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The International Circulation of Elites: Talent, Entrepreneurial and Political¹

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Abstract

This paper provides an overview of issues pertaining to the international mobility of elites in the global economy. The concept of elites is discussed from the viewpoint of international mobility of people: (a) with high education and special skills, (b) entrepreneurs, and (c) political leaders. We explore the concept and motivation of these elites to move across nations and review empirical evidence relevant to this type of mobility.

1. Introduction

A largely neglected topic in the economics of globalization is the international mobility of elites across nations. The concept of elites was developed by the “Italian school”. Main representatives of this school were Vilfredo Pareto (1848–1923), an economist and sociologist, and the political scientist Gaetano Mosca (1858–1941). On the other side of the Atlantic, the American sociologist C. Wright-Mills, in *The Power Elite* expanded the concept to include the economic, political, and military “power elite” in the United States. Pareto (1991) viewed elites as “people with exceptional qualities”, thus holding a largely merit-oriented concept of elites. Pareto then envisaged history as a circulation of elites mainly *within nations*; his main concern was *not* the international circulation of elites. In the *Ruling Class*, Mosca indicates that the main source of power for the *ruling* class (elites) is their superior internal organization, enabling them to “have a disproportionate influence over the vast majority of society despite their numerically small group”. Superior knowledge and better organization are key elements for a group to become elite.

In this era of globalization studying the international circulation of elites seems to be a natural extension of the concepts developed by Pareto, Mosca, Wright-Mills and others. The concept of elites conveys the idea of a small group of people that because of their special role in knowledge generation, in wealth accumulation and in politics (the rule of a country) have an impact on society and the global economy that goes well beyond their quantitative number. The elites we refer in this paper includes people with special knowledge in the scientific and technological fields, professionals in the private and public sector, entrepreneurs with leading roles in innovation and technology transfer and politicians and social leaders.

This paper is explorative. It offers first a classification of different types of elites, distinguishing between merit-talented, entrepreneurial, and political elites examining the main features and particularities of each group from the perspective of their international mobility. Then, the paper presents and discusses various pieces of empirical evidence

available in this subject matter concentrating relatively more in the mobility of talents and entrepreneurs while discussing some suggestive evidence on mobility of politicians, still a largely unexplored field of analysis. The paper closes with some concluding remarks and directions for further research.

2. Concept and types of Elites

In this paper we concentrate in three types of elites: *merit-talented, entrepreneurial, and political* elites. These elites are not necessarily the kind of elites associated with “power elites” (Wright-Mills)¹ or “special or superior” persons in the sense of Mosca (1960)² albeit the concepts are not entirely unrelated. The merit-talented elites we are considering include professionals, scientists, entrepreneurs, medical doctors, graduate students, cultural workers; these people often have an impact on the global economy through their capacity to create, apply and disseminate knowledge and generate productive wealth. We consider also political elites in this paper highlighting their different nature from merit-based and entrepreneurial elites.

Although these elites may overlap each other, the economics and sociology implied in their formation and patterns of mobility both nationally and internationality are complex processes that deserve attention and study. Their differences cover a broad range of distinctive dimensions such as the way they join foreign labor markets, as well as salary levels, career paths, promotion criteria, and so forth.

2.1. Merited and Talented Elites

When we talk about *merited and talented elites* we assume the main linking force is the high talent and knowledge that these people carry with them. These elites consist of people who apply their skills and ideas to production, innovation, business, academia, research, and social and cultural activities. Globalization enables the spread across countries of new information technologies, new products, services, and ideas therefore increasing the *economic value of talent*. The ways these talented people get involved in a

¹ Wright-Mills ([1956] 2000).

² Also Pareto ([1968] 1991) pointed out that elites comprise “people with exceptional qualities,” or those considered almost “superior members of society.”

market varies from independent services provision, to working in a multinational corporation or public international organization. A distinctive feature of these elites is that their rewards are mostly determined on the basis of people's merit and contribution to widen the knowledge base and increase productivity and profitability of businesses. The so called "winners-take-all markets" are often closely connected to the actions and rewards of highly talented people.

Solimano (2008) distinguishes four types of talent that are internationally mobile:

1. *Directly Productive Talent*: talented people comprised in this category such as executives, managers, technical engineers are an important engine of the production processes. Their productive contributions range from overseeing production, managing people, changing organizational structures and strategies, developing new business lines, machinery enhancement, etc. Their contribution to development and economic growth can be measured by changes in market sharing of their respective companies, changes in labor- or capital-intensity in productive processes, and by the success (or failure) of the managerial models they are applying.
2. *Scientific Talent*: this group – comprising academics, scientists, international students, and researchers – helps to create and spread knowledge and their contributions take place, chiefly, in universities and research centers. Perhaps this is the most studied group and its mobility has been analyzed for many years starting with the concept of "brain drain", and gradually changing to "brain circulation".
3. *Health Talent*: this is a wide group of people consisting of physicians, surgeons, dentists, therapists, and mental health professionals. It also includes nurses, pharmacists, clinical scientists, and paramedics. The consequences of its international mobility may be detrimental for the health sector of the *origin country*, mainly when health professionals come from low to middle income nations. Part of the health mobility, however, has gained scene worldwide thanks to altruistic or international programs such

as World Health Organization, International Committee of the Red Cross, *Médecins Sans Frontières* – Doctors without Borders, Project HOPE, Oxfam International, and many others.

4. *Cultural and Social Talent*: a group comprised by artists, musicians, writers, media-related people, free-thinkers, social entrepreneurs, and other social-change promoters³, that helps to spread cultural products and social values around the world.

These four categories may have different motivations—some are economic other non-economic and varied impacts on the economy and society of origin and receiving countries.

2.2. Entrepreneurial Elites

Entrepreneurial elites are formed by people with special skills in wealth creation, resource mobilization and innovation; entrepreneurs are not necessarily endowed with formal university education. However, they often play important roles in the organization of production and the surge of innovation and therefore are a critical agent of the growth and development process. They engage in the development of new businesses and organizations and, most of the times, carry with them a flow of capital and new technologies.

Although the idea of entrepreneurship is an ancient one, defining and limiting its scope is still complex. Entrepreneurs have the distinctive feature of taking risks, a point emphasized by Frank Knight and Joseph Schumpeter and show a talent for combining the capital and labor necessary to realize a vision of opportunity and prospective profits. In the Schumpeterian tradition, entrepreneurs are agents for mobilizing resources and investment and promoting innovation. In addition, the “psychology” of the entrepreneur certainly differs from that of the scientist, the expert, or the intellectual with whom we usually

³ As an example of social entrepreneurs and well-being promoters we recall Dr. Muhammad Yunus, the banker and economist from Bangladesh, founder of the Grameen Bank and developer of the concept of micro-credit. He was awarded the Nobel Peace Prize 2006 due to “their efforts to create economic and social development from below. Lasting peace cannot be achieved unless large population groups find ways in which to break out of poverty. Micro-credit is one such means. Development from below also serves to advance democracy and human rights.” (The Norwegian Nobel Committee, Oslo, October 13, 2006).

associate the term “human capital.” In contrast, professionals, scientists, and engineers are often employees rather than owners and are supposed to be more risk-averse than entrepreneurs (Solimano, 2010, forthcoming). Moreover, the emphasis on the role of entrepreneurship in the literature of growth economics in recent years has been generalized and the term is applied to a wide variety of phenomena⁴. Here we adopt an empirical definition of entrepreneurship developed by Ahmad and Seymour (2008), that unifies various aspects and evolution of the idea of entrepreneurship (Avanzini, 2008). For these authors the *entrepreneur* is an economic agent that “[...] is simultaneously looking back to the resources (and combining them in new and creative ways) and forward to markets (and perceiving new or unmet opportunities). The entrepreneur perceives and recognizes a fit between the two, a capability and process referred to as innovating. The entrepreneur’s activities occur within a business context, which includes industry structures, competition, and national economic structures. This business context is impacted in turn by wider environmental considerations, which include the economic, political, legal, social, cultural, and natural settings. (In undertaking such entrepreneurial activities), the entrepreneur is endeavoring to create value” (Ahmad and Seymour, 2008, pp. 5).

It is clear from this definition that entrepreneurs are naturally talented people, as said before not necessarily derived from formal education, but endowed with a particular business vision that let them take advantage of the rising opportunities dealing with existent resources or generating new ones. However, not all entrepreneurs have the same motivations to engage in those creative and productive activities, and of course, not all entrepreneurs are willing (or likely) to move outside their home countries. It is also clear that this vision of entrepreneurship is basically an economic one or *for profit*. Another category is that of *social entrepreneurs* (included before within merited and talented elites) whose motivations may be altruist and tied to social commitment; of course the actions and influences of social entrepreneurs have also an economic and social impact.

The literature of entrepreneurship developed in the last 30 years or so has introduced the following distinction:

⁴ Some authors, such as Gartner (2001), pose the necessity for establishing unified criteria about the meaning and extent of entrepreneurship.

- *Entrepreneurs of opportunity*. This is based on the notion of “Opportunity seeking” individuals⁵ who perceive the business opportunities and have a capacity to mobilize resources (credit, people, technology) for seizing those opportunities. These cases are usually identified as “*opportunity entrepreneurship*”.
- *Entrepreneurs of necessity*. In this case individuals get involved in entrepreneurial activities due to the lack of alternative economic opportunities. Generally, they are people who are currently unemployed, or their last job was not satisfactory, so they engage in new enterprise creation to generate income and meet their needs. This entrepreneurial activity is sometimes called “*necessity entrepreneurship*”.⁶ This is typically the case of shop-owners, small workshops, micro-enterprises and so on.

In fact, we can characterize entrepreneurial activity by

1. *The nature of the entrepreneurial opportunities*⁷,
2. *The entrepreneurial characteristics of the individuals*⁸, and
3. *The distinctive features of the decision-making environment*⁹ in which the entrepreneurial phenomenon takes place.

The three characteristics endow entrepreneurship with particular features that also determine its economic impact, duration, and likelihood of international mobility. Despite the differences involved in the previous classification, entrepreneurship may smoothly range from opportunity to necessity, and both motivations are present to a certain degree in different types of entrepreneurs (Avanzini, 2007).

An empirical (stylized) relationship between entrepreneurship and levels of economic development (a sort of inverted Kuznets curve for entrepreneurship) is depicted

⁵ See Gaglio and Katz (2001), and Baron (2004).

⁶ See McClelland (1961), Collins and Moore (1964), and Busenitz and Barney (1997).

⁷ See Kirzner (1979), Shane and Venkataraman (2000), Gaglio and Katz (2001), among others.

⁸ This feature is studied by McClelland (1961) Collins and Moore (1964), Busenitz and Barney (1997), to name a few.

⁹ This characteristic has been introduced more recently in the entrepreneurship theory by Knight (2001), Alvarez and Barney (2005), among others.

in Figure 1. It shows the relationship between the Total Entrepreneurship Activity rate (TEA), collected by the Global Entrepreneurship Monitor (GEM, 2006) and GDP per capita (PPP adjusted). The “U” shaped-form of this relationship has been explained by both types of entrepreneurship: while high-income countries, such as USA, Japan and EU countries show a weak *positive* relationship between entrepreneurial activity and income level (reddish-shaded area), low- and middle-income countries present a stronger *negative* relationship between the two variables (light blue-shaded area). The positive slope can be interpreted as showing the relevance of opportunity entrepreneurship associated with the development of new markets, products, and the exploration of new economic activities that imply important capital flows to support investment. On the other hand, portion of the curve with a negative slope would correspond to necessity entrepreneurship, involving underemployed and unemployed people trying to meet their necessities through small scale entrepreneurial activities, in order to overcome (hopefully) temporary economic adversity. This entrepreneurship is often associated with lower capital requirements and tends to be more volatile, with a high rate of destruction (entrepreneurial exit). In fact, new businesses started in those countries in the light blue-shaded area – e.g. Argentina, Brazil, China, India, Peru, Thailand, among others – are more likely to exit market activity before the 42 months¹⁰.

[Insert Figure 1 here]

From a migratory point of view, the institutional framework (political, legal, or cultural) directly influences the international location of entrepreneurial activity. One of the reasons for moving from one country to another is the search for more favorable institutional arrangements that favor entrepreneurship and entail lower costs of doing business.

It seems plausible that, *opportunity entrepreneurs* constitute a group with a higher probability to move internationally. Some examples arise from the super-rich elite namely comprising the Forbes’ ranked billionaires. For example, the Walton family of the Wal-Mart markets chain, the Benetton family with the design and production of clothes, the

¹⁰ Time limit to consider a new business as a established one, as defined in GEM (2006).

MacMillan family in the agricultural field (Cargill), John de Mol and Joop van den Ende with their entertainment business, among many others. Most of them are engaged in the development of new businesses around the world, mobilizing capital and human resources (something that affects also talent mobility) in order to exploit market opportunities in receiving countries.

Other entrepreneurs arise as part of the returning or circulating elite of merit-talented people that once leave their home countries to develop their skills abroad. They have become a vehicle of development in their own sending countries attracting capital (in the form of venture capital, for example), developing new economic sectors, changing market structure, and fostering employment and economic growth¹¹. The literature highlights a key distinctive feature of internationally mobile entrepreneurs: their capacity to mobilize capital together with them across national borders, or channel capital raised in receiving country to support their entrepreneurial business. This feature makes them very attractive for receiving countries though some of the foreign entrepreneur's intervention in certain economic sectors may result also in some detrimental outcomes for the economy of the receiving countries¹².

On the other hand, *necessity entrepreneurs* are more related to temporary economic stress, to recessions and slumps, however this segment are often less likely to move abroad. They try to overcome the difficult times with small businesses, (rarely developing grand new strategies and products or big projects) and tend to disappear as soon as they get a stable job in the labor market. An exception to this, however, is provided by immigrants that open small businesses in other countries; this is typically the case of ethnic stores, cultural goods, and remittances shops, carpets stores that are owned and run by foreigners.

¹¹ Recent research has emphasized the role of these returning and circulating talented-entrepreneurial elite as an engine of economic growth and attractor of foreign investment. Saxenian (2006a) studies the effects of these elite in Taiwan and Israel. Saxenian (2006b and 2007) studies the effect of the adoption of the Silicon Valley model in China and India, on a case-by-case base. On a more aggregated base, Docquier and Lodigiani (2008) study the impact of skilled migration and their networks outside sending countries on foreign direct investment inflows in sending countries, finding important positive network externalities, namely that having a large educated diaspora abroad stimulates physical capital accumulation.

¹² New businesses boosted by arriving entrepreneurs may destroy weak economic sectors or absorb incipient local entrepreneurs, exploiting scale economies, or dominating market because of capital availability. Also entrepreneurs may generate economic instability because of their quick entry/exit behavior (generally associated with the so-called “flying” capital).

This segment resembles to some extent the entrepreneur by necessity in terms of operating business of relatively small scale and lower financial capital needs.

2.3. Political Elites

A third category is *political elite*. Here a working (broad) definition is people engaged in political activities such as party leaders, congressman, Heads of State, Presidents and leaders of social movements with ties to political parties. These people often have broad social network connections and – “power basis” in their home countries – that support their membership of these elite.¹³ Up to a certain point, this is an extension of the “power elite” concept posed by authors such as Wright-Mills ([1956] 2000) and Mosca (1960).

A question related to the theme of this paper is the extent to which political elites are internationally mobile. Empirical evidence is very scant on this issue but we shall present and discuss some of it. The conventional wisdom is that political elites are many times country-specific and do not have traits that make them internationally mobile in an obvious way (Solimano, 2010). Political leaders are often viewed as tied to political circumstances and social connections and conditions of their home country and therefore are primarily country-specific. However, we also can observe certain “global political elites”, i.e., groups of people that belong to transnational political networks (i.e. the international social democrat, the international Christian democrat, the old communist international movement, the non-aligned movement, conservative internationals and so on). In turn, these international movements are supported by a domestic political base, links and connections. We can distinguish two types of political elites:

1. “*Domestic*” Political Elites: the groups in this category base their power on familiar and historical links with national constituencies, extending their networks to include economic elites that can provide financing for their

¹³ Modern bureaucratic society values these organizational skills and rewards them with political power. Political elites use several mechanisms to support and improve their net such as social connections, marriage, and ownership of productive assets, ideas and beliefs, political clientelism, “favor” exchange, etc.

political campaigns; these domestic political elites may seek as also reaching prestigious positions in organizations and society.

2. “*International*” Political Elites: these would be individuals associated with diplomacy, international organizations, and transnational corporations with global impact.

Intuitively, international migration of *domestic or local political elites* may imply losing or weakening internal political connections if that migration is permanent as they would lose touch with internal constituencies that provide their sources of support. Thus their influence and power are more country-specific (i.e., when their power resides on local recognition, contacts, and knowledge of power distribution in home countries). A case of that mobility is related to be on the losing side of internal political conflict (see below).

On the other hand, international political elites are more mobile in contrast with “domestic or local” political elites. *International political elites* base their power on their international connections, and international circulation is a key mechanism of consolidation of their power. Those attached to international organizations and diplomacy includes both international civil servants (a technocracy) and national government representatives (political representatives).

3. Empirical Evidence

3.1. Concentration of Talented Elites

Measuring the concentration of elites in certain locations and countries, or determining the attractiveness of a certain environment to develop new activities or find business partners is an important task. Talent is often concentrated geographically. In Solimano (2010, forthcoming) we look at the distribution of Nobel Prizes in Sciences and Economics and other categories of Nobel Prizes during recent decades, and conclude that these Nobel Prizes tends to locate in high income countries in the North, with a dominating concentration in the United States: almost 63% of the Nobel Prizes considered have been awarded to researchers and scientists who did their work in the USA, of which 23% correspond to foreign born individuals that obtained the prize for their contributions during their stay in the US. The United Kingdom and Germany hold 8.26% of the Nobel prizes;

and the others are almost equally distributed between other developing countries. See Table 1 for details on the geographical distribution of Nobel Prizes awarded to scientific and medical talent.

[Insert Table 1 here]

However, not all types of talents do concentrate in the North. This is the case of artistic and social talent. Social action – understood as the actions taken in order to empower and improve the welfare of poor people and more vulnerable social groups – is carried-out in poor countries and regions, and people devoted to those activities –social entrepreneurs -- are generally circulating around the developing world. In the cultural field, artists, writers and painters benefit from interaction with peers and seek a milieu supportive of creativity. Famous cases such as Picasso, Matta, García Márquez, Isabel Allende found support for their literary and artistic careers largely *outside* their home countries. In the specific case of writers we collect information on the distribution of the Nobel Prizes in Literature for the period 1980-2008. As can be seen in Table 2, these prizes are more uniformly awarded across countries in opposition to the prizes in science and economics that are strongly biased towards advanced economies. Some of the Nobel laureate of literature were awarded due to their capacity to express in highly creative ways the particular situations in their home countries.

[Insert Table 2 here]

Florida (2005) created the Global Creativity Index, using creativity as a proxy for talent. The Global Creativity Index ranges between 0 and 1, and is a weighted average of other three indexes: talent, technology, and tolerance. Table 3 that presents the values of the index shows that the potential for creativity in high-income countries is higher than in middle income and low income countries, relegating developing countries to the last places in the rank. In rich countries there are more resources for creativity, there is a higher size of critical mass of peers and environments tend to be more supportive to creative people.

[Insert Table 3 here]

Another attempt to quantify a talent index is that of Heidrick and Struggles and the Economist Intelligence Unit (2007), presented in Table 4. The Global Talent Index uses quantitative and qualitative data to measure the economic indicators, cultural contexts, trends in education, foreign direct investment, mortality, health and market flexibility that will impact the ability of talent to thrive in a set of 30 countries included in their study. This index shows the positioning of developed countries among the first places relegating less developed countries to the worst positions in the index. The level of per capita income is a key variable to explain the concentration of talented people in rich countries. In contrast, political instability and the absence of democracy tend to motivate emigration of the skilled and talented from unstable countries.

[Insert Table 4 here]

There are several reasons for explaining the concentration of scientific and health elites in high income countries. Besides higher pay and better working conditions – certainly very important factors – there are the synergies emerging of the concentration itself: the gains from interaction with colleagues in a suitable environment helps to foster intellectual production. The high level of intellectual production in high income countries is reflected in the number of scientific publications that we collect in Table 5 for the period 1998-2003. As can be expected, top-rated countries coincide with those with a greater number of awarded Nobel Prizes, giving us a hint about the importance of the interaction between talented people.

[Insert Table 5 here]

The relative abundance of high-talented people in the North, namely in the OECD countries, attracts more brains to those countries. Synergy, better economic conditions (pay, career opportunities, living standards), recognition of talent, in some cases similar characteristics of receiving countries (some of them linked by historical and cultural ties, such as the case of colonies in the South), are some of the factors that foreign students value in choosing a country to pursue their higher-education. Vincent-Lancrin (2008) studied this group of mobile talented elites as part of the World Migration Report 2008 edited by OECD, and found that there exist a general trend to move from Southern to

Northern countries, and the choice of country of destination is heavily influenced by administrative facilities, cultural ties, and the concentration of related talent. Table 6 shows the flows of international students from different regions to OECD countries. In this context, we can see that, for example, historical links between Africa and Europe make the latter the preferred destiny of African students going abroad. Commercial links of between North America and Asia turns the former in the destiny of choice for Asian students. Political and commercial ties direct South American students flow to North America. Geographical proximity and commercial links strengthen the connections between Oceania and Asia-Pacific.

[Insert Table 6 here]

Scientists, researchers, and health professionals, tend to collaborate and produce knowledge across universities. According to Jones et al. (2008), there is a generalized tendency of producing knowledge by team-works, increasingly spans university boundaries not only in science production but also in engineering and social science. Multi-university team-works have been the fastest growing type of authorship structure during the last three decades. In this context, elite universities, *generally located in developed countries*, play a dominant role in this new trend given that papers produce their highest-impact when they include a top-tier university. But the main concern is associated with the fact that this multi-university teamwork is increasingly stratified by in-group university rank: thus, although geographic distance is of decreasing importance, social distance is of increasing importance in research collaborations. Elite universities are more intensely interdependent, playing a higher-impact and increasingly visible role in science, engineering and social sciences. The differential role and impact of elite and non-elite universities is widening. These authors conclude that despite the rising frequency of research that crosses university boundaries, the intensification of social stratification (by in-group university rank) in multi-university collaborations suggests a concentration of the production of scientific knowledge in *fewer centers* of high-impact science.

These results also extend to technical and directly productive knowledge generation, as pointed out by Wuchty et al. (2007). The authors find a similar tendency among

technical talented people that collaborate in the production of directly productive inventions after analyzing 2.1 million patents registered in recent years. In Table 7 we present some statistics on the distribution of patents registered by residents and non-residents for selected countries during 1998-2004. High income countries dominate by far the ranking, being Japan and the United States the most important countries accounting for the 57% of patents registered around the world. However, notice the differential basis of patent registration: Japan, Germany, the Russian Federation, and France have a predominant registration of patents by residents, associated with home country production of knowledge, while countries such as Canada, China, and Australia have an increasing sharing of non-resident patent registration, indicating that those countries are more likely to be the receivers and adopters of new technologies.

[Insert Table 7 here]

We can also approximate the mobility and concentration of directly productive talent looking at intra-company transferees across borders. The OECD World Migration Report 2008 studied this point producing evidence that we reproduce in Table 8 for 1996, 1998, 2000, and 2002. According to the table, Argentina, Brazil, Colombia, and Venezuela have been important contributors of executive, managers, and specialized professionals working at transnational enterprises, for the United States. In this context, Chile has gained relevance in the sharing of talented employees being moved outward. This is another example of brain circulation that is rarely accounted in usual statistics (generally including only students and academics). Many companies move their people from their offices in peripheral countries to their headquarters in USA, Japan, Germany, France, or the United Kingdom, “draining” local managerial and technical talent, attracting them with job promotions, better economic conditions and life-style, and also better opportunities for their children (sometimes including benefits to pursue studies in the receiving country).

[Insert Table 8 here]

Also the availability of a suitable and stable economic and political environment, together with enough funding and infrastructure increase country attractiveness for talented elites that need to support their work. A usual measure of funding available is the level of

research and development expenditure, as shown in Table 9. OECD countries plus Israel more than double in average the R&D expenditure in less developed countries. However, the implications of this empirical fact are more worrying: recently, Grossmann and Stadelmann (2008) developed a model for accounting the impact of the mobility of high-skilled people on R&D and infrastructure investment. They found that when emigration of talented people accentuates, sending countries' public R&D and infrastructure investment is adjusted downward. Receiving economies, on the other hand, tend to increase its investment in R& D and infrastructure. This decreasing level of investment in sending countries implies a negative feedback associated with talent emigration that tends to generate more emigration of high-skilled people, generating a self-reinforcing spiral of emigration of talent.

[Insert Table 9 here]

3.2. Circulation of Entrepreneurial Elites and their Beneficial Impact

For many years there has been a persistent belief that emigration of high-skilled people damages developing countries and favors developed countries ("brain drain" from the "south" to the "north"). The general picture can be seen in Figure 2: Latin America and Africa have been a source of talent that has been migrating to OECD countries. Major destinations for talent coming from developing countries during the last quarter of twentieth century have been Canada, the United States, the United Kingdom, Australia, France, and Germany. Also Figure 3 shows a similar situation in the case of health professionals, indicating that during the 14 years represented in the chart, Africa, South Asia, the Middle-East and Latin America have been exporting health talent to the North.

[Insert Figure 2 here]

[Insert Figure 3 here]

Receiving countries in the OECD have gradually applied policies oriented to select immigrants facilitating the entrance of highly-qualified people while making more difficult in some cases the immigration of less qualified individuals. According to an ILO's

report (ILO, 2006), many northern countries seem to be competing to attract global talent in order to strengthen their international position in the “global war on talent”. This elements work through the demand side for talent. On the supply-side, instability in origin countries, worse conditions for intellectual development, the global tendencies to agglomerate capital and human resources where they are abundant, and increasing positive self-selection among international migrants, have also contributed to direct flows to northern countries in detriment of less developed countries in the south.

However, during recent years, researchers realized that these “brain drain”, contrary to the generalized beliefs, might generate a positive spillover in sending countries. The reasons for this positive effect in those “drained” countries – generally developing countries – obey to the different ways in which talented and entrepreneurial elites may benefit them. For example, Beine et al. (2008) emphasize the effect of high-skilled migration on gross human capital formation, showing that this brain drain may be beneficial in some situations. According to their findings, high-skilled migration prospects can raise the *expected return to human capital* and foster higher investment in education in sending countries. They derive two main conclusions: “First, brain drain migration contributes to an increase in the number of skilled workers living in the developing countries. This suggests that the traditionally pessimistic view of the brain drain has no empirical justification *at an aggregate level*. Second, the brain drain has important *distributional* effects among developing countries, [...]” (Beine et al., 2008, pp. 648, italics as in the original). Their findings are supported by the empirical fact that countries combining relatively low levels of human capital and low skilled emigration rates are more likely to experience a beneficial brain drain, i.e. a net positive effect, and conversely. This phenomenon also produces the distributional outcome these authors refer to: small countries such those in Sub-Saharan Africa and Central America are less able to take advantage of the brain drain so they are net losers in this context, while big developing countries such as China, India, and Brazil seem to obtain non-negligible gains due to the brain drain.

Saxenian (2006a, 2006b, 2007), using a case-by-case study of Israel, Taiwan, India, and China, argues that the circulation of entrepreneurial and technological elites has beneficial impacts on sending countries. She shows that people, who have developed their

careers abroad, may constitute an important source of growth in their respective *home countries*, as the migration process may be reverted, or new technological devices and lower transport costs permit collaboration in real time, even on complex tasks, with counterparts located at great distances. Also the migration of talented students to developed countries to continue their high education may be viewed as something prejudicial for sending countries if they stay abroad afterwards, but new evidence shows that those emigrants are returning to their home countries carrying with them knowledge, technology, and capital.

Saxenian (2006a) focuses in the dissemination of the Silicon Valley model in Taiwan and Israel. According to her findings, the spread of venture capital financing has helped returning immigrants – those that once were young students “drained” out their home countries – to transfer the Silicon Valley model of early-stage high-risk investing to Taiwan and Israel, locations that US venture capitalists typically had neither interest in nor ability to serve. Native-born investors promoted this capital arrival providing the cultural and linguistic know-how needed to operate in these markets, bringing technical and operating experience, knowledge of new business models, and networks of contacts in the United States. She highlights the fact that when foreign-educated venture capitalists invest in their home countries they transfer first-hand knowledge of the financial institutions of the new economy to peripheral regions.

However, this reversed-migration process and the entrepreneurial elite action do not work everywhere in the same way: Saxenian argue that although developing countries that invested heavily in education in the postwar period also suffered the most from ‘brain drain’ as their most successful students left to take advantage of educational and economic opportunities in wealthier and more advanced economies, not all countries are prepared to take advantage of the benefits of reversed migration and entrepreneurial elites action. Some developing economies in Africa and Latin America have failed to invest in higher education (particularly technical education) and have no suitable labor force to engage domestic economies in such entrepreneurial activity. Others – e.g. Iran and the Russian Federation – have been too politically unstable to attract large numbers of technically skilled returnees. Still others, like Singapore and Scotland, have sufficient skill but have

oriented domestic institutions – including capital markets, regulatory, educational and research institutions, labor markets, and so forth – toward attracting foreign investment rather than supporting indigenous entrepreneurship. In many Asian countries, government support for large scale, capital intensive investments in the 1970s and 1980s, either by domestic corporations (Korea) or by multinationals (Singapore), have created inhospitable environments for entrepreneurial experimentation.

Recently, a new measure of entrepreneurship – developed in Avanzini (2009) – supports these conclusions offering key empirical information to understand the changing attractiveness of countries for entrepreneurs. In this context, entrepreneurship is measured by mean of a composite indicator that highlights seven aspects of entrepreneurial activity, its environment and impact, namely *entrepreneurial activity* (including firm dynamics, firm survival, and ownership); *entrepreneurship spirit, culture, and initiative*; *barriers to entrepreneurial activity and business environment*; *knowledge procurement*; *innovation*; *impact on employment*; and *impact on economic activity*. The attractiveness of a country is measured by the relevant aspects it may offer to entrepreneurs, and these aspects evolve through time changing entrepreneurs' location decisions in order to take advantage of the opportunities. Table 10 shows the relevance of each aspect (i.e. dimension, as it is called in the paper) for two periods, 1998-2001 and 2002-2005, and the rank of a set of selected countries.

[Insert Table 10 here]

Some countries, such as the United States, Japan, Republic of Korea, and Switzerland have suitable places for developing entrepreneurial activities. However, other countries like Israel, China, Brazil, Mexico, and India, have made major efforts in recent years to make them more attractive to entrepreneurs. The fostering and quality improvement of higher-education (particularly, technical education), and the investment in infrastructure, technology, and telecommunications, helped to shape a more comfortable environment to install new enterprises, much of them being outsourcers of big transnational companies. Also some changes to the law and bureaucratic procedures have reduced administrative barriers to entry and diminishing cost of doing business, both being relevant

factors to encourage new productive activities. Other developing countries such as Argentina and the Russian Federation are making efforts to become more attractive to international mobile investors though economic and political instability in these countries threaten their possibilities.

As pointed out by Saxenian (2007), today's returning entrepreneurs have accelerated the adaptation of technology and institutions to local circumstances, transferring production to a new environment, contributing with their knowledge of the local context, and bridging the differences in social, cultural, and institutional settings. Production division and specialization, reduction in the cost of transportation, and the rapid improvement of communication allow these highly mobile entrepreneurs to build and maintain long distance partnerships to tap overseas expertise, cost savings, and markets.

3.3. Mobilizing Political Elites

As was pointed before, political elites have different characteristics from those of the talented and entrepreneurial ones. For many years, the general belief has been that these elite (the political) is less mobile than others due to the fact that their constituencies are home –based and provide the support to maintain their power basis. However, there is some evidence that point to a degree of international mobility of the political elite: much of the national leaders had left their countries before to follow their higher-education in foreign universities. Another source of mobility comes involves international organizations as representatives of their home countries or as international civil servants, or as part of diplomatic corps. Finally, some leaders decided to move outward after political turmoil, and turbulence in their countries.

Spilimbergo (2007) contributes a very useful database that contains information about political leaders on sit during the '90s and the countries they chose to pursue their higher-education (see Spilimbergo, 2007, Table 10). According to his findings, more than a half of them chose to study abroad, and the preferred destinies are the United States, the United Kingdom, France, and Russia. As explained by Spilimbergo, and in connection with the previous discussion on student mobility, the existence of former political and historical connections (e.g. colonies) are important to explain those choices. People, and in this case,

political leaders, tend to move to places with which there exists some kind of link (cultural, idiosyncratic, and historical) as a way to minimize the cost of moving abroad. Of course, this situation helps to strengthen the ties of countries, and to perpetuate existing political regimes and power basis, which in turn is beneficial for political elites. In this context, is not strange that people coming from Eastern Europe tend to choose Russia (or the Soviet Union in the socialist period) as a destiny, or people from Africa prefer United Kingdom and France to follow their education.

Although pursuing higher-education may be an important reason for international circulation of political elites, another instance of international mobility is after *coups d'état*, defeats in civil wars, or simply a harsh change in government that make prevailing leaders in an uncomfortable position if they stay at home after unfavorable domestic political change. Historical examples of this would be the exile of the government of the Spanish Republic, lead by Manuel Azaña, after the Republicans lost the civil war in 1939; the self-exile and hiding of many Nazi leaders after the end of World War II (several of them ended up in Argentina, Chile and Paraguay); the exile of Guatemala's President Jacobo Arbenz in 1956 after a US-led *coup d'état*; the exile in Spain of Argentinean leader Juan Domingo Peron in 1955 until his return to Argentina in early 1973, and of his widow, María Estela Martínez de Perón, since 1981 after being liberated of an illegal detention. Then less dramatic cases are the exit of Ministers of government and high-level technocracy in countries that go to international organizations.

Concluding Remarks

This paper shows that merit-based, talent elites derive their main comparative edge in the possession of knowledge that is socially useful for scientific, technological and commercial purposes. Globalization and the increased interconnection among countries greatly increase the economic value of this talent and its international mobility. The international transfer of this talent may require the physical mobility of people as immigrants although this is not always the case. The uses of talent include production, academia and also extends to other fields such cultural activities and health services. International differentials in pay, career possibilities, resources for research and availability

of peers are among the most important factors affecting the direction of the international mobility of talent.

The international mobility of entrepreneurs is different from the international mobility of professional and academic talent on one hand, and from the international mobility of financial capital on the other. Entrepreneurs move across national boundaries because of more attractive business opportunities, less red tape and bureaucracy, and because more stability is found in other countries than at home. In the paper we use the distinction between entrepreneurs by opportunity and entrepreneurs by necessity with the former being more internationally mobile than the latter. Still in many recipient countries there is also a flourishing segment of *foreign* small size entrepreneurs in the services sectors such as restaurants, commerce and others. Return migration and circulation of technological entrepreneurs is a new feature that connects economies and regions in ways not considered years ago.

The empirical evidence reviewed in this paper shows a high concentration of professionals, scientists and innovators in high income countries. In contrast writers and other talented people in creative fields may be more spread out around the world, among developing and developed countries. Regarding productive activities, factors such as talent, technology and capital tend to concentrate in certain countries and geographical regions; in addition, they tend to move internationally.

The international mobility of politicians is a new topic that we consider in this paper, and that is little investigated in the literature. In general, politicians are considered a very-country specific group tied to national constituencies. Still we identify some forms of international mobility such as *forced* mobility in the case of politicians and social leaders losing civil wars in their home countries, Presidents and cabinet members deposed by *coups d'état*, and other instances of violent political change. In these cases, political leaders may choose to live abroad often in exile. Another form of *voluntary* international mobility that can lead to a future career as politician is foreign study, say pursuing graduate studies (or training) in foreign universities often in rich countries help students reach prominent positions of political leadership and senior civil service at home.

Finally, we find that political leaders in developing countries in their youth chose, preferably, pursuing education in universities in Europe and North America and this prove to be a source of international contacts useful for their future careers at home. In addition, some degree of intra-developing countries mobility in the educational field exists for future politicians and civil servants.

Topics for future research emerging from this paper include a better understanding of the determinants of entrepreneurial migration by size, motivation and degree of technological sophistication. Also we need to know more on the differences in the patterns of international talent mobility *within the private sector* (i.e. multinational corporations) compared to the mobility of independent professionals and entrepreneurs. Also more research is needed on the patterns of international mobility of people *within the international public sector* including both the technocracy of international organizations and positions of political representation in those organizations. More research is needed for understanding the international mobility of social leaders and politicians, too. Research in all these topics would benefit from joint work and professional dialogue between economists, sociologists and political scientists. Moreover, more and better statistical data and qualitative analysis would certainly help in advance our understanding of the determinants of the international mobility of elites.

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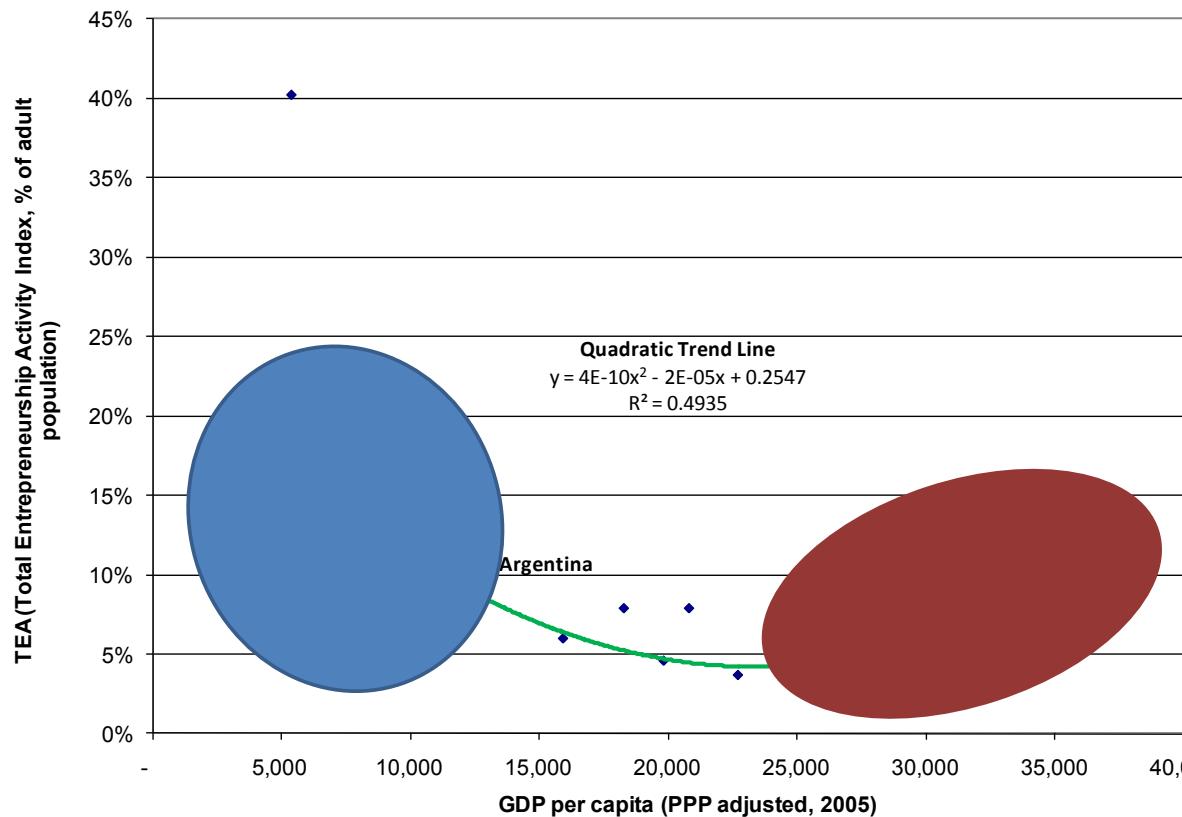
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Figures and Tables

**Figure 1.- Entrepreneurship and GDP:
the “U-shaped” relationship for 42 selected countries (2005-2006).**



Source: Avanzini (2007), Figure 1, based on information from GEM (2006) and World Bank's WDI (2007).

**Table 1.- Prizes to Talent: Nobel Laureates
in Science and Economics (1980 – 2008)**

Countries	Physics	Chemistry	Medicine	Economics	Total (w/o Literature)
USA	32	27	31	27	117
USA (inmigrants)	9	11	8	7	35
United Kingdom	0	4	8	4	16
United Kingdom (inmigrants)	0	1	2	1	4
Germany	6	4	5	1	16
Germany (inmigrants)	4	0	0	0	4
France	2	2	3	1	8
Japan	3	4	1	0	8
Sweden	1	0	4	0	5
Switzerland	2	2	1	0	5
Canada	2	1	0	1	4
The Netherlands	3	1	0	0	4
Other Countries	5	4	4	3	16

Source: Updated from Solimano (2009) based on data available at <http://nobelprize.org>

Table 2.- Prizes to Talent: Nobel Prizes in Literature (1980 – 2008)

Countries	Number of Prizes	Countries	Number of Prizes
United Kingdom (inmigrants)	3	Ireland	1
United Kingdom	2	Italy	1
South Africa	2	Japan	1
Austria	1	Mexico	1
Colombia	1	Nigeria	1
Czechoslovakia	1	Poland	1
Egypt	1	Poland & USA	1
España	1	Portugal	1
France	2	Saint Lucia	1
France (immigrant)	1	Turkey	1
Germany	1	USA	1
Hungary	1	USA (inmigrants)	1

Source: Updated from Solimano (2009) based on data available at <http://nobelprize.org>

Table 3.- Distribution of Talented Elites: Global Creativity Index, 2005.

Rank	Country	Global Creativity Index	Talent Index	Technology Index	Tolerance Index
Top 10 Countries					
1	Sweden	0.808	0.642	0.819	0.964
2	Japan	0.766	0.702	0.785	0.811
3	Finland	0.684	0.728	0.626	0.698
4	United States	0.666	0.601	0.827	0.571
5	Switzerland	0.637	0.541	0.625	0.744
6	Denmark	0.613	0.597	0.385	0.858
7	Iceland	0.612	0.658	0.463	0.717
8	The Netherlands	0.611	0.643	0.366	0.824
9	Norway	0.595	0.686	0.279	0.819
10	Germany	0.577	0.468	0.511	0.753
Developing and Transition Economies					
25	Russian Federation	0.339	0.521	0.112	0.385
27	Ukraine	0.296	0.404	0.103	0.38
33	Uruguay	0.24	0.22	0.021	0.478
36	China	0.23	0.031	0.109	0.55
38	Argentina	0.199	0.193	0.045	0.357
40	Chile	0.185	0.16	0.055	0.339
41	India	0.177	0.085	0.137	0.309
42	Mexico	0.164	0.15	0.043	0.299
43	Brazil	0.159	0.128	0.083	0.266
45	Romania	0.127	0.131	0.035	0.214

Source: Florida (2005).

Table 4.- Distribution of Talented Elites: Global Talent Index, 2007.

Rank	Country	Global Talent Index (score)
Top 10 Countries		
1	United States	52
2	Canada	47
3	The Netherlands	46
4	United Kingdom	46
5	Sweden	45
6	Germany	43
7	Australia	43
8	China	42
9	France	41
10	India	39
Developing and Transition Economies		
8	China	42
10	India	39
17	Argentina	34
18	Russia	33
19	Ukraine	33
21	Mexico	31
23	Brazil	30
24	South Africa	29
25	Egypt	29
27	Nigeria	25

Source: Heidrick and Struggles and the Economist Intelligence Unit (2007).

**Table 5.- Scientific and Technical Production:
Journal Articles, Researchers and Technicians (average 1998-2003)**

Country	Scientific and technical journal articles	Researchers in R&D (per mill. people)	Technicians in R&D (per mill. people)
Top Ten Countries			
United States	200,088	4,556	--
Japan	56,463	5,188	595
United Kingdom	47,931	2,706	--
Germany	43,456	3,134	1,372
France	31,347	2,930	--
Canada	23,178	3,451	709
Italy	21,917	1,168	1,347
China	20,320	537	--
Russian Federation	16,785	3,400	565
Spain	15,281	1,841	663
Other Selected Countries			
India	11,015	119	102
Korea, Rep.	10,229	2,594	510
Brazil	6,814	344	332
Finland	4,915	6,915	3,297
Mexico	3,126	240	97
New Zealand	2,947	3,222	744
Argentina	2,870	706	308
Singapore	2,387	3,920	359
South Africa	2,332	307	73
Chile	1,185	419	298
By Region			
European Monetary Union	146,841	2,461	1,224
Europe & Central Asia	40,022	2,027	385
East Asia & Pacific	22,041	490	--
Latin America & Caribbean	15,491	--	--
South Asia	11,600	119	102
Middle East & North Africa	4,048	--	--
Sub-Saharan Africa	3,770	--	--
World	645,188	--	--
By Income			
High income	548,216	3,667	--
High income: OECD	529,218	3,695	--
High income: nonOECD	18,999	--	--
Low & middle income	96,972	--	--
Middle income	83,802	714	--
Upper middle income	46,057	1,360	318
Lower middle income	37,745	490	--
Low income	13,170	--	--

Source: Own elaboration based on information from the World Bank's WDI (2007).

**Table 6.- Destinations of Foreign Students
studying in OECD Countries by origin (2004)**

Origin	Destination			
	North America	Europe	Asia-Pacific	OECD
Africa	20%	77%	3%	100%
North America	44%	43%	13%	100%
South America	56%	41%	2%	100%
Asia	40%	32%	28%	100%
Europe	16%	81%	3%	100%
Oceania	27%	19%	54%	100%
World	31%	52%	17%	100%

Source: Vincent-Lancrin (2008), Table 4.1.

Table 7.- Applied Talent: Patent Applications (average 1998-2004).

Country / Country Group	Patent Applications, Total		Patent Applications, Nonresidents			Patent Applications, Residents		
	Number of Patents	% of Worldwide Patents	Number of Patents	% of Total Country Patents	% of Worldwide Patents	Number of Patents	% of Total Country Patents	% of Worldwide Patents
Top Ten Countries								
Japan	417,760	32.61%	50,952	12.20%	3.98%	366,808	87.80%	28.64
United States	308,420	24.08%	141,917	46.01%	11.08%	166,503	53.99%	13.00
Korea, Rep.	116,711	9.11%	41,708	35.74%	3.26%	75,003	64.26%	5.86
China	87,052	6.80%	51,786	59.49%	4.04%	35,267	40.51%	2.75
Germany	59,484	4.64%	10,897	18.32%	0.85%	48,587	81.68%	3.79
Canada	37,921	2.96%	33,937	89.49%	2.65%	3,985	10.51%	0.31
United Kingdom	31,326	2.45%	10,897	34.79%	0.85%	20,429	65.21%	1.59
Russian Federation	31,056	2.42%	8,751	28.18%	0.68%	22,305	71.82%	1.74
Australia	28,582	2.23%	20,401	71.38%	1.59%	8,182	28.62%	0.64
France	17,025	1.33%	3,386	19.89%	0.26%	13,639	80.11%	1.06
Other Selected Countries								
Brazil	17,010	1.33%	13,813	81.20%	1.08%	3,197	18.80%	0.23
India	10,597	0.83%	6,434	60.71%	0.50%	4,163	39.29%	0.32
Mexico	10,318	0.81%	9,841	95.38%	0.77%	477	4.62%	0.04
Israel	9,266	0.72%	7,701	83.11%	0.60%	1,565	16.89%	0.12
Singapore	8,699	0.68%	8,217	94.47%	0.64%	481	5.53%	0.04
Argentina	5,602	0.44%	4,772	85.19%	0.37%	830	14.81%	0.06
Indonesia	3,682	0.29%	3,466	94.14%	0.27%	216	5.86%	0.02
Chile	2,966	0.23%	2,744	92.50%	0.21%	223	7.50%	0.02
Netherlands	2,844	0.22%	534	18.77%	0.04%	2,310	81.23%	0.18
Finland	2,554	0.20%	260	10.20%	0.02%	2,293	89.80%	0.18
By Income								
High income	1,075,408	83.95%	348,972	32.45%	27.24%	726,436	67.55%	56.71
High income: OECD	1,048,070	81.82%	323,886	30.90%	25.28%	724,184	69.10%	56.53
High income: nonOECD	27,339	2.13%	25,086	91.76%	1.96%	2,252	8.24%	0.18
Low & middle income	205,543	16.05%	121,514	59.12%	9.49%	84,028	40.88%	6.56
Middle income	193,221	15.08%	114,328	59.17%	8.93%	78,893	40.83%	6.16
Upper middle income	67,258	5.25%	38,274	56.91%	2.99%	28,984	43.09%	2.26
Lower middle income	125,963	9.83%	76,054	60.38%	5.94%	49,909	39.62%	3.90
Low income	12,322	0.96%	7,187	58.32%	0.56%	5,135	41.68%	0.40
World	1,280,951	100.00%	470,487	36.73%	36.73%	810,464	63.27%	63.27

Source: Own elaboration based on information from the World Bank's WDI (2007).

**Table 8.- Intra-company transferees from South America
to the United States (1996-2002).**

Country	1996	1998	2000	2002
Argentina	1,524	2,580	3,764	6,628
Bolivia	42	69	88	173
Brazil	4,175	5,831	8,470	9,562
Chile	590	1,131	1,562	2,096
Colombia	1,128	1,929	4,729	7,692
Ecuador	211	255	496	886
Guyana	17	25	50	82
Paraguay	34	64	90	59
Peru	393	496	929	1,392
Uruguay	139	160	318	537
Venezuela (RB)	2,179	2,775	4,495	7,963
South America	12,428	17,313	26,991	39,072
<i>As % of Total</i>	<i>7.4%</i>	<i>7.5%</i>	<i>8.5%</i>	<i>11.8%</i>

Source: OECD (2004).

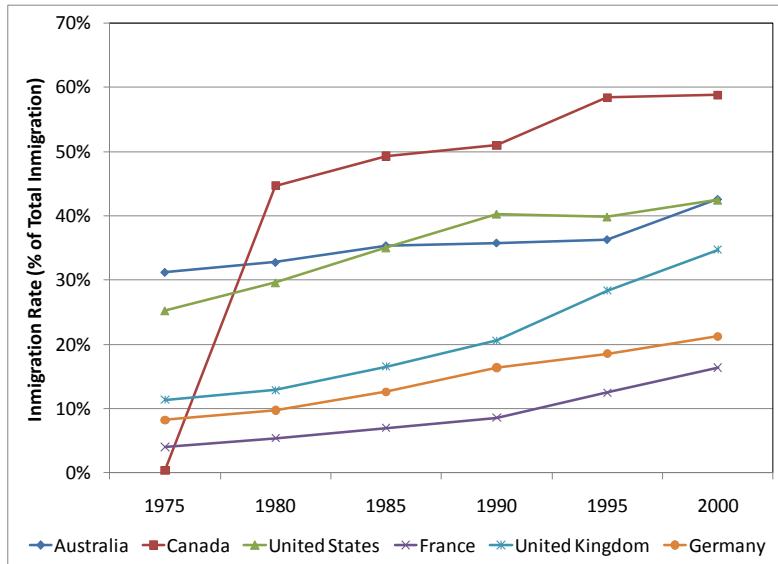
**Table 9.- Government Expenditure in
Research & Development (average 1998-2004)**

Country	Average as % of GDP (1998-2004)	Country Group	Average % of GD (1998-2004)
Top Ten Investors in R&D			
Israel	4.42	World	2.17
Sweden	3.85	By Region	
Finland	3.34	European Monetary Union	1.90
Japan	3.04	East Asia & Pacific	0.99
Iceland	2.76	Europe & Central Asia	0.83
United States	2.68	South Asia	0.70
Switzerland	2.57	Latin America & Caribbean	0.57
Germany	2.48	Middle East & North Africa	N/A
Korea, Rep.	2.46	Sub-Saharan Africa	N/A
Denmark	2.35	By Income	
Other Selected Countries			
France	2.20	High income	2.42
United Kingdom	1.87	High income: OECD	2.43
Russian Federation	1.12	High income: nonOECD	N/A
China	1.08	Low & middle income	0.70
Brazil	0.97	Middle income	0.74
India	0.79	Upper middle income	0.68
South Africa	0.76	Lower middle income	0.77
Chile	0.57	Low income	0.70
Argentina	0.42		
Mexico	0.39		

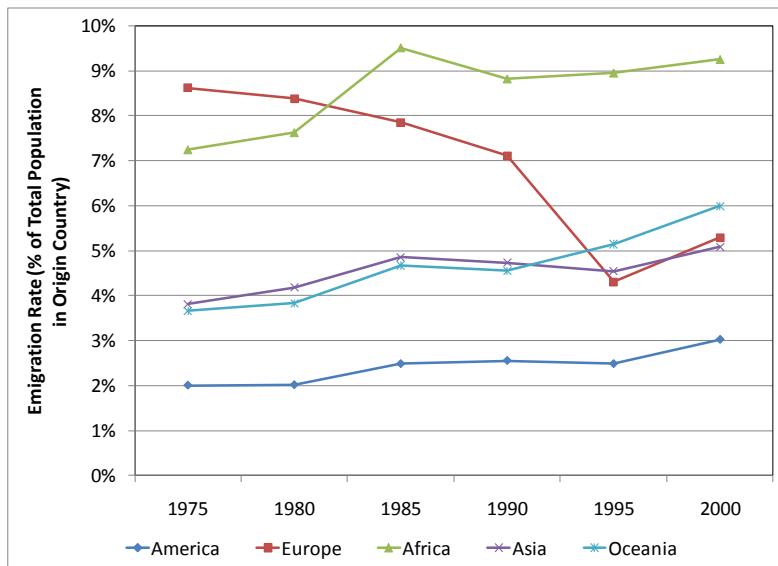
Source: Own elaboration based on information from the World Bank's WDI (2007).

Figure 2.- High-Skilled Migration Rates for Six Selected OECD Countries (1975-2000)

Panel A: Immigration



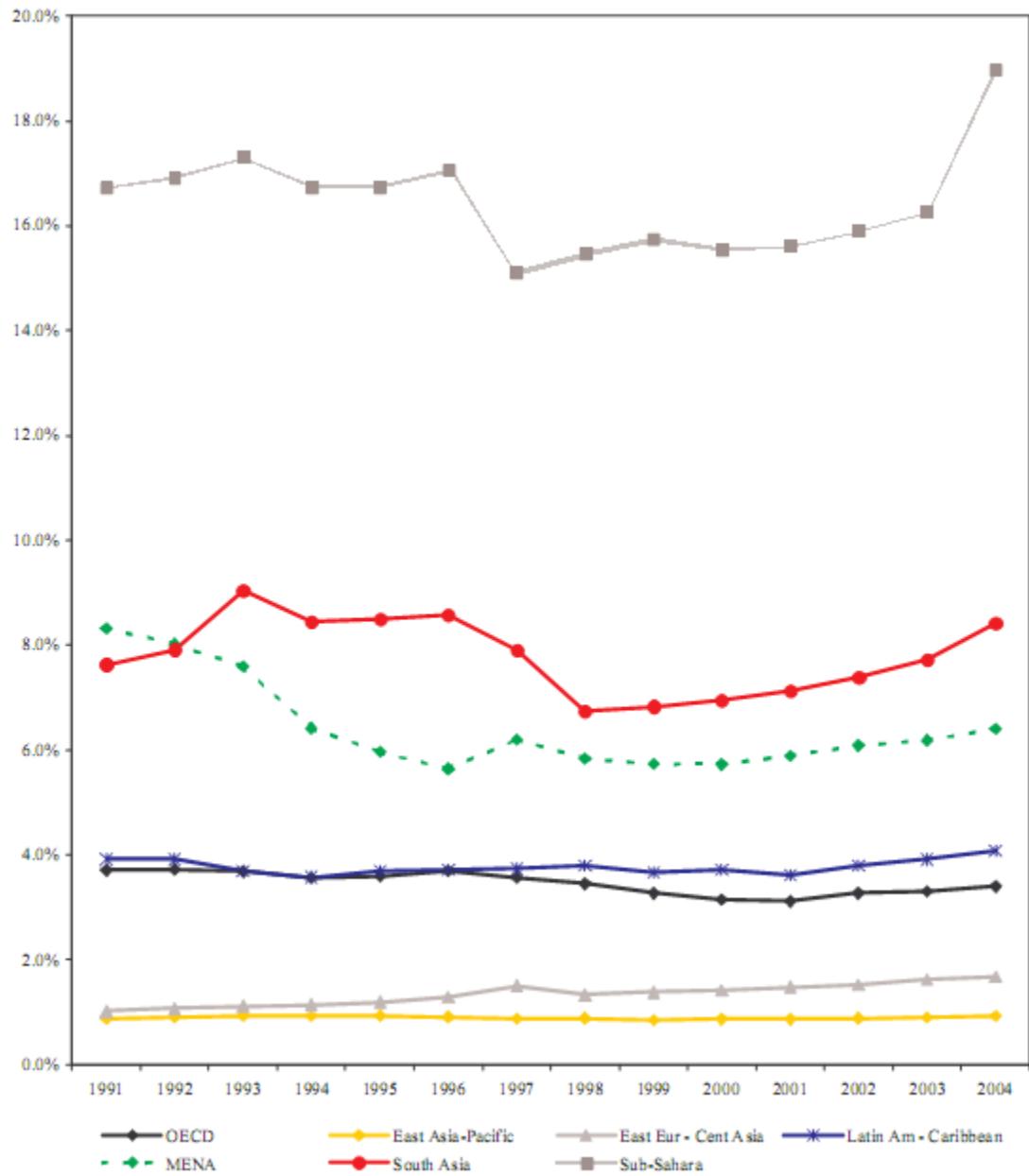
Panel B: Emigration



Source: Defoort (2006), Tables 2 and 3 (country list available in its Annex).

Note: The High-Skilled Immigration Rate corresponds to the proportion of High-Skilled Immigration Stock in Total Immigration for each country. The High-Skilled Emigration Rate is defined as the ratio of the number of high-skilled emigrants aged 25+ to the six major receiving countries in Panel A to the total number of skilled natives aged 25+ (residents + emigrants). High-Skilled workers are those with a post-secondary certificate. Data for 1975 required many interpolations and is less reliable.

Figure 3.- Medical Talent Emigration Rate per Region, 1991-2004.



Source: Docquier and Bhargava (2007), Figure 1 and accompanying dataset.

Note: MENA stands for Middle-East and Northern African Countries. Countries included in each group are described in the same paper.

**Table 10.- Composite Entrepreneurship Indicator:
Attractiveness of countries to develop entrepreneurial activities**

Period 1998-2001

Importance of Dimensions	
1.- Entrepreneurial Activity	10.27%
2.- Employment	13.29%
3.- Economic Activity	9.00%
4.- Entrepreneurship Spirit, Culture, and Initiative	4.81%
5.- Barriers to Entrepreneurial Activity and Business	15.74%
6.- Knowledge Procurement	13.28%
7.- Innovation	33.61%
Total	100.00%

Period 2002-2005

Importance of Dimensions	
1.- Entrepreneurial Activity	6.01%
2.- Employment	22.01%
3.- Economic Activity	13.21%
4.- Entrepreneurship Spirit, Culture, and Initiative	12.42%
5.- Barriers to Entrepreneurial Activity and Business	3.05%
6.- Knowledge Procurement	15.86%
7.- Innovation	27.44%
Total	100.00%

Ranking	Country	Index
Top Ten Countries		
1	Unites States	1.1863
2	Switzerland	0.7991
3	Japan	0.7424
4	Sweden	0.7317
5	China	0.6296
6	Finland	0.5787
7	Germany	0.4533
8	Australia	0.3864
9	Korea, Rep.	0.3720
10	Canada	0.3370
Other Selected Countries		
19	Brazil	0.0477
21	New Zealand	0.0144
24	Argentina	-0.0062
26	Chile	-0.0157
27	Israel	-0.0182
28	India	-0.0232
29	Mexico	-0.0246
34	Singapore	-0.0543
44	Indonesia	-0.1170
49	Russian Federation	-0.1317

Ranking	Country	Index
Top Ten Countries		
1	China	1.1502
2	United States	1.1075
3	Indonesia	1.0372
4	Korea, Rep.	0.4491
5	Japan	0.2922
6	Finland	0.2584
7	Brazil	0.2314
8	Mexico	0.1970
9	Switzerland	0.1790
10	Israel	0.1567
Other Selected Countries		
11	Canada	0.1473
12	Argentina	0.1380
13	Australia	0.1099
17	Sweden	0.0700
19	Russian Federation	0.0643
20	India	0.0226
21	New Zealand	0.0194
56	Singapore	-0.1744
61	Germany	-0.2329
64	Chile	-0.2423

Source: Avanzini (2009). See its Appendix for details.