that exist generate only about 12% of GDP. The vast majority of Russian SMEs are very small firms, often individual entrepreneurs (registered as “Pboiul”) engaged mostly in trade, construction or services. Even a quick observation leads to an obvious conclusion: the specificity of Russia is the quasi-absence of small and medium firms specialized in technology intensive activities and innovation.

1.3.2/ Innovative SMEs in Russia

The assumption that knowledge and innovation are essential to the development of competitive SMEs is now rather well diffused in the OECD countries, but it is still a much neglected factor in

² VTsIOM is the Russian abbreviation for *All Russian Public Opinion Research Center*. It is the leading Russian polling agency.

³ OPORA is the abbreviation for “Общероссийская общественная организация малого и среднего предпринимательства”, or Russian Small and Medium Entrepreneurial Organization's Union. It is the main lobby for small and medium businesses in Russia at the time.

⁴ On the results of the study, see Expert n° 28, 25-31 July, 2005.

emerging countries. To some extent, the same could be said about Russia. The importance of high-tech and innovation is more and more stressed by the authorities. They are conscious that a sustainable economic growth, necessary for the reduction of the wealth gap with Western countries, is not possible without being an active part, not only of the “global economy”, but of the “global *knowledge* economy”, which has emerged in the last decades of the 20th century.

At the same time, the importance of small and medium enterprises is also frequently stressed. The failing link appears precisely in the connection between the two dimensions. As noted above, this appears rather understandable as economic literature and large-scale surveys also still fail to find this clear link.

As it is almost a non-existing sector, there are still very few studies on innovative small and medium firms in Russia. The topic is evoked either in surveys on small firms, or in papers on the more global problem of innovation (Barjanova 2004, Dejina 2004). One of the sources available is a recent study published in the review “Studies on Russian Economic Development” (Dejina, Saltikov, 2005). In addition to official statistics, the authors based their analysis on a sample of innovative small firms selected among the winners of the *Russian Innovations Contest*, held since 2001 by Expert magazine, with the support of the Russian Ministry of Science and the Russian Ministry of Atomic Power.

Some conclusions of the most recent analyses can be recalled here:

- the number of small innovative firms has constantly been decreasing in the last years. It amounted officially to 48,800 in 1995, 30,900 in 2000 and 22,700 in 2002. Experts consider that this number is probably higher in reality, but it does not change the tendency: there are less and less innovative small firms in Russia;

- the majority of successful small innovative firms have sprung from parent State Research & Development organizations, but almost half of them are operating independently. Other ways of forming small firms are rather marginal : alliances between a scientist and a businessperson account for 17% of cases, firms set up by individuals with no relation to their last employment for 11% only;
- Almost 94% of companies operate in the domestic market, 44% both in the domestic and foreign markets, and 6% only with foreign customers;

In their article, Deжина, Saltikov give the “portrait” of a typically successful Russian innovative SME:

- they usually have grown out of laboratories/departments of research institutes or universities;
- they are essentially targeted at the domestic market. Very few manage to come progressively to foreign markets, mainly because, in a number of sectors, the domestic demand is large enough (in the oil and gas sector, for example);
- their success much depends on the presence of a “leader”—a scientist with managerial skills, or an alliance between a scientist and a businessman;
- they usually begin by manufacturing separate parts (components and accessories) and then move to the manufacture of complete products;
- they grow by establishing auxiliary services (marketing and maintenance), their own production facilities, and personnel training systems. Outsourcing usually begins when small firms become medium-sized ones;
- permanent study of foreign experience in the management, marketing, pricing policy, and client service fields is a crucial feature;
- they put in place very flexible price strategies and forms of marketing (varying the price depending on the product’s further “tie-in” to component parts, performing first contracts

at half price, or offering products for free for the purposes of advertising and attracting customers);

- property issues are always serious problems that need to be resolved sooner or later by the buying out of rented premises.

This “portrait” needs to be generalized in order to better understand the features of successful innovative SMEs.

2/ Strategy: which are the efficient SMEs?

In order to be competitive, SMEs can follow various strategies, which are more or less determined by their economic environment and their sector of activity. A survey of the most recent studies on the subject leads to define five types of strategies allowing SMEs to foster their competitiveness and register dynamic growth.

2.1/ The innovation strategy

The economic theory does not give much room for small firms to be engines of new idea generation or innovative activity. This is merely linked to the definition and the essence of knowledge and innovation as regards to the economic activity. As a matter of fact, as knowledge is a highly risky activity, with uncertain return, small firms do not have the same interest and capacity to promote it than big firms. In that sense, empirical evidence confirms to a great extent theoretical thinking.

The best way to measure the innovative activity and capacity of firms is through the evaluation of its research and development activity (R&D), as this is the most important concrete source of

innovation and knowledge. All the studies made in the recent years converge to the conclusion that the countries with the highest R&D expenditures are the most innovative ones⁵. This is also true, to a large extent, at the branch level: the most innovative industries are also the ones that spend the most money in R&D (Audretsch, 1995). However, the breakdown of the knowledge production function at the level of the firm does not give such an evidence. It is particularly true when it comes to small firms: they can show a rather high innovative activity and new idea generation with rather insignificant amounts of money spent in R&D.

The question for innovative SMEs is therefore the following one: where do innovative firms with little or no R&D expenditures get the knowledge inputs? It is particularly crucial at the stage of creation of SMEs, which is usually characterized by limited access to financing and, as a consequence, impossibility to foster own R&D research. It means that R&D inputs can only come from external sources which can be third-party firms or research institutions. Economic literature has identified two main ways by which spillover channels can be formed: the development of a special capacity by SMEs to adapt new technology and idea and to appropriate external knowledge properly (Levinthal 1989), or the individual capacity of entrepreneurs to adapt commercially the knowledge developed in third-party structures, or, in other words, the capacity of scientists or engineers to become individual entrepreneurs (Audretsch 1995). This helps to understand why this category of SMEs is rather limited. The experience of industrialized countries also shows a high rate of mortality among this category of SMEs, as it appears very difficult for new entrants to attain the level of output scales that guarantee profitability.

This category of innovative SMEs appears however as a particularly valuable one in the case of Russia. Surveys usually show that the lack of resources is the main impediment to the creation and development of small firms. In that particular category, the key is not finance, but the

⁵ A common way to evaluate it is, for example, through the number of patents.

capacity to adapt or use properly innovation, which has usually been developed elsewhere. Despite the crisis of the 1990s and the much debated lowering of standards compared to the Soviet period, the Russian Federation remains a first-rank provider of scientific activity. There are still currently 4,000 organizations conducting R&D. According to the OECD, there were about 490,000 researchers at end-2003, which places the Russian Federation at the 4th rank in the world by this indicator after the US, the UK and China.

However, the Russian National Innovation System, largely inherited from the Soviet Union shows some specific features (Dejina, Saltikov 2005):

- A completely centralized and State-command system;
- Absolute priority given to the military-industrial complex;
- Large, sometimes huge research and design organizations accounting thousands to several thousands employees;
- Absence of private ownership of intellectual property rights, which hampered individual initiatives in the field of innovation.

Modern market-types national innovation systems are obviously based on different fundamentals:

- Private ownership of property rights, which allows to take economic benefits from innovation activities;
- Definition of the State as an economic agent equal to the other ones; it can bring legal, financial or fiscal support for innovation, but it is not the only regulator and purchaser of innovation;
- Openness of the economy and construction of links with the global economy.

In that sense, efforts should be concentrated towards building the links and institutions enabling spillovers from scientific activities, still concentrated in institutes and universities with constant problems of financing, and the private sector. While the strength of the most dynamic systems lies on close ties between universities, research centers and firms, those are still largely separate worlds in Russia.

2.2/ The technology adapter strategy.

Another way small firms are able to improve their competitiveness is through the adoption and good application of new ideas or technologies as a way to reduce their costs or improve their productivity. In that category, SMEs are not themselves at the origin of the innovative activity or of the commercial application of innovations, but they show a great capacity to use it. The most common example in recent economic history is the use of information technologies (IT) and the microprocessor. The key point here is that the effect of the use of new technologies usually gives much faster results in small firms than in big ones.

This is mainly because new technologies have helped to *redefine completely the notion of economies of scale*. Their use makes it possible even for smaller firms to engage in a whole range of technology-intensive activities which were traditionally reserved to big firms. This fact was at the core of the movement of de-integration and subcontracting engaged in the last decades of the last century in industrialized countries: big firms preferred to outsource a lot of their activities, from the production of spare parts to legal or financial activities (factoring; etc.) to smaller firms whose capacity was strengthened by the use of new technologies.

This movement has still largely to take place in Russia. It is a well-know fact that it inherited from the Soviet Union industrial structure huge conglomerates strongly integrated horizontally as

well as vertically. There was virtually no tissue of small firms engaged in subcontracting and the traditional industrial groups remain very integrated, even in the contemporary Russia. The example of the most developed industrial regions and countries show however that this structural shift towards outsourcing is a major component of economic development. Many of the sectors that have typically gone through this process are present in Russia, from the extracting ones to the automobile sector or military-industrial ones. In addition, foreign direct investors should help to boost the creation of small and medium-size subcontracting companies, based on their experience in their own countries. Economic incentives are there, but administrative and transaction costs remain a strong obstacle, together with the still insufficient protection of the rights of contracts, which is a key element for the development of outsourcing and subcontracting

2.3/ The niche strategy.

A more traditional way for small firms to be competitive consists in pursuing a strategy of specialization in some markets or branches, be it in the knowledge economy or in more traditional industries or services. However, traditional very specialized niche activities rarely allow small firms or individual entrepreneurs to grow after a certain level of output. This is why the key for the development of small firms pursuing niche activities lies on their *capacity to create new markets*. Their sphere of activity goes from high-tech (processing computers, satellite receivers, etc) to services (consulting, legal advice,...), industry (equipment for specific industries) or agriculture (high quality products especially).

The German SME sector offers a good example of this niche strategy combining product specialization with geographic diversification. Small and medium enterprises account for more than 70% of global German market shares. While big firms usually tend to promote product diversification to better balance their risk strategy, small firms do not have the capacity to do

that. In order to improve their productivity and reach better economies of scale, they therefore show a strong commitment to global expansion. This might seem rather paradoxical for small firms to promote large investments abroad, while their size could seem to be just enough for the domestic market. But it is key to successful niche strategies.

Apart from geographic diversification and strong specialization, another feature appears fundamental: the capacity to fit as close as possible the needs of the customers. As small firms do not have the marketing capacities of bigger ones, they tend not to adopt a mass strategy. Instead, successful SMEs offer various services that go far beyond the sale of a product. Good examples are small and medium-size firms selling electronic components or machine tools for the manufacturing industry. As the complexity of product increases, customers are in need of more instruction and training. This appears as a key of the commercial success of most of the SMEs in Germany (Sternberg 1990, Simon 1992).

It is enough to look at the breakdown of Russian exports to understand that this type of specialized SMEs concentrating on the research of new markets are more than a rarity in Russia. With more than 85% of exports made of commodities and a significant part of the rest being the output of big firms (equipment goods exported in the CIS for example), figures show that there is virtually no exporting SME sector in Russia. Obviously, the presence of a large domestic market makes it less imperative for new Russian small firms to concentrate on the research of external markets. In the first stage of their development and specialization, they can rely on large enough domestic demand and on an import substitution strategy. However, a real strengthening of the SMEs in Russia will only be possible when some firms will emerge as global players, which means particular attention to their export capacity.

2.4/ The human skills strategy.

As noted above, one of the most common way for SMEs to incorporate innovation and to take use of technological progress is linked to the human factor, i.e. to the capacity and will of individual workers, scientists or engineers, who decide to start a new company because they consider that their contribution to the innovative process is not well enough considered in a bigger structure. This fact points to a crucial factor in the emergence and success of small and medium firms: the human factor, or more precisely, what we call the “human skills” factor.

It relies actually on two dimensions: scientific culture and entrepreneurial spirit. In its turn, the formation and development of these two dimensions are closely linked to the existence of particular conditions and institutions. Firstly, there must be a strong and efficient educational system that helps to bring high-level graduates on the labor market. Secondly, there must be an efficient network of scientific institutions, research centers and universities that promotes the formation of a dynamic and constantly-learning class of scientists and engineers. Thirdly, there must be favorable market institutions, which allow easy entry and exit, limit bureaucratic interference and support individual initiative. Finally, there must exist incentives for the creation of small firms, be it financial (grants, easy access to credits, special financial institutions devoted to the creation of start-ups,...) or institutional (possibility for scientists to create firms without losing their status, existence of strong networks and clusters facilitating the bridge between research activities and private entrepreneurship,...).

In that sense, the situation in Russia could be summed up as following: the human skills factor exists and appears rather strong, but institutions allowing its use as a factor of economic development are still lacking. There are no real links between research work and the private sector, administrative burden is still very high and entrepreneurial spirit is often not considered as compatible with scientific activity. This "Berlin wall" between research activities and

economic ones is certainly one of the main factors impeding the development of a dynamic and innovative SME sector;

2.5/ The network and cluster strategy.

Strictly speaking, networking and clustering refer to two different concepts. The first is usually used to describe formal and informal cooperation of various natures (knowledge exchange, commercial relationships, competition relationships, lobbying activities, etc.) between firms. The second directly comes from business literature⁶ and refers to a precise spatial dimension. It corresponds to a pool of firms located in geographical proximity to each other, not necessary engaged in the same kind of activities, but which are able to take profit from spillovers and linkages offered by their proximity (Porter 1990).

As SMEs often lack resources for their development, clusters and networks are of particular importance for them. They can ease the access to skilled and educated labor, to a pool of business services and significantly lower the transaction and information costs that very often impedes the development of small firms.

We can distinguish between five kinds of clusters:

- **Informal.** They are the result of a spontaneous agglomeration of firms in a limited territory without support from the State or other economic agents (big firms, local authorities for example). It is the most common form of clusters in developing countries. Also, it is almost always constituted exclusively of small firms. They are usually characterized by a low level of coordination and networking among firms, little

⁶ Porter &&

information dissemination and a lack of spillover between firms. They offer the minimum level of common infrastructure and have only the advantage of proximity to promote the access to new technologies and innovation. However, they constitute a good basis for further potential dynamic growth, if a form of organization is to appear.

- **Organized.** Whether organized from-the-ground or from existing informal ones, organized clusters have gone through a process of collective structuring, sometimes supported by the State, sometimes resulting from the initiative of firms only. This means more cooperation and networking between firms. It also means higher spillover and growth potential, resulting in the building of already medium to large size enterprises (from 200 to 1000 employees) among other smaller firms. Firms cooperate not only to improve information, infrastructure and market support, but also usually they begin to compete "as a group" against outside competitors, and not only as single firms.
- **Innovative.** While the two first forms of clustering can unite firms in all sectors of the economy, innovative ones tend to be centered on knowledge-intensive activities.
- **Technology parks and incubators.** Being centered on technology-intensive activities as well, technology parks and incubators are usually completely designed and supported by State programs. As a consequence, they usually lack the "spontaneous" dimension of agglomeration of more informal innovative clusters. Empirical evidence shows that they usually fail to create effective mechanisms to stimulate networking among firms artificially clustered. Apart from being expensive creations for the State finance, they are therefore criticized for their relatively weak effect on local economy (Baillat 1996);
- **Special export zones.** It is another form of government-created and government-supported clustering. They are usually aimed at attracting foreign investors delocalizing their production and selling it abroad afterwards. They can therefore have some positive effect on local employment and firm creation, but they usually *show very little potential to establish positive links with the local economy*. Moreover, they can be used by

traditional investors to lower their tax expenditures and, therefore, significantly harm the situation of the State budget.

The importance of geography in fostering competitiveness of firms has been a heated topic of debate lately. State policies to promote competitiveness are more and more openly devoted to the importance of territorial competitiveness (Sepic, 2005), but there is still no clear consensus about how the economic structures within a geographic unit influence competitiveness and economic growth.

This debate can be summed up around two main topics: diversity or specialization and local monopoly or local competition.

- **Diversity versus specialization.** In the economic theory, the Marshall-Arrow-Romer model suggests that a high degree of specialization in a particular geographic region allows a quicker and more effective diffusion of knowledge and facilitates innovation spillovers across firms. This is explained, in the model, because of a lowering of transaction and communication costs, as individuals and firms are more or less engaged in similar activities. However, it is linked to the assumption that knowledge spillovers are only possible and effective within a particular industry. This assumption was since then criticized (Jacobs 1969), who argues that firms usually make the better use of knowledge spillovers and innovative activity that are actually not in the industry in which they are active. This theory leads to the exact opposite conclusions to the Marshall-Arrow-Romer model: a geographic region with a great variety of industries leads to a higher competitiveness than a very specialized region, because knowledge spillovers are better spread across firms;

- **Local monopolies versus local competition.** In the wake of its conclusions about knowledge spillovers within a specific industry, the Marshall-Arrow-Romer model leads to another noticeable remark: as investments in R&D are high and their return difficult to estimate, firms have a greater chance to improve it and appropriate economic value if they do not fear to get their innovative activity “stolen” or just utilized by competitors at a zero cost. In that sense, firms have more incentive to innovate if they are in a situation of monopoly. However, this assumption has seldom been confirmed by empirical studies. On the contrary, the most comprehensive studies (Glaeser 1992 on growth rates in US cities from 1956 to 1987, Audretsch 1999) tend to show that the more diversified a region is, the better its industries have chances to take profit from complementarity and innovation spillovers in order to improve economic performance.

An alternative system of industrial organization, between monopoly and competition, between specialization and diversification is to be found in what the OECD calls “flexible specialization”. In the Conference for Ministers responsible for SMEs and Industry Ministers organized in Bologna in 2000 (OECD 2001), it defines flexible production systems as having five characteristics:

- **Reliance upon multi-purpose equipment.** Equipment that allows a highly diversified use can help firms to adapt more rapidly to the needs of the customers by changing the characteristics of their product. Considering the importance for successful SMEs of marketing and the capacity to fit the needs of the customers, this availability of multi-purpose equipment is a strong prerequisite to foster competitiveness;
- **Continual innovation.** This factor is linked to the latter one. SMEs place innovation as a first-rank priority, not only for the nature of the product, but also for processes, organization of production and sales;

- **Clustering.** The OECD states that “*Groups of enterprises working in the same product are seedbeds for the exchange of new ideas. Physical proximity facilitates the transmission of knowledge and also enhances the development of institutions that enhance effectiveness.*” (OECD, 2001);
- **Networking.** The capacity of small firms to organize networks of clients (noticeably by subcontracting), distributors and suppliers help to lower transaction costs and mitigate the risk linked to the essence of the innovative process;
- **Spillover effects.** It is the way by which the industrial structure of a specific geographic area can help the diffusion of factors of competitiveness between firms.

A good example of the effectiveness of flexible production systems is the Northern region of Italy, Emil Roaming. While not specialized in high-tech as the Silicon Valley, it offers the picture of a mixed agricultural-industrial region, where producers engaged in similar or complementary activities agglomerate with a high degree of labor flexibility that allow workers to perform a wide range of tasks⁷ (Beccatini 1990). This example shows how it is important to distinguish between big firms and SMEs. With subcontracting and inter-firm cooperation, big companies fear higher transactions costs, the impossibility to control quality for the whole process and, sometimes, industrial spying. On the contrary, SMEs get much more benefits than threats through this process.

It might seem paradoxical at first glance, that proximity of competitive and complementary enterprises matters in a world where the Internet, new and ever cheaper means of communications and cyber technologies play an increasing role. Once again, this is linked to the intrinsic nature of knowledge, the key to SMEs competitiveness.

⁷ “It is not solely the technical superiority of these firms that makes firms in Italian networks so successful, but the importance of links between firms and individuals. The interaction between customers, manufacturers, and capital good suppliers in Italy has created an environment that pushes innovation forward” (OECD 2001).

Knowledge is hard to codify, sometimes hard to understand and evaluate, hard to transmit and usually hard to use properly and quickly in the production process (Stiglitz 1998). It is not information, which is easy to codify, to transmit and to use. Knowledge is the Internet technology; information is what is codified through Internet. Information is the evolution of exchange rates or interest rates; knowledge is the process that allows firms to adapt their strategy by using new financial instruments to balance their currency and interest risks. Knowledge is also much more difficult to generate than information. This is precisely why clusters play a fundamental role in the modern economy devoted to the strengthening of competitiveness at all levels. Clustering is the spatial dimension that matters in producing competitiveness.

In the wake of Porter's works, recent literature on the subject shows the importance of face-to-face interactions and frequent and repeated contacts for the transmission of uncertain knowledge (Von Hippel 1994), the geographical constrain to the limit of knowledge spillovers and tacit innovation diffusion. Audretsch, Feldman 1996 show that the more innovative firms are, the more they tend to cluster geographically in order to be more competitive. Jaffe, Trajtenberg, Henderson 1993 show that the patent citation is traditionally much higher in the geographical area (the regional State in the USA in the case of their study) where the patent was issued. OECD 2000 shows the importance of the phenomenon for small and medium-size firms by using the example of North Italy.

The development of clusters is still at a very early stage in Russia, especially for small and medium firms. International experience shows that, albeit having an important role as a coordinator or a participant, the State very rarely succeeds in creating dynamic and efficient SME clusters from-the-ground. It is all the more true when considering the global problems of public governance in Russia. Instead of creating artificially, expensive and often not efficient technology parks, incubators or innovation centers, the government should therefore concentrate

on building the mechanisms helping the spontaneous networks and clusters to facilitate their development into real, organized ones.

3/ The financing of innovative SMEs

3.1/ Problems associated with financing SMEs

In the OPORA-VTsIOM study, access to financing is cited as the main impediment to the activity of SMEs. In that sense, there is actually no specificity of SMEs in Russia compared to the rest of the World. As a matter of fact, financing is usually one of the key problems for the development of SMEs in any country. Traditional sources of financing, i.e. commercial banks and investors in capital markets, are reluctant to service SMEs for a number of well-known reasons:

- SMEs have usually few assets and are lowly capitalized, which means that they have a **low level of solvability**;
- The high flexibility associated with SMEs has a reverse coin; it means easy entry, but also frequent exit. **The rate of mortality of SMEs is very high**, meaning more risks for the investors;
- SMEs are more exposed to market fluctuations and to a deterioration of the macroeconomic environment. It is therefore riskier to invest even in a good project when there is a risk of deterioration of the overall situation;
- **Information asymmetry** is much more common with SMEs. Financial statements and accounting records are often incomplete or inadequate, business plans are lowly detailed as SMEs are often engaged in risky and difficult to forecast activities. Their creditworthiness is therefore uneasy to assess for creditors;

- SMEs are commonly in need of limited amounts of financing. It means high **administrative and transaction costs**. It is especially the case for traditional creditors such as commercial banks, which have to engage high costs to study proposals for a limited expected return.

All these well-known problems are even more acute in Russia. Information asymmetry is general and the opacity of financial statements is well known. Commercial banks have a clientele of big firms, mainly exporters of natural resources, easier to service and with much lesser risk associated. Alternative, more sophisticated instruments of financing, are still virtually non-existent because of the overall weakness and narrowness of the financial system.

The financing of SMEs remains therefore an embryonic market segment. It is even a much greater problem when it comes to financing research and development or technology access for SMEs. Adding to traditional problems listed above, a number of other problems arise when it comes to this particular category of SMEs:

- The success of innovative SMEs is linked to **non tangible factors** like scientific knowledge, intellectual property, economic application of innovative ideas. They are almost impossible to value properly and makes it even more difficult to assess the quality of a project;
- Relying mainly on human skills factor, innovative SMEs do not have tangible valuable assets to offer as **collateral** to investors;
- Innovation means new, untested products, with a **high percentage of failures**.

3.2/ Commercial bank lending

3.2.1/ Perspectives in Russia

Notwithstanding the exponential development of capital markets and the ever increasing globalization and sophistication of finance, commercial banks remain a leading source of financing in developed as well as in emerging countries. Also, even if it implies high administrative and transaction costs and often high risks, they have a significant role to play in the financing of SMEs and, especially, of innovative ones.

Despite difficulties and obstacles associated, bank loans are and should remain the main instrument of financing for Russian SMEs in the coming period, as shows a recent survey on this topic (Barre 2005). A whole range of factors converge in this direction:

- After the 1998 financial crisis, Russian commercial banks have become the main vehicle of intermediation in the country. Their survival was possible only thanks to a radical reorientation of activity and restructurization of their balance sheets. They have now become credit institutions and their profitability is, above all, linked to their lending activity;
- The current structure of the banking sector should logically lead to a strengthening of the role of SMEs in the portfolios of Russian banks. There are slightly more than 1,200 banks in activity in Russia. About half of the total assets of the sector are concentrated in three State banks (Sberbank only has about a third of total banking assets). About thirty banks are subsidiaries of big foreign banks. Finally, about fifty to hundred institutions are big or relatively big (by Russian standards) private banks usually acting as financial departments of big financial and industrial groups. All the other establishments can envisage their survival only with the development of an efficient niche activity. And SMEs appear as a privileged niche for at least two reasons. The first is that they often do

not compete with big banks for this kind of clientele because of the low amounts of loans and the high administrative costs associated. The second is that there is only one bank that can pretend to possess a sufficient network to service clients all over the Russian territory- Sberbank. This leaves much room for regional banks to service local SMEs, taking into account that good risk management linked to servicing small firms implies a constant monitoring and close relations with the borrowers. Medium regional banks do not have the capitalization and the resources to service big industrial groups. But they have a chance to develop a local clientele that precisely does not interest big universal banks. The overall amount of loans to SMEs remains modest, but it is growing very fast (Barre 2005).

Despite these difficulties, a whole range of measures can be undertaken in order to increase commercial bank lending to SMEs.

3.2.2/ Instruments needed to improve bank lending to SMEs

Reducing information asymmetry and improving risk management are the first priority.

As a matter of fact, information asymmetry remains the main obstacle for commercial banks when they ought to finance small firms. The first problem is the lack of reliable financial information about SMEs. Even in highly developed countries with stable financial markets and largely disseminated use of transparent and comparable financial statements, SMEs do not reach a significant threshold in assets to produce standardized accounts. It is all the more true in Russia, where international accounting standards are still only partially used. It would therefore be useful to define a set of rules according to which SMEs could offer better financial information for banks. A good example is given by the Working Group of Experts on International Standards of Accounting and Reporting (ISAR). It includes user-friendliness,

flexibility to accommodate growth, standardized formats and adherence to generally accepted practice.

Another way of reducing information problems is the creation of credit scoring systems. It corresponds to an automated statistical method used to assess the risk of default of a credit applicant and can be defined as follows: "the method analyses a large sample of past borrowers to calculate the probability that a loan applicant with certain specific characteristics will default. The system derives a single quantitative measure -the score- from a large statistical sampling of past borrowers in order to predict the future payment performance of an individual loan applicant". This implies the use of latest information technologies and specialized staff training. Such procedures have been developed in the 1990s and are now used in the vast majority of developed countries (Jennings 2001). They also mean a different management culture inside banks towards less "case-by-case" approach. The main problem in Russia lies on the lack of credit history. It is therefore difficult for banks to define a sufficient sample that helps to put in place an automated system. However, technological transfer could be used to promote the progressive creation of credit scoring in the banks which already have a record of lending to SMEs.

Other ways of reducing information problems include:

- the use of external information providers (but it supposes the existence of a reliable network of rating agencies utilizing methods appropriated to the evaluation of the financial situation of SMEs);
- the dissemination of information to entrepreneurs about the risks that banks assume when they grant them credit in order to help them to better comply with the banks' needs and cooperate to find solutions,

- the introduction of methods based on evaluating the price of lending according to the level of risk (like the Risk Adjusted Return on Capital system in France) in order to avoid adverse selection,
- the sharing of risks with third parties, e.g. loan and mutual guarantee schemes with public institutions or private groupings of companies linked to sector-specific interest groups which provide loan insurance to banks,
- the use of covenants, i.e. of special clauses in debt agreements designed to protect the lender's interest (but it faces the still insufficient protection of contracts' rights in Russia).

Reducing the cost of lending by applying latest information technologies is another priority. The knowledge economy does not only help to improve SMEs competitiveness. It also helps banks to ameliorate the efficiency of their risk management, in particular concerning such risky borrowers as small firms. Surveys made by the European Commission shows that credit institutions which have introduced sound IT applications can significantly increase their loan portfolios towards SMEs and double their profitability compared to competitors (European Commission 1997). It also helps them to streamline and simplify their lending process and considerably reduce time and administrative burden associated with them;

Thirdly, it is possible to develop products better adapted to SMEs needs. Here again, some valuable examples can be found in international experiences:

- Participating to the provision of seed capital for start-ups. This form of financing includes various combined instruments such as equity, subordinated loans and soft loans. Traditionally, the main provider of seed capital is the State as it implies low return on investment, but commercial banks can find some interest in organizing such kind of schemes that help to share the risk while giving new investment opportunities;

- Training of bank staff specialized in the clientele of small firms. Experience shows that dealing with SMEs needs specific experience and training in order to be efficient. Special programmes could therefore be put in place in Russian banks in order to better service this clientele.

3.3/ Venture financing

Venture capital has become a key instrument for financing high-technology firms in developed countries. The best example is given by the United States, where it has been the main vehicle for promoting start-ups and new innovative companies, especially in the last decade of last century (Gordon 2002)⁸. Despite its success in the U.S., venture capital has not really spread across other economies. It is starting to play an increasingly important role in some Asian economies, including China, but such funding is still very limited in other parts of the world (Mayer, Schoors 2003).

The limited success of venture capital is certainly due to the high number of conditions necessary to its success. Obviously, some government measures are necessary to make it possible, such as tax incentives, loan and equity guarantees and, sometimes, direct loans and equity investment. In addition, a stable macroeconomic environment, strong rule of law and respect for contracts, sound financial system and corporate governance practices are necessary. However, they can only help to make venture capital funding possible, not to make it effective.

To be effective, venture capital also needs to combine all the following factors:

⁸ To give an example, the National Venture Capital Association (NVCA) estimates that this form of funding has increased from USD20 billion to USD100 billion in only two years, from 1998 to 2000.

- **Strong individual entrepreneurial spirit** that leads to a constant and high number of new projects. Being a highly risky activity, venture capital can only be profitable if it has a regular flow of projects to finance. One of the leading professionals of the venture business perfectly summed up this pre-condition: “*Venture financing – it is when you invest in ten companies, half of them go bankrupt, in three of them you get your investment back, one of them shows a ten-fold growth and another one shows a hundred-fold growth.*”⁹;
- **Readiness on the side of individual entrepreneurs to open their capital**, i.e. to sell significant equity to outsiders, to be acquired, in part or completely, according to market rules;
- Following the latter condition, there must be a **market for firms** in order to guarantee a high level of flexibility;
- **Flexibility and availability of well-trained specialists** in the labor market;
- **Strong analyst skills on the side of venture capital specialists**, in order not only to better monitor the risk, but to assist and advise growing firms as well.

Without all these factors, the formation of a viable venture capital industry is hardly possible. The examples of Taiwan and South Korea helps to illustrate this observation. A strong and efficient venture capital industry has developed in Taiwan in the 1990s, even managing to build strong cooperation and spillovers with the American one and, endly, helping to form a dynamic and strong sector of high technology small and medium firms. At the same time, despite strong government support and the creation of a lot of incentives, it has largely failed in South Korea, mainly because of the lack of good projects.

⁹ Expert n°28 (475) – july 2005 – pp. 52-53.

Following this, it appears that a number of conditions are not completely met at the moment for venture capital funding to develop significantly in Russia:

- A still insufficient legal framework.
- A too fragile and narrow financial system.
- Insufficient rule of law and protection of contracts.
- Insufficient State support. Venture capital industry has not been successful in any country without a significant support of the State. In particular, the initial phase of development usually goes with the creation of a State agency that supplies resources together with private investors. The best example is the Small Business Investment Act of 1958 in the United States which enabled individuals to create Small Business Investment Corporations (SBICs) and to receive up to USD300,000 of Small Business Administration guaranteed money for an investment of USD150,000. Other forms of support range from significant tax exemptions¹⁰ to specific programs aimed at supporting the industry;
- Scarcity of market-built institutions facilitating the venture capital business. To be successful, venture capital industry needs not only a sound macroeconomic and legal environment, support from the State and dynamic individual entrepreneurship. It also needs organizations and institutions. This goes from clusters or networks where small firms and investors can work in close collaboration, to professional organizations representative of the main actors of the business.

3.4/ Complements to finance

¹⁰ In its study of venture capital industry in Taiwan, L-R Wang finds out that the multiplier effects of the government's use of tax deductions to encourage venture capital were ten-fold or above between 1990 and 1992 (Wang 1995).

3.4.1/ Leasing

Leasing might be a very convenient option for SMEs which need to acquire expensive technologies in their cycle of production. First of all, leasing schemes do neither require a collateral, nor a third-party source of finance as the customer is able to finance 100% of its acquisition. It helps to solve two of the major problems of small firms. Then, leasing contracts are rather flexible and can therefore be adapted to the customer specificity, particularly in terms of expected cash flows. It also allows a rather short approval time, which is often crucial for small firms.

Overall, there is a mutual interest between the leasing company and small firms to get the latest equipment available and to ensure that it is suited to its needs. The best guarantee for the leasing firm to get paid is indeed that its client runs a successful business. In addition, the leasing company is often the supplier of equipment itself, which helps to significantly lower intermediary costs: the supplier and the lender are the same entity, guaranteeing faster procedures and services more adapted to their needs.

For the leasing company, there are enough positive factors as well: as the lease is focused on the cash flow generated thanks to the use of the equipment, and as the collateral is the equipment itself, the risk is rather limited and there is no need to use a complex set of verification procedures on the borrower.

3.4.2/ Insurance

One of the main problems facing SMEs when they apply for banking loans is the absence of collateral. This is particularly true in Russia, where the still insufficient protection of creditors'

rights has led credit institutions to ask for at least 100% collateral for all commercial loans, sometimes more when they consider the risk higher. This situation is one of the main obstacles for the development of banking credit to SMEs.

To supplement for collateral, there are number of types of insurance that could be used in order to reduce the lender's risk and potentially improve SMEs' access to credit:

- **Mutual guarantee agreements.** They are set up by governments, international financial institutions or, sometimes, by SMEs themselves¹¹ with the purpose of covering some portion of the losses incurred if borrowers default on loans. The International Financial Corporation has strongly promoted the development of this type of schemes, which is already available in Russia for some years and has encountered real success in other countries where the private insurance sector remains weak (IFC 2004). In that case, the State or a public institution takes the place of the private insurance companies and, against a fee, offers banks an insurance in case of default. However, there is a clear risk of moral hazard and adverse selection and empirical evidence has not demonstrated the real effectiveness of such schemes (UNCTAD 1999);
- **Credit insurance.** This instrument covers the risk for a firm of not being paid after having delivered its good to a client. It is often used to mitigate the risks of foreign markets and is better known then under the concept "export credit insurance". It is a largely diffused instrument in the US and in European Countries, which created large and efficient export credit insurance companies (Hermes, Coface, USExim,...). The German credit insurance company Hermes is particularly well-known for supporting exporting SMEs by extensively covering their risks on emerging markets. Russia still lacks such an instrument, despite several attempts to create it;

¹¹ It is the case in France, for example, where there are more than 115 active Mutual Guarantee Funds founded by SMEs on a voluntary basis in order to safeguard the professional activities of their shareholders by easing access to bank loans.

- **Basic insurance schemes.** In the absence of special instruments promoted and supported by the government, lenders have to rely on traditional insurance schemes to cover the risk associated with lending to SMEs. The main problem here is the additional cost for small firms necessary to sign insurance contracts. In addition, the Russian insurance sector still appears narrow and rather fragile.

3.4.3/ Additional supports to the provision of seed capital: business angels and the role of the stock market

Start-ups and high-tech SMEs are usually in need of a certain amount of seed capital to begin their activity. Apart from the own resources of the entrepreneurs, few instruments are available. Founders of start-ups have usually to rely on informal capital providers (the family, friends, etc.), which are also known as “business angels”. The main advantage for entrepreneurs is that business angels are usually ready to take more risks and be satisfied with lower return than venture capitalists or traditional lenders like commercial banks.

Last but not least, stock markets should not be forgotten, even if they can not be a source of financing for start-ups and small firms in their traditional form. To correct this situation, an increasing number of countries have established secondary stock markets specialized in trading stocks of high-technology firms and helping to provide them equity. The best example is obviously the NASDAQ in the US, which played a considerable role in the latest decades of the 20th century and helped to finance a lot of high-technology firms that became giant companies afterwards. This is however much of an utopia for emerging countries. The stock market can be efficient only if it is sufficiently liquid and deep, which usually takes years to happen. Currently, the Russian stock market for blue chips and shares of well-known companies still largely lack these characteristics. Making the birth of a “Russian NASDAQ” possible needs a range of other conditions at first, among which the existence of an already quite large and dynamic sector of

innovative SMEs is not the least. In that sense, the stock market only appears as a complement to more traditional ways of financing start-ups and small innovative firms.

4/ The role of the State – private-public partnership and support

"Globalization has clearly shifted the comparative advantage of OECD countries away from means that, in traditional inputs of production -land, labor, capital- and towards knowledge." (OECD 2000). This remark has direct implications for economic policy and the role of the State in the economy. In addition to the traditional triad policy instruments -regulatory policy, industrial policy and public ownership of business- the importance of an active policy towards the creation and commercialization of knowledge has progressively increased. On the other side, empirical evidence clearly shows that the development of a dynamic SME sector has not gone anywhere without a significant support of the State. So, how can the State promote the development of innovative SMEs?

The following categories of government incentives can be identified:

- Providing the right macroeconomic and legal environment.
- Financial and fiscal incentives.
- Institution-building.

4.1/ Providing the right macroeconomic and legal environment

4.1.1/ Global considerations

This point needs not to be detailed as it copes with a rather obvious problem: enterprise creation and success is more frequent in economies with stable and sound macroeconomics and where contracts are respected and creditors as well as owners' rights are properly protected. This is not a specific feature of SMEs, but it is particularly true for them, as they are more exposed to external factors and less able to protect themselves than bigger companies.

The State has clearly a role to play in implementing a sound macroeconomic policy and promoting the stabilization of the environment in which companies are working. In that sense, some elements seem particularly important in Russia in the current period:

- **The impact of monetary policy.** One of the most heated debates surrounding the current economic policy of the authorities remains the strategy of the monetary authorities. Much has been written about the dilemma facing them and it needs not to be detailed. High trade surpluses provoked by high international commodity price lead to a high inflow of foreign currencies, which the Central Bank is obliged to buy, fueling monetary emission and leading to a constant real appreciation of the Russian Rouble. At the same time, structural rigidities associated to monetary emission fuel inflation (11.7% in 2004). In that context, there is a choice for the monetary authorities between supporting a real (or even nominal) appreciation of the Russian currency in order to limit the price index increase or, on the contrary, avoid a real appreciation in order to limit the deterioration of the price competitiveness of domestic producers against imports but, in that case, accept a higher inflation. If we strictly speak about the impact of monetary evolutions on small firms, two remarks can be made. The first is that the deterioration of the price competitiveness clearly lowers the incentives for the creation of small firms in the productive sector. Instead, there are much more incentives for individual entrepreneurs to create firms selling imported products. Want it or not, there is no doubt that the real

appreciation of the Rouble is an obstacle to the development of a dynamic domestic SMEs sector on this particular point. However, and it is our second point, the current orientation positively influences the level of trust and confidence in the local economy, which is a key factor for innovative SMEs. By creating a more stable environment, it lowers the risk associated to the creation of start-ups (which are already very high) and helps to stabilize the financial system. To put it in a nutshell, the real appreciation of the Rouble might have some negative effect on the short term, but it is fully justifiable in the long run. By helping to stabilize the macroeconomic environment, sustaining the openness of the economy and imposing tough competition rules, it is also aimed at giving better incentive for structural competitiveness to local companies;

- **Fiscal incentives.** Granting special fiscal privileges is a well-known and rather largely used instrument for the promotion of newly-created and small firms. In that sense, much has still to be done in Russia in the wake of the fiscal reform. As a matter of fact, there are still no clear fiscal incentives for newly created firms apart from the possibility to apply for the simplified taxation system.
- **What place for SMEs in the industrial policy?** With the high fiscal surplus and fast increasing reserves of the Central Bank and the Stabilization Fund, the topic of industrial policy has reappeared lately. There is, however, still much confusion about its necessity and the way it might eventually be conducted. Anyway, the room for promoting innovative SMEs in the framework of global State programs of industrial policy appears rather narrow. Direct financing is not the main problem to be solved now, but the creation of a clear legal framework and the promotion of stronger links between science and the economy.

4.1.2/ The need to protect intellectual property rights

Obviously, one of the main obstacles to the development of private initiative in the sphere of knowledge in Russia –and private initiative is the cornerstone of the development of a dynamic SME sector- is the confusion around the notion and the protection of intellectual property rights (IPR). The major legal framework for their regulation includes the Constitution, the Civil Code, the Patent Law, six basic IPR laws (dealing with trademarks; copyrights; chip design; information storage and protection; software and databases; and selection achievements) and a whole range on other laws like “On Education”, “On Science, State Science and Technology Policy”, etc. As 59% of research & development is still financed by the budget and generally conducted in universities or State laboratories and research centers, discrepancies across different laws and codes makes the practical attribution of rights on innovation difficult and often confusing (Dejina, Bellais 2005).

Distribution of IPR is always a delicate topic, as innovation can be conducted at the same time by different sources. This is why the resolution of the problem is one of the keys of a sound development of national innovation systems. In Russia, apart from a great legal confusion, there are not clear incentives for researchers to foster the commercial application of their works as they are not protected by the law. And it is obviously impossible to commercialize innovation when its ownership is uncertain. According to official statistics, since 1997, less than 2% of patents are licensed and find concrete application against more than 30% in the Soviet Union (Martens 1999) and between 20 and 40% in the OECD Countries (OECD 2003). A common practice for researchers is to license their inventions abroad, because they do not trust the Russian legal system.

The current legal framework leads to something of an absurd situation: it does not promote the licensing and commercial application of inventions in Russia, but it gives much possibility for

researchers to do it abroad (from protection given by the Labor Code to employees and general acceptance of these practices by universities and labs due to the low salaries of researchers).

This does not mean, however, that nothing has been done to try to solve the problem of the commercialization of IPR. The main attempt was through the creation of technology transfer offices (TTO) in a number of research organizations. However, two ministries have started the procedure independently and with a different strategy (Dejina, Bellais 2005).

In the current Russian context, where the legal framework leads to much confusion, where there is a clear lack of innovation in the industry and where links between research and economic considerations are very weak, a good solution might be the creation of a specialized agency featuring the same characteristics as ANVAR in France or the British Technology Group in the UK. The main advantage of this type of structures is that they concentrate the licensing and patenting activity and the work around its commercialization in one place, and that it is regulated under the auspice of the government. As a consequence, there is a considerable reduction of transaction and information costs. It is also possible to have a broader picture of the needs and possibilities of innovative activity and possible industrial applications (Bonnet 2002).

The main task of the authorities is therefore both to clarify the legal framework and to define strategies oriented at fostering the commercial applications of R&D.

4.2/ Providing or helping to provide financing

4.2.1/ The instruments available to governments

As noted above, the two main preconditions for the success of innovative SMEs is access to new technologies and access to financing. Private financing can only satisfy part of this need, as

information asymmetry and high risk makes traditional private investors more than cautious. It is especially true in emerging countries where SME sector is still scarce and has not enough credit history to help put in place more flexible and adapted methods of lending for SMEs.

As a consequence, the State remains an important source of financing, even in the most deregulated and liberalized economies. Usually, public financing is distributed through special programs or institutions which promote innovative SMEs and implicate private participation. The best example is the Small Business Innovation Research (SBIR) program in the United States. It was put in place in the 1980s when the US Congress mandated each major research agency to allocate 4% of its research budget to funding innovative small firms. By the end of the 1990s, the SBIR accounted for almost 60% of all public financing programs and taken together, public financing for SMEs was about two thirds as large as private venture capital. Similar programs were put in place in a lot of countries and in the European Union in particular, through the Framework Programs of the European Commission¹² or the CRAFT programs (Co-operative Research Action For Technology)¹³. In France, it is estimated that more than two thirds of start-ups specialized in new technologies have benefited from the public financing of ANVAR¹⁴ (Mustar 1997, Bonnet 2002).

These programs strongly encourage entrepreneurship and help to increase the number of new innovative firms and to lower their mortality rate. However, they are also directed at boosting the activity of existing lead technology developers and allowing them to reach higher output scales. In a recent study about the participants of the Framework Program of the European Commission, the survey among participants show that public grants are much more used by SMEs not directly

¹² For details, see the site dedicated to the Sixth Framework Programme of the European Commission: www.europa.eu.int/comm/research/fp6.

¹³ The CRAFT scheme is oriented primarily at SMEs with limited or no R&D resources of their own. It provides financial support to group of SMEs that come together and contract a third party (usually a research center, university or private company) to carry out R&D on their behalf.

¹⁴ ANVAR is the French Agency for Innovation created in 1981 to support innovation in small and medium firms.

engaged in innovation. Their average age is 11 years for technology developers and 40 for leading technology users and their average number of employees is respectively 47 and 73 (Clarysse, Duchene 2000). It shows that public financing is more used to support the development of already existing firms which need to boost their R&D capacity in order to stay competitive.

The range of instruments available for the Russian authorities is therefore rather large. Some common features of State programs aimed at financing SMEs should nevertheless be reminded:

- Effective and transparent public governance;
- Active public/private dialogue, generally through specially-formed organizations and forums of discussions;
- Presence of high-skilled specialists capable of selecting the good projects;
- Availability of specific financial instruments.

4.2.2/ Specialized financial institutions at the national level

Together with direct financing, several countries have established specialized financial institutions for SMEs. The main objective here is to overcome the traditional difficulties associated with the limited abilities of small firms, high transaction and information costs. The first historical example dates from the 1920s, with the creation of the Netherlands Bank for Small and Medium Business and it was followed by a lot of developed countries (BDPME in France or Japan Finance Corporation for Small Business for example) as well as emerging ones (Small Industries Development Bank of India, Turkiye Halk Bankasi in Turkey, for example).

The experience of these institutions has been mixed. Usually, a significant increase of the credit portfolios to small firms did not go without substantial problems of poor quality of loans, bad profitability and doubtful financial sustainability. This has led most of these institutions to diversify their activities and to accept bigger companies as clients in order to mitigate the risks. An active participation of commercial banks (equity or in the form of consultative councils) is also a way to better share the risk and enlarge access to information and financial instruments for SMEs.

In Russia, the creation of this type of specialized financial institutions has frequently been under discussion. Several attempts were made in other domains (Rosselkhozbank in the agriculture, Bank for Development for infrastructure projects, Roseximbank for export insurance). However, a low financial support from the State and the obligation to respect strict rules of risk and solvability management established by the Central Bank have usually led them to concentrate on commercial profitable activities in order to survive. Once again, global problems of public governance and transparency do not help to consider the creation of a specialized financial institution under the control of the Federal State as a solution for the financing of SMEs.

4.2.3/ The role of the international community

Together with national governments, the international community has a role to play in the promotion of small firms' access to finance. The first is to promote the building of stable, diverse and well-functioning national financial systems. The role of international financial institutions and international experts is crucial in this complex task. The second is to help building the institutions that, at the micro-level, will have a positive impact on SMEs access to credit. The UNCTAD has, for example, defined three fields of actions: the establishment of international

regulations and standards, the facilitation of policy dialogue and technical assistance to improve market infrastructures (UNCTAD 1999).

International financial institutions can also be used as a direct investment for the financing of SMEs. Good examples are the European Bank for Reconstruction and Development (EBRD) and the International Financial Corporation (IFC). In particular, the Russian Small Business Fund of the EBRD, created in 1994, has granted more than 220,000 loans for a total amount of USD1.9 billion up to mid-2005 (EBRD 2005).

CONCLUSION

The development of a strong high-technology SME sector has been defined as a priority by the President of the Russian Federation and he is regularly reminding policy-makers of it. However, limited progress has been observed up to now. This is partly due to the great confusion about the notion, the target and the instruments available. New laws are regularly adopted¹⁵, government programs have been put in place¹⁶, various funds and organizations have been created¹⁷ and research institutes have started to implement special analysis devoted to the topic¹⁸.

However, they are still too modest to deal with the problem. The lack of clear theoretical learning and the absence of clear conclusions linked to large-scale surveys do not simplify the work of policy makers regarding the development of SMEs, and especially the one of innovative SMEs. A survey of the existing literature and the experience of other national economies can nevertheless lead to some global observations and remarks about the Russian case:

- Innovative SMEs are a part of global innovation systems. In Russia, the main problem lies in a clear definition of the features of this system. With the State still representing about 60% of the funding of R&D and in the quasi-absence of financial instruments or fiscal incentives to promote private entrepreneurs in the sphere of the knowledge economy, innovative SMEs have little room to prosper. At the same time, the basic

¹⁵ To take the last examples, part 26.2 and 26.3 of the Tax Code were modified in order to increase the level of turnover making possible the use of the Unified Tax on Turnover.

¹⁶ In 2005, the Ministry of Economic Development and Trade has adopted a program for the development of small business with 4 directions: "Creation and development of infrastructure for small enterprises (Business incubators)", "Development of a credit system for small enterprises", "Creation and development of the infrastructure for the support of small enterprises in the scientific and technological sphere", "Support for small enterprises producing goods and services designed for export". The total budget devoted amounts to RUR1.5 billion.

¹⁷ Chronologically, the Russian Foundation for Technological Development (RFTD) in 1992, the Federal Fund for Assistance to Small Innovative Enterprises in 1994, the Russian Venture Innovation Fund in 2000.

¹⁸ Apart from Opora and VTsIOM, the World Bank, the Center for Economic and Financial Studies, CEFIR publish regular surveys on small and medium enterprises.

conditions are present: a network of research centers, high educated workers and strong industrial basis in activities much dependent on innovation. Innovative SMEs could and should be the link helping the system to work more effectively ;

- The market does not generate innovation *per se* and the State has definitely a role to play. Public-private dialogue is the first necessary step to improve the regulatory environment and the global policy framework in support of enterprise competitiveness. In Russia, this dialogue is largely biased by the ado about relations between State officials and business oligarchs. On the contrary, there is a need to formalize regular forums of discussion and meetings on SMEs, on the example of the OPORA. Much has still to be done in that direction;
- Despite being an important factor, financing does not appear as the main problem hampering innovative activity of SMEs currently in Russia¹⁹. It is indeed the absence or the inefficiency of the institutions necessary for simplifying and strengthening the link between knowledge and the economy. Without a clear and one-sided implication of the authorities in that field, there might not be rapid progress and the innovative SME sector will remain almost non-existent;
- Networking is the key. International experience shows the crucial role played by networking and clustering in the creation of efficient SMEs sector. Apart from a clarification of the legal framework and a rationalization of State support, there is therefore still much to do in the self-organization of SMEs.

¹⁹ The same survey about factors hampering innovative activity at SMEs was conducted in 1999 and 2003. In 1999, lack of finance was cited by 70% of respondents, against 16% only in 2003. However, “Underdeveloped infrastructure in the area of technology commercialization”, which was cited by less than 10% of respondents in 1999, was mentioned by 46% of them in 2003.

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