FGV | PROJETOS DAPP

IMMIGRATION AS A STRATEGIC VECTOR FOR THE SOCIO-ECONOMIC AND INSTITUTIONAL DEVELOPMENT OF BRAZIL

Strategic Studies
of Public Policies

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Headquarters
Praia de Botafogo, 190, Rio de Janeiro – RJ, CEP 22250-900 or Caixa Postal 62.591
CEP 22257-970, Tel: (21) 3799-5498, www.fgv.br

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PRESENTATION

Brazil has demonstrated resilience in relation to the recent economic crises and has an auspicious development potential projected for the coming decades, which, linked to the globalization process, provides important opportunities for our people. Gradually we have established ourselves as one of the leading nations in the world and we have become a reference in questions linked to economic equilibrium, development, energy, agriculture and the environment. This international recognition favors the exchange of experiences with other cultures, governments and organizations, bringing with it the possibility of stimulating a dynamic process of development and innovation.

Among the various factors necessary for this potential to be achieved, we have to strengthen our capacity to create, attract and retain highly skilled professionals. This is one of the principal determinants of success of countries in terms of their social and economic development, through innovation and technological advances in areas which impact on productive chains in strategic industries.

Effective policies for attracting and retaining skilled professionals can stimulate development in the area of Science, Technology and Innovation (CT&I), contributing to the dynamism of the economy. Immigration policies should, thus, be linked to analyses of skill deficits in the Brazilian labor market, in accordance with short, mid and long term strategic perspectives.

The preparation of public policies concerned with administrating a mobility system is one of the great challenges we will face in the coming decades. Immigration has to be recognized as a vector of development for human capital. To prepare efficient policies to administer immigration, institutional integration has to be expanded and effective tools have to be created for coordination, the alignment of information flows, data collection and analysis and the construction of consensus.

One of the pillars of FGV Foundation is the mission to contribute in an efficient form to innovation and the modernization of Brazilian institutions, based on strong standards of excellence and quality. As a form of expanding debate in this area, FGV Foundation, an institution committed to development for almost 70 years, is publishing Immigration as a Strategic Vector for the Socio-Economic and Institutional Development of Brazil. The launch of this publication, the first in a series of strategic studies of public policies, the fruit of a partnership which brings together the technical and empirical knowledge accumulated by FGV Projetos with the applied research of the Directorate of Public Policies Analysis (DAPP), highlights the importance of association between research and the application of knowledge to propose fundamental tasks for the national public agenda.

Cesar Cunha Campos
Director, FGV Projetos

Marco Aurélio Ruediger
Director of Public Policies Analysis, FGV Foundation

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EXECUTIVE SUMMARY

This report demonstrates that in Brazil at present there is an urgent need for public policies aimed at the attraction and retention of highly qualified professionals in areas that are strategic for national socio-economic policy. This does not involve seeking to increase of competition for workers in the Brazilian labor market, but to the contrary, promoting the development of strategic industries and advances in the area of science, technology and innovation (ST&I), recognizing immigration as a vector of development for human capital.

It is fundamental that public policies aimed at attracting highly qualified immigrants as a form of promoting socio-economic development take into consideration other important axes of immigration policy, such as the analysis of factors which condition migratory flows, the need to guarantee human rights and the integration of migratory populations, and the imperative for the maintenance of national security. These policies should also take into account economic, social and political impacts, from the point of view of the populations from the countries of origin and the destination countries, as well as the migratory populations themselves, in order to contribute to responsible political action.

The capacity to create, attract, and retain talents in accordance with a national development strategy is one of the principal factors which determines the success of countries, in terms of their social and economic development in the contemporary world. Most developed countries have specific policies aimed at the attraction and retention of highly skilled professionals in the international market. With the recent increase in governmental investment in education and the development of advanced research in Brazil, the country risks suffering the growth of the so-called brain drain. Moreover, Brazil is now going through a process of demographic transition and needs, in the space of a generation, to promote a process of exponential increase in its indices of productivity. The scarcity of human resources is one of the principal bottlenecks which threatens the economic development of the BRIC countries (Brazil, Russia, India and China). In Brazil specifically, the results of the lack of proper investment in education in recent decades are now appearing, since investment in education has an incremental nature and takes time to produce results. The attraction of highly skilled immigrants can allow the deficit of proper investment in the past to be overcome, so that better advantage can be taken of the 'demographic bonus.'

Due to the recent Brazilian resilience to the cycle of global crises which began in 2008, the country has become an increasingly more attractive destination for migrants, which constitutes an unequalled opportunity to attract talents in the international market. Brazil has received an increasing quantity of immigrants with average levels of skills. Although this has increased the critical mass of the country and generated benefits for some industries, in some cases scarce positions are disputed with Brazilian labor. Nevertheless, as we will see, there are still very few highly skilled immigrants, apt to occupy positions for which there are no Brazilian workers and in this way to accelerate the development of new industries.

Brazil should, thus, create policies concerned with immigration linked with national geopolitical and commercial strategies, since migratory flows produce significant ties and can improve relations between nations. However, for these policies to be successful, it is fundamental that institutional integration be expanded and effective tools are created for coordination, the alignment of information flows, the collection and analysis of data and the construction of consensus. In summary, it is necessary to break with the verticalization of bureaucratic structures and the narrow focus on the limits of jurisdiction of the different ministries and bodies involvement in the national policy of the monitoring, administration and control of immigrants. In fact, Brazil could benefit from the creation of a specific agency, capable of catalyzing initiatives, articulating the multiple institutional actors involved in immigration administration, and contributing to achieving its strategic visions.

The set of reflections developed in this study allows us establish some directives which should guide the preparation of rational, systemic, and well grounded public policies, aimed at the attraction of skilled immigrants as a vector for the socio-economic development of the country. These are:

- Be based on the analysis of the conditioning factors of migratory flows and the projection of the impacts of migrations.
- Consider the perspectives of the populations of countries of origin, of Brazilian society and the migrant population to achieve responsible policies.
- Guarantee the human rights of the immigrant population.
- Harmoniously integrate immigrants in Brazilian society.
- Protect Brazilian workers.
- Ensure the maintenance of national security.
- Consider demographic development, as well as economic cycles and tendencies.
- Ensure socio-economic development at the national, regional and local levels.
- Overcome skill deficits in the Brazilian labor market.
- Complement the national development strategy in the area of Science, Technology and Innovation (ST&I).
- Be connected with the stimulation of the innovative business sector and the strengthening of entrepreneurialism.
- Seek to contribute to an increase in productivity and to contribute to the aggregate value of the production of industries based in Brazil.
- Contribute to the development of commercial partnerships at the international level.
- Integrate with geopolitical strategy, taking into account negotiations carried out with multilateral agencies.
- Involve civil society through a wide-ranging public debate.
- Create faster means, with less bureaucracy, to regularize the situation of highly skilled immigrants.
- Integrate the various state agencies concerned with immigration policy and provide means for the negotiation of consensus.
- Provide effective tools for coordination, the alignment of information flows, and the accumulation, cross-tabulation and analysis of data.
- Provide institutional means for effective administration, through the creation of an immigration agency with multiple jurisdictions, integrating and institutionally strengthening existing state structures.

I

INTRODUCTION

With the constant reduction in the costs of transport and with the emergence and popularization of new telecommunications technologies, the phenomenon of globalization has resulted in a significant increase in mobility at the international level. An intensification of the trans-frontier circulation of people can be noted, as well as wide-ranging diversification in migratory corridors. Ban Ki-moon, Secretary-General of the United Nations (UN), argues that we are entering an 'era of mobility:'

> *"[...] when people will cross borders in ever greater numbers in pursuit of opportunity and a better life. They have the potential to chip away at the vast inequalities that characterise our time, and accelerate progress throughout the developing world."*[1]

The so-called 'era of mobility' is characterized by an important transformation in daily experience, which provides the foundations for concepts such as 'social group' and 'national frontier.' In this context, national frontiers, more than mere geographical limits of the territory of a given nation state, have been increasingly perceived as selective mechanisms for controlling the flow of people, goods, services, capital and information, i.e., as the conditions of permeability which define the constitution of collectivities, based on the initial conditions given by different historic-cultural matrices and political projects from different countries within the concerto of nations. Moreover, with the advance of information and communication technology among different social groups, communities of interest have emerged, connected in networks which go beyond geographic, political and legal boundaries.

In the age of mobility, nation states are faced with renewed challenges and opportunities. It is fundamental to understand the various factors which impel individuals to migrate and the multiple impacts of migrations, taking into account the complexity created by the coexistence between a global economy that is increasingly integrated and interdependent, and a space of international relations still strongly marked by differences in relation to political regime, governmental instruments, and the diacritical cultural traits which define the mechanisms of sociability and the identity of peoples. According to the assumption of canonic studies of migrations, what have to be taken into account are endogenous conditions, i.e., problems which push the migrant out of his country of origin, and exogenous condition, such as incentives and attraction, whether intentional of not, which are offered by the destination country. Among the principal endogenous motivations are political conflicts and oppression, economic crises, environmental catastrophes, fleeing from obligations or legal and/or fiscal punishments, ethnic or religious persecutions, etc. In relation to the exogenous motivations, we can cite opportunities in the labor market, wage differentials, education opportunities, a search for a better quality of life, matrimonial alliances, and even environmental attractions, such as climate and landscape. What has to be considered is not just the benefits, but also the costs which migration incurs. Among these we can cite some tangible costs, such as transport costs, or bureaucracy, the abandonment of properties and the selling of material goods, and intangible costs, which are sometimes more relevant, such as the separation of relatives, difficulties in adapting to new cultures and integration in dissimilar societies. It is fundamental that we take into consideration the way in which the period of social and paradigmatic changes, such as those generated by important technological changes (especially in

the area of telecommunications and transport), which we are currently experiencing, involves alterations in the perception of the costs and benefits involved in the decision to emigrate.[2]

Saskia Sassen was one of the first to argue that it was necessary to identify the processes which transform the factors that condition migrations as a requirement for the creation of mechanisms to allow migratory flows to be taken advantage of as a vector for socio-economic development.[3] As a result of the restructuring of the global economy, the circulation of workers should increasingly be considered according to their inter-relations with the circulation of capital, services, information, etc. According to Sasaki and Assis, foreign investment, for example, has become a fundamental variable for understanding international migratory flows.[4] At present in most countries in the so-called developed world there exist public policies specifically aimed at the regulation of migratory flows and, in a stricter sense, for attracting immigrants with determined qualification profiles. The objective of the establishment of specific categories of entry authorization is to favor the entrance of immigrants with certain intellectual, technical, and/or professional profiles, in accordance with each country's development strategy and their needs in their respective labor markets.[5]

The international attraction of talent, central in this analysis, is associated with the phenomenon of the exodus of highly skilled individuals from countries which in some form pay for the costs of their education. We know that some Brazilians with high professional and educational qualifications emigrate not only due to the existence of attractions, such as better opportunities for salaries, quality of life, or the solidity of research institutions, but also due to the existence of assertive and institutionalized public policies aimed at regularizing the legal permanence of highly skilled immigrants in the countries which receive them. It has to be kept in mind that developed nations methodically observe this type of policy, which are used in a more or less extensive form in accordance with their strategic interests. In this case, what is at stake is not only knowing whether Brazil needs to revise its current policy, but also to highlight institutional arrangements necessary to allow the implementation of an immigration management policy, whatever it may be.

Due to the growing importance of Brazil in the global economic scenario, and given the mechanisms used in other developed countries for attracting skilled foreign professionals, it can be noted that there is a lack of strategic focus orienting Brazilian migration policy so as to take advantage of its new status in international political and economic strategy. In fact, the growing attractiveness of the Brazilian economy, added to the lack of skilled labor in various sectors in the country's economy, indicates that there is need for an urgent formulation of a set of public policies aimed at attracting qualified immigrants, especially if we take into account the enormous effort that the federal government has been making to increase scientific and intellectual production, technical qualification and the country's technological potential.

According to George Firmeza, the debate about migration, whether in the sphere of international bodies, public agencies or academia, is centered on four large thematic axes.[6] The first is concerned with understanding the causes of migrations. The second consists of understanding ways of guaranteeing human rights for migrant populations. The third deals with the debate about whether or not to include irregular migrations in the perspective of national security. Finally, the fourth axis focuses on the evaluation of the possible effects of migrations on the economic and social development of countries.

The aim of this study is to frontally approach one of the dimensions of the fourth axis, namely the attraction of qualified immigrants as a vector for national development, without, however, losing sight of the perspectives of the other three axes which precede this. Good immigration administration, responsibly done, must take into account the possible benefits and costs in play for the population of immigrants countries of origin, for Brazilian society which receives them, and for the migrants themselves.

To present our argument, this publication is divided into three parts. After the brief conceptualization presented in this Introduction, Part Two, Development, is divided into seven subsections. In subsection 2.1, we show the need for public policies dealing with immigration through a brief contextualization of the phenomenon of migration in the contemporary world, indicating the growing relevance of its impacts; in subsection 2.2, we are concerned with conceptualizing the phenomenon of 'brain drain' through the presentation of a brief panorama about public policies concerned with the dispute for talent in the international market; in subsection 2.3, we show the need to implement public immigration policies qualified in Brazil through the analysis of

demographic aspects, observing a singular historic opportunity to adopt a strategic position; in subsection 2.4 we establish which problems related to human capital are among the principal development bottlenecks for countries from the BRIC group (Brazil, Russia, India and China), showing the historic deficit of investment and proper administration of the education system in Brazil; in subsection 2.5 we seek to introduce emergent perspectives which allow us to look at how to use research on immigration as a contribution for the preparation of public policies, as well as presenting in a descriptive manner the profile of the immigrant population in Brazil; in subsection 2.6, we make a brief analysis of unemployment among European countries, with the objective of highlighting the existence of skilled labor apt to be attracted to Brazil; in subsection 2.7 we draw a map of Brazilian governmental institutions and a tree of the macro-processes involved in the implementation and administration of immigration policy in Brazil. Finally, in the Conclusion we highlight some innovation in public immigration policies, in order to provide institutional means to achieve effectiveness in the strategic administration of immigrant workers.

II
DEVELOPMENT

2.1 THE PHENOMENON OF IMMIGRATION IN THE CONTEMPORARY WORLD: INTERDEPENDENCE, CONTROL AND IMPACT

SUMMARY

- Global interdependence, which characterizes contemporaneity, contributes to the increase and the diversification of migratory flows.
- Most developed countries have selective policies and control for the regulation of immigration.
- It is necessary to understand the different factors which condition migrations to anticipate its impacts and to prepare adequate policies.
- The alteration of migratory flows, especially in periods of crisis, presents important economic, social and political impacts, both for countries of origin, and for migrants' destination countries.
- Effective mechanisms are fundamental to monitor and control the entrance and departure of foreigners, such as analyses and projections about the impact of immigrations, as a necessary foundation for the preparation of any immigration management.

According to the 2009 report of the United Nations Program for Development (PNUD), in 2005 there existed 195 million migrants in the world, amounting to about 3% of the world population. In 2010 this rose to 214 million, among whom 128 millions had as receiver countries were the so-called developed countries.[7]

The contemporary economic system is characterized by a growing interdependence among the markets of different countries. In fact, in the world at the present there are no countries capable of reaching desirable levels of socio-economic development without dealing in some form with numerous exchanges with other nations. The economic connections between countries constitute an important conditioning factor for migratory flows. According to Patarra, the recent globalization process brought with it the growth of a liberalizing ideology, which propelled the flexibilization of national barriers to the circulation of capitals and merchandise.[8] Martine observes that liberalization incentives have not impacted on the barriers which restrict the circulation of people between countries, with the exception of countries belonging to integrated blocs, such as the European Union, and more recently – and only partially – the Common Market of the South (Mercosul).[9]

According to the 2011 annual study of the Organization for Economic Cooperation and Development (OECD), an increase in the vulnerability of immigrants has been observed, as well as a growing hostility on the part of the population of receiving countries, focusing on immigrants with low skills and belonging to cultures or ethnicities

different from those which predominate in destination countries.[10] Increased human mobility does not appear to be a process free of contradictions or conflicts, while the continuous intensification of international migratory flows has been accompanied by the intensification of the establishment of physical barriers (walls and fences) by the creation of restrictive or selective policies on the part of the countries which receive large influxes of immigrants. According to United Nations data, the percentage of developed countries whose governments adopted restrictive immigration policies grew continually from the end of the 1990s, rising from 18% in 1976, to 38% in 1986, reaching 60% in 1996. Nevertheless, with the ageing of the population of some developed countries in Europe, an important reduction in this figure was noted, which fell to 33% in 2003. As a result of the fateful events of 2001, involving the terrorist attack on the twin towers of the World Trade Center in New York, immigration policies have strongly returned to strengthening control and security structures. In fact, an apparent contradiction could be involved in the developed world with increased freedom for the international circulation of information, goods, services and capital, accompanied by attempts to restrict the circulation of people.[11]

Attempts to restrict the flow of people have to be seen in broad manner, as global interdependence does not just occur among markets. Increasingly there is also an interconnection between areas of conflict – poppy farmers in Afghanistan and heroin users in the large American metropoles, hunger in the Horn of Africa and African immigration in Western European countries, terrorist attacks and the growth of religious intolerance, etc. We live in a world in which political tensions, ethnic conflicts, economic crises and environmental catastrophes in one part of the planet generate intense migratory pressures and reactive restrictions in others. According to a IMO (International Migration Organization) report, the drafting of public policies dealing with migration now occurs in a very complex context, with the increased dependence of national economies on migrant workers, and the parallel growth of the attention paid to the links between migratory flows and questions related to the maintenance of national security:

> *"[...] In other words, migration impacts are likely to have wider ramifications than before, and it is more important than ever that migration policies are sensitive to the wider political, economic and social context for international migration."*[12]

More especially, mutual impacts and connections between the cycles of economic crises and migratory flows have to be understood. According to the IMO report:

> *"The 2008–2009 economic crisis, as well as prior episodes of recession, drew attention to the multiple impacts on migrants, countries of origin and countries of destination, including on return, remittances transfers, unemployment among migrant workers, and public attitudes towards migrants. While migrant workers in certain, more cyclical sectors of the economy were hit hardest, there is evidence that other sectors have remained relatively unscathed, or have flourished during the crisis. Periods of "boom and bust" will continue to punctuate national and global economic activity and policymakers are struggling with the question if and how migration flows can be managed in relation to such cycles. Some of the main challenges concern the uncertainty of short- and medium-term labour market projections, the return of migrants to home countries during times of economic difficulty, and the time lag between economic recession or recovery and any reaction in migration flows. This session will provide an opportunity to analyse how different governments have adjusted their migration policies in response to the recent crisis, with a view to extracting lessons for the future.*[13]*"*

The table below, produced by the IOM, presents a simplified typology to identify the principal negative impacts in economic, social and political terms, especially in periods of crisis, to be taken into account by countries which send or receive migrants.

Table 2.1.1

Typology of negative impacts of migrations, based on alterations caused by previous financial crises

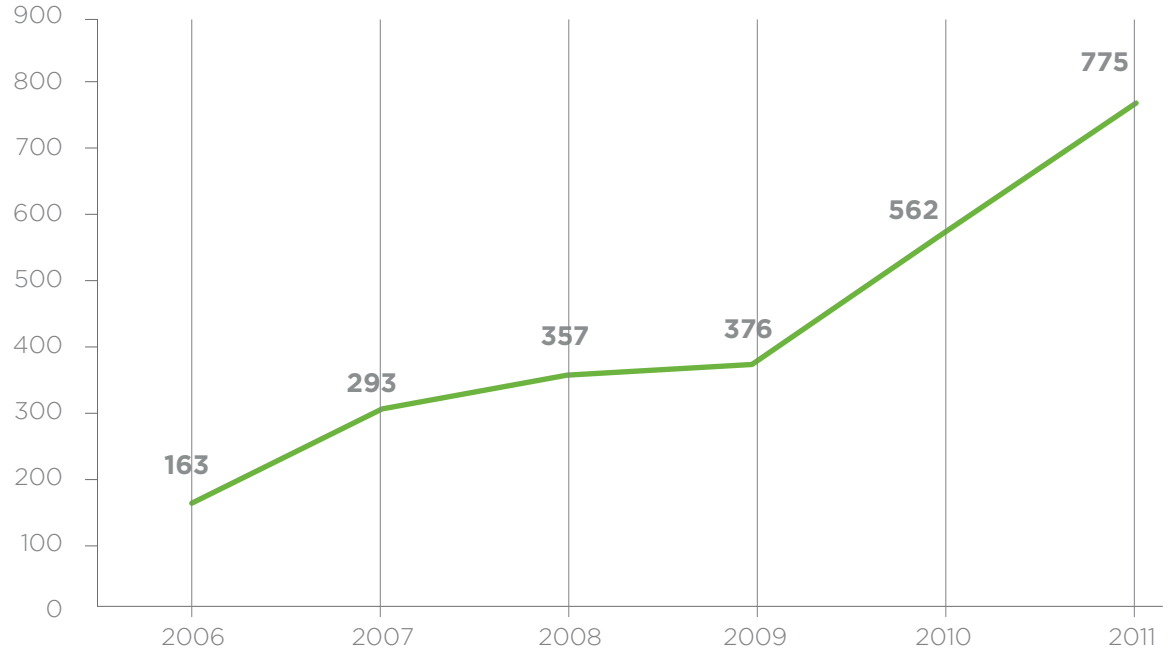
Impacts	Countries which send emigrants	Countries which receive immigrants
Economic	• Increase in unemployment as the result of a loss of foreign placements for national workers (Philippines). • Crease of unemployment as a result of the returning workers (Bangladesh, Indonesia, Thailand). • 'Brain drain' (Argentina, Russia). • Reduction in remittances (Asia, America).	• Increase in competition between migrant workers and nationals. • Increase in irregular immigration (Korea, Malaysia). • Loss of highly skilled expatriates (Indonesia). • Reduction in number of foreign students (United Kingdom).
Social	• Growing role of 'intermediaries' and migration agents (Indonesia, Thailand).	• Increased rates of employment among women (USA). • Exploitation of migrant workers (USA, Malaysia, Thailand) • Appearance of new ethnic minorities in the long term (Western Europe).
Political	• Weakening of the control of central government over population distribution (Russia). • Social agitation resulting from the return of urban unemployed to rural areas (Thailand).	• Increase in xenophobia, anti-Semitism and popular vigilantism. (Canada, France, USA, Indonesia,Thailand). • Increase in irregular migratory flows (Western Europe, Russia). • Political mobilization of ethnic communities (USA).

Source: IOM, 2009, p.19.

According to the OECD, large-scale transitions between political regimes need to be taken into account. Generally these are accompanied by violent events, as an important conditioning factor of migratory flows. Even the democratic transition processes can often result in an increase in emigration, as a result for the fear created by suppression attempts and reactionary movements which accompany the transition.[14] A good example of the influence of political events on migratory flows appears to be the increase in the immigration of Venezuelans to Brazil. Figure 2.1.1 demonstrates the continuous increase in the number of visas granted to Venezuelan workers in Brazil from 2006 onwards. Even though we cannot guarantee the causal connection in a strict way, it is probable that this increase has an important relationship with accumulated political tension and with the numerous conflicts which followed the 2006 presidential elections.[15] In addition, it should also be mentioned that the oil economy in Brazil began at the same time that many of the professionals linked to the area in Venezuela began to emigrate.[16] This industry attracts skilled labor and there are skilled labor deficits in Brazil, concurring to the attraction of temporary workers from other countries. Nonetheless, Brazil is not among the principal destinations of migrants from Venezuela.

Figure 2.1.1

Historic series of number of visas granted by the Brazilian government to immigrant Venezuelan workers, 2006-2011



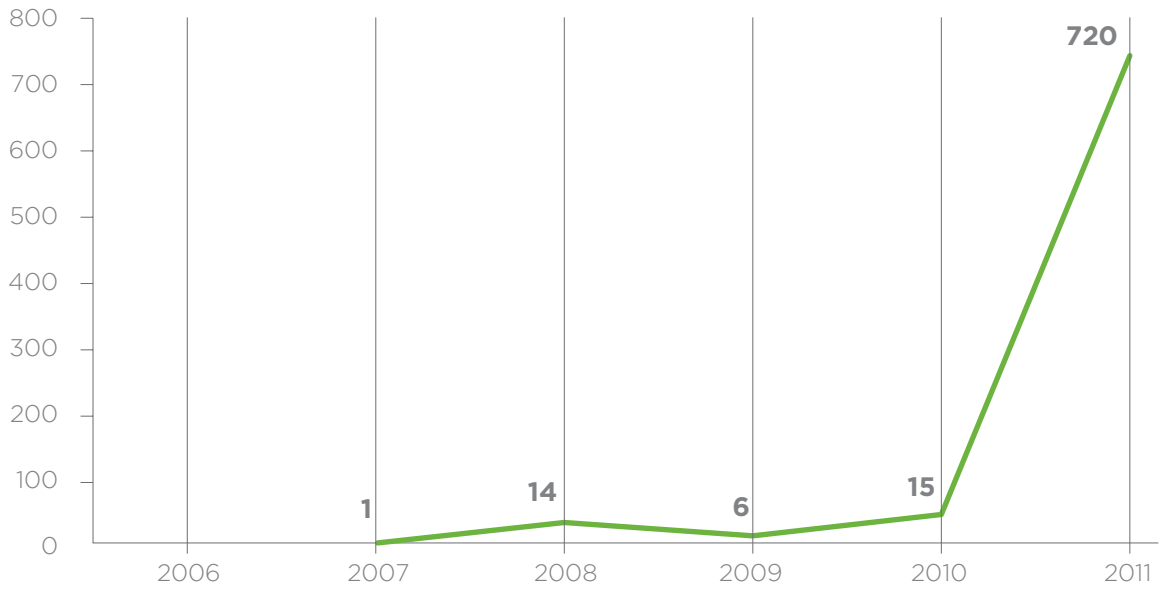
Source: DAPP/FGV based on MTE data.

In addition to pointing to the growing global interdependence as a conditioning factor of migratory flows, the 2011 OECD study also suggests that environmental factors have presented a growing role in population movements. The idea proposed is that the volume of dislocated people can increase at the same rate that environmental changes occur, and in particular, in relation to the changes supposedly induced by global warming, because the means of human subsistence are dependent on the stability of local eco-systems. Natural disasters have a significant impact on migratory flows, not just because of the direct destruction of the means of subsistence, but also to the extent that they provoke the destructuring of economic systems. Starvation in the Horn of Africa illustrates this phenomenon, and is

one of the principal determinant factors of international migration. In 2010 more than two million people affected by natural disasters were assisted by the UN High Commission for Refugees (UNHCR).[17] One example of the influence of environmental disasters on migratory flows was the increase of the immigration of Haitian workers in Brazil after 2010. Figure 2.1.2 demonstrates the abrupt increase in the number of visas granted to Haitian immigrants after 2010, when an enormous earthquake (seven on the Richter Scale) devastated the country. Also important is the fact that Brazil leads the UN mission in Haiti, MINUSTAH, and had an important role in efforts to rebuild the country.

Figure 2.1.2

Historic series of the number of visas granted by the Brazilian government to immigrant Haitian workers, 2006-2011



Source: DAPP/FGV based on MTE data.

A striking fact about contemporary migrations is that, to the contrary of what we might imagine, the majority of migrants from Southern hemisphere countries moved to other countries in the Southern hemisphere. According to a 2005 estimate, 58.4 million migrants from developing countries (55%) moved to other developing countries, as opposed to 55.9 million (48%), who moved to developed countries, and only 1.5 million (1,3%) who migrated to countries with economies in transition.[18] It is thus fundamental to consider the impacts of migrations on developing countries, both in the condition as being countries of origin, and as destination countries for migrants.

Any public policy concerned with immigration has to take into account economic, social and political impacts from the perspective of the population of the countries of origin and the destination countries, as well as the perspective of migrant populations themselves.[19] Moreover, even though we are looking at immigration policies in relation to their role in attracting skilled immigrants for the purposes of national socio-economic development, it is important to highlight once again the need not to lose sight of issues such as guaranteeing human rights, the harmonious integration of immigrant populations, and the maintenance of national security. It is fundamental that there be effective mechanisms to monitor and control the entrance and departure of foreigners, as well as analyses and projections about the impacts of immigration, as a necessary foundation for drafting any immigration administration policies.

2.2 MIGRATIONS PUBLIC POLICIES AND THE BRAIN DRAIN

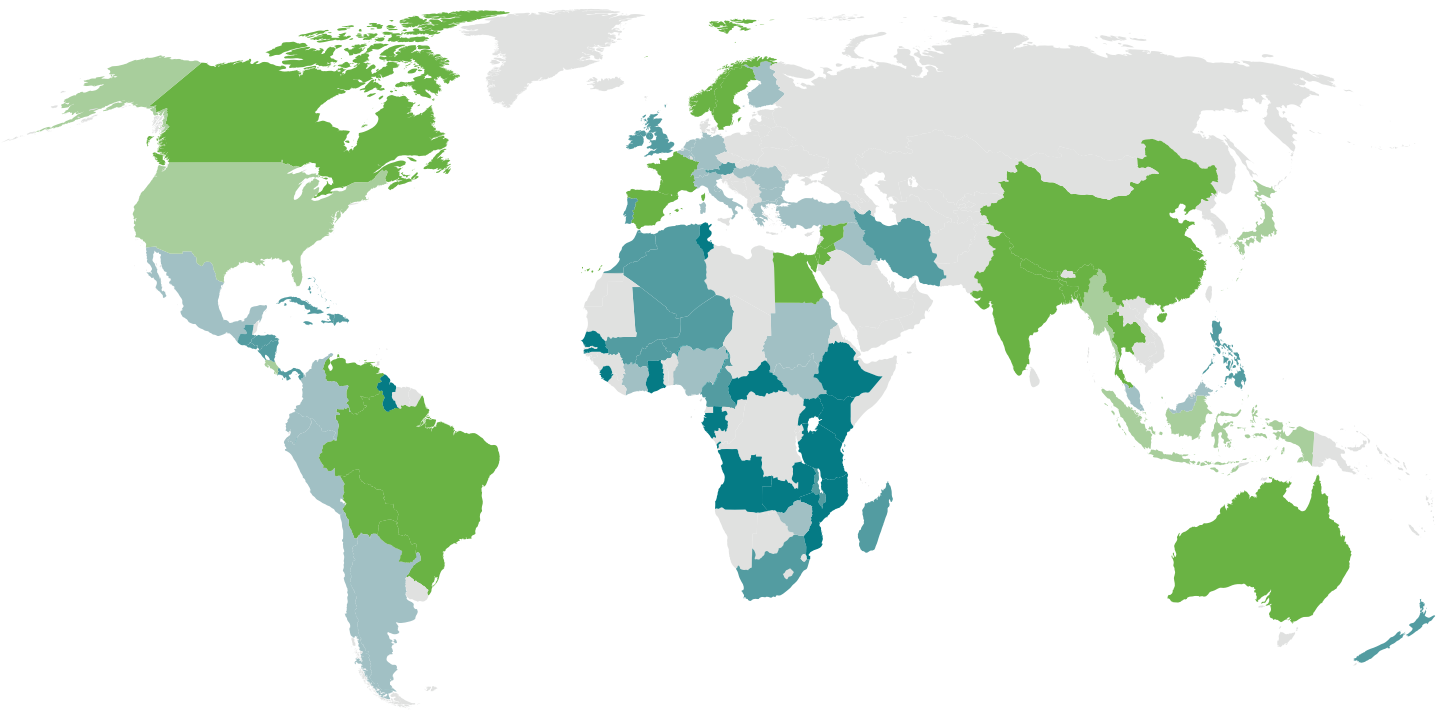
SUMMARY

- There is growing demand and competition for talent in the international labor market.
- In Brazil there is an effective risk, represented by the 'brain drain, which needs to be undermined by the drafting of efficient public policies, with the objective of creating, attracting and guaranteeing the permanence of highly skilled labor.
- The capacity to create, attract and retain talent, in accordance with a national development strategy, with the aim of increasing productivity and increasing the valve of national production through innovation processes, is one of the principal factors which determines the success of a country in the contemporary world.
- Brazil now has relatively balanced flows of the entrance and departure of highly skilled people, a fact that facilitates the construction of social networks and the transfer of technology.
- While Brazil currently enjoys exceptional conditions to draft public policies to attract skilled immigrants, there is a very high risk associated with political inertia in relation to the question, since the country does not have a sufficient amount of highly skilled professionals, taking into account the need to maintain and strengthen its social welfare structure.
- Throughout the world, the demand for foreign workers principally occurs at the two extremes of professional qualification, highly and poorly skilled immigrants. In Brazil there is a prevalence and tendency to increase the number of iimmigrants with average qualifications, in other words, those with between 9 and 15 years of study.
- Given this scenario, the government of Brazil has to assume a strategic position and to prepare effective policies to attract and retain skilled immigrants, especially in areas that are strategic for national development, and in which there is a lack of professionals with adequate skills.

There is growing demand and competition for talent in the international labor market. Due to this demand a public policy problem has emerged, namely how to attract and guarantee the permanence of highly skilled labor in Brazil. According to the Independent Commission on Migration to Germany: "Global competition for the 'best brains' has developed, propelled by the greater willingness of these people to move."[20] Figure 2.2.1 presents a map in which there appears the proportion of inhabitants with university degrees in the different countries (both OECD members and non-members) who migrated to OECD member states. It can thus be seen that several African countries 'export' more than 20% of their inhabitants with university degrees to OECD member states alone. The phenomenon of the flight of talent also occurs to a significant extent in the East of Asia and in Latin America.

Figure 2.2.1

Map showing percentage of professionals who have completed third level education and emigrated from their countries of origin (both OECD members and non-members) to OECD member states, 2011



Source: OECD, 2011.

PERCENTAGE OF CITIZENS WITH UNIVERSITY EDUCATION WHO LIVE IN OECD COUNTRIES

- 1) Less than 2%
- 2) Less than 5%
- 3) Less than 10%
- 4) Less than 20%
- 5) More than 20%
- Not included

According to Goza, from 1996 to 2006 the emigration of skilled Brazilians to the United States increased by 185%. Also according to the data collected by this author, from 1990 to 2000 the proportion of Brazilians who had completed third level education living in Europe, Asia and North America increased by 94.11%. According to Accioly, this data principally refers to professionals who have already graduated and who qualified in Brazil, or who graduated abroad, returned to Brazil and emigrated later.[21] This information needs to be broken down in order not only to count university graduates, but also technicians in strategic areas and researchers with advanced scientific qualifications, different skill profiles, and the effective impact of the departure of these people.

To refine our analysis, it is necessary to comprehend key concepts used in the literature about policies for attracting skilled immigrants, such as: brain drain, brain waste, brain gain, and brain circulation. However, more than anything, it is necessary to precisely define the concept of highly skilled labor. According to Accioly (2009):

> *"[...] High Skilled workers are considered to be individuals with education of at least 16 years. In other words, a complete graduation which includes various professionals with bachelor's degrees: scientists, administrators, accountants, engineers, amongst others. While Less Skilled workers are those with educations of less than 16 years, which can include occupations with very heterogeneous levels of education, including technicians, police officers, treasurers, and secretaries, or waiters, salespersons, mechanics and drivers, even building workers[22]."*

In this paper we use three categories for foreign labor, based on the education of the worker and the date of reference when the work visa was issued by the Ministry of Labor and Employment (Ministry of Labor and Employment), namely: low level of education, covering foreign workers with up to eight years of study, or who at the most have completed fundamental education; average level of education, for foreign workers with 9 - 15 years of study, or from those who have incomplete second level to those who have started a post-graduate course; and high level of education, indicating foreign workers who have 16 years of study or more, in other words from a complete post-graduate course to those who are studying for or have completed a masters degree or doctorate. A special focus was created to identify foreign workers with very high levels of education, considered those with 17 years of study or more. In the analyses in which we used data from the 2010 Census, three categories were created to capture the skill profiles of immigrants in Brazil, based on the highest academic qualifications acquired by the immigrant, namely not-graduated, graduates, and masters/doctors. Although it is useful for the purposes of this study, this construct is based on simplified evidence, since some of the most disputed professionals in the international market need only technical knowledge, and do not depend on a third level education, such as information and communication technology (ICT) technicians and welders for the shipbuilding industry.

The expression brain drain[23] was coined by the Royal Society to describe the flow of scientists and technicians to the US from the 1920s onwards.[24] After policies aimed at attracting skilled labor were implemented in various developed countries, the term came to be widely related to the departure of professionals with high academic qualifications from developing countries for the more developed countries. For the `brain drain` concept to be applied, the amount of migrants has to be large enough for there to occur negative impacts on the economy of the country of origin.

> *"The occurrence of this phenomenon is generally related to negative consequences for migrants' countries of origin – especially in developing countries –, as it results in the loss of productive capacity, innovative capacity and scientific weakness."*[25]

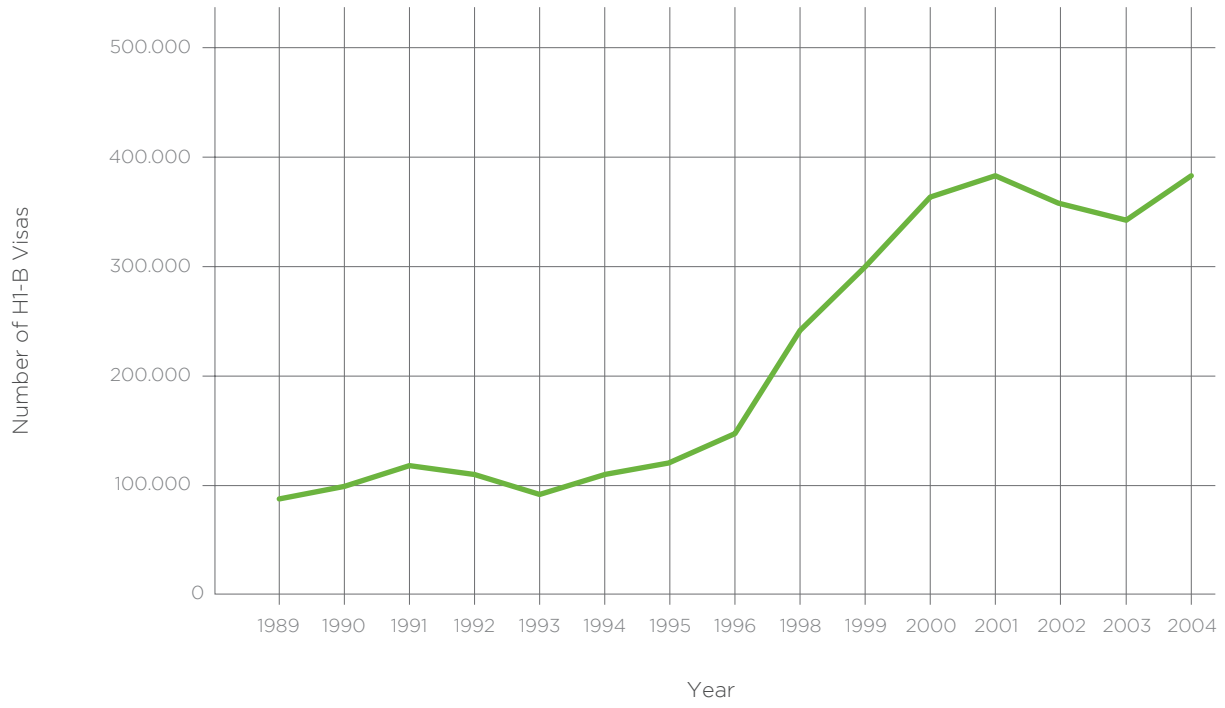
In a recent debate, Dr. Michiu Kaku, a theoretical physicist famous for being the co-author of string field theory, created controversy when he stated in a public debate, that Visa H-1B, granted by the American government with the purpose of the temporary hiring of foreigners with great knowledge in determined areas of specialty, is the 'secret weapon' of the US educational system, without which the US economy would be at risk of collapsing since the scientific production of researchers with a foreign origin should be seen as the "engine of prosperity."[26] According to Borjas and Friedberg:

> *"Another important policy change that took place during the 1990s was the expansion, most notably in the late 1990s, of the H-1B visa program. H-1Bs are temporary, employer-sponsored visas for college graduates who work in "specialty"occupations. In 2001, 58% of H-1B visa holders were in computer-related occupations, with another 12% in engineering and architecture. Over 40% had at least a Masters degree, and half of them were from India. An H- 1B visa can be renewed for up to six years, and people on H-1Bs can apply to remain in the U.S. permanently."*[27]

Figure 2.2.1 shows the number of admissions of H-1B visas between 1989 and 2004. In 1985, 47,322 work visas were granted to temporary highly skilled workers. After the Immigration Act this number increased to around 100,000. In 1996 the amount increased again, this time to 144,548. Following the 1998 American Competitiveness and Workforce Improvement Act, the number rose to 240,947. In 2000 the number of H-1B was above 355,000.

Figure 2.2.1

Historic series of number of H-1B visas granted by the US government, 1989-2004



Source: INS Statistical Yearbook, 1996 e 1999; U.S. Department of Homeland Security, Office of Immigration Statistics Yearbook apud Borjas e Friedberg.

Governments can do much to undermine the problems caused by 'brain drain,' especially by policies in the areas of Science, Technology and Innovation (CT&I). It is known that developing centers of excellence for scientific research and creating conditions for innovation and entrepreneurialism are some of the measures which can make a country attractive for a highly skilled population, whether of a national or foreign origin. The United Kingdom, for example, plans to increase the salaries of post-doctors by 25% and to increase funds for hiring university professors. In France more than 7,000 professor-researcher positions have been created since 1997 to retain talent and to encourage the return of post-doctors working abroad.[28]

The risk of brain drain is effective. However, countries can create opportunities for research, innovation and entrepreneurialism at home to stimulate the return of migrants, thereby wining access to international innovation networks. According to Straubhaar:

> *"The creation of human capital faces a number of problems, not least of which is the fact that subsidy of human capital production can lead to subsidy of other countries if the highly skilled emigrate. Thus, the result arises that, in order to keep and accumulate human capital, countries have to make themselves attractive to the highly skilled in terms of openness to innovation, strong links between research and industry, openness to foreigners, a flexible system and low taxes etc. These man-made political factors of relative attractiveness complement natural elements, like clean air and water, that are considered attractive by the highly skilled, who can choose their place of residence by maximising the return on their human capital investments."*
>
> *"Therefore, attractiveness plays a large role in the accumulation of human capital. It does start with a high standard ambitious education system. But this first step is not enough. Education needs to be supported by the existence of factors that will hold the highly educated and attract the highly skilled from other areas/ countries".*[29]

Public migration policies should reinforce the role of migrants who return to their countries of origin in stimulating socioeconomic development. According to the 2010 report of the International Migration Organization:

> *"[...] Participants recognized that return migration in its variety of forms has the potential, under certain conditions and circumstances, to contribute to development. Returnees participate in their home country's development by bringing skills, know-how and technology they have developed or acquired abroad, and financial capital they have accrued in the forms of savings or social benefits. Some create entrepreneurial projects, sometimes backed by investments and professional, academic and social networks."*[30]

In Brazil some very interesting policies were created with the aim of ensuring the return of students after they qualified abroad. The principal measure adopted was the implementation of the so-called Sandwich Grants, which stipulate that the time spent abroad should be complemented by a period of studies in Brazil in which the students have to remain linked to the institution which mediated the financing of their studies with the responsible public agency.

Brain gain is the name given to the positive effects of skilled migration, both for the destination country and the migrant's country of origin. For the country which receives the migrant, the benefits are evident, and expressed in the incorporation of their skills and experience in the local labor market. Among the possible benefits that the country

of origin can obtain, we can mention the following: increase in capital remittances (sent by workers abroad to their families), increase in commercial exchanges with the destination country and increased rates of foreign investment. Furthermore, as has already been mentioned, in regards to their eventual return, emigrants bring with them new knowledge and professional experiences.

It is known that emigrants can stimulate trade between countries and increase the propensity to invest in their countries of origin, as shown by the experience of immigrants from Taiwan, India and China, who created hi-tech companies in Silicon Valley.[31]

Recently the Brazilian government has been investing massively in study grants for Brazilians in foreign universities in the Science without Frontiers Program. 75,000 grants will be awarded up to 2015, including not just grants for Brazilians abroad, but also grants for young scientists of great talent (860 grants) and special visiting researchers (390 grants) interested in coming to Brazil. Without a doubt these efforts will be fundamental for the socio-economic development of Brazil, though they need to be complemented with a set of initiatives aimed at increasing the number of grants for foreigners interested in living in Brazil and attracting Brazilians qualified abroad back to the country, even if only in the long term.

According to Coentro, there is an important cleavage among two public policy matrices for the attraction and admission of skilled labor. The first is concerned with the demand of companies for specialized labor, and the second, the offer of this labor at the global level.[32] The first matrix for admission policies for skill immigrants is based on demand, and is centered on the action of employers. In this system, employers are responsible for requesting from the government the hiring of skilled immigrants, as well as for proving to the relevant governmental agencies the non-existence of these skills in the internal labor market.[33] For obvious reason this system results in high levels of immigrant employability, as well as being quite dynamic as it involves the participation of private enterprise.

The second matrix of migration policies for the admission of skilled immigrants is based on the global offer of labor, not always taking into account the availability of labor or the exact location of skill deficits in the internal market. In this system foreign workers complete a questionnaire on the basis of which they will be assigned points in accordance with their educational and technical qualifications. Admission criteria to the country depend on this score. This system, based on offer, assumes the need that the individuals have education, skills, and sufficient knowledge of the country's language, so that they can create economic and social benefits for the country that receives them.[34] Skilled immigrants authorized to enter the country do not always directly correspond to the needs of the labor market and in this way can face difficulties in finding employment.[35]

The offer based system can facilitate a focus on the integration of the immigrant, as well as allowing the emergence of evolving development strategies, which are a priori unpredictable, through the increase of national critical mass. Also present in texts about migratory flows, the concept of brain waste is based on the evaluation of the immigrants being able to work in areas related to their technical or theoretical knowledge in the destination country. In cases where immigrants are underused in relation to their qualification in the destination country, they come to be considered as cases of 'brain waste.' In these cases, both the country of origin and the destination country do not benefit from their knowledge. In practice most of the successful immigration administration systems are based on the composition of elements from both public matrices (focus on demand and on supply).

The consequences of brain drain are, for obvious reasons, higher in developing countries. Generally speaking, it is assumed that migrants from developing countries have a greater propensity to remain in host countries that are developed. In the case of the migration of scientists between developed countries, what almost always occurs is what is conventionally called brain circulation, characterized by constant reallocation which allows different countries to overcome specific qualification deficits through the circulation of professionals. Research about the number of foreign doctoral students in the science and technology areas in the USA shows that 79% of graduates from India and 88% of those from China in 1990-91 were still working in the US in 1995. In contrast only 11% of Koreans and 15% of Japanese who got degrees in the sciences and engineering in 1990-91 were still working in the US in 1995.[36] The international mobility of skilled workers can generate benefits through the improvement of flows of knowledge and a dynamic of complementary equilibrium between demands for skills and specific knowledge.

Although the contribution of skilled foreign workers to the economic growth of their countries of origin is being increasingly recognized, it is also necessary to bear in mind that only a few countries have been successful in attracting talented emigrants back again. iOM estimated that 300,000 highly qualified professionals from Africa live and work outside the continent, especially in Europe and North America. According to estimates, around one third of professionals qualified in research and development in developing countries live in OECD countries.[37]

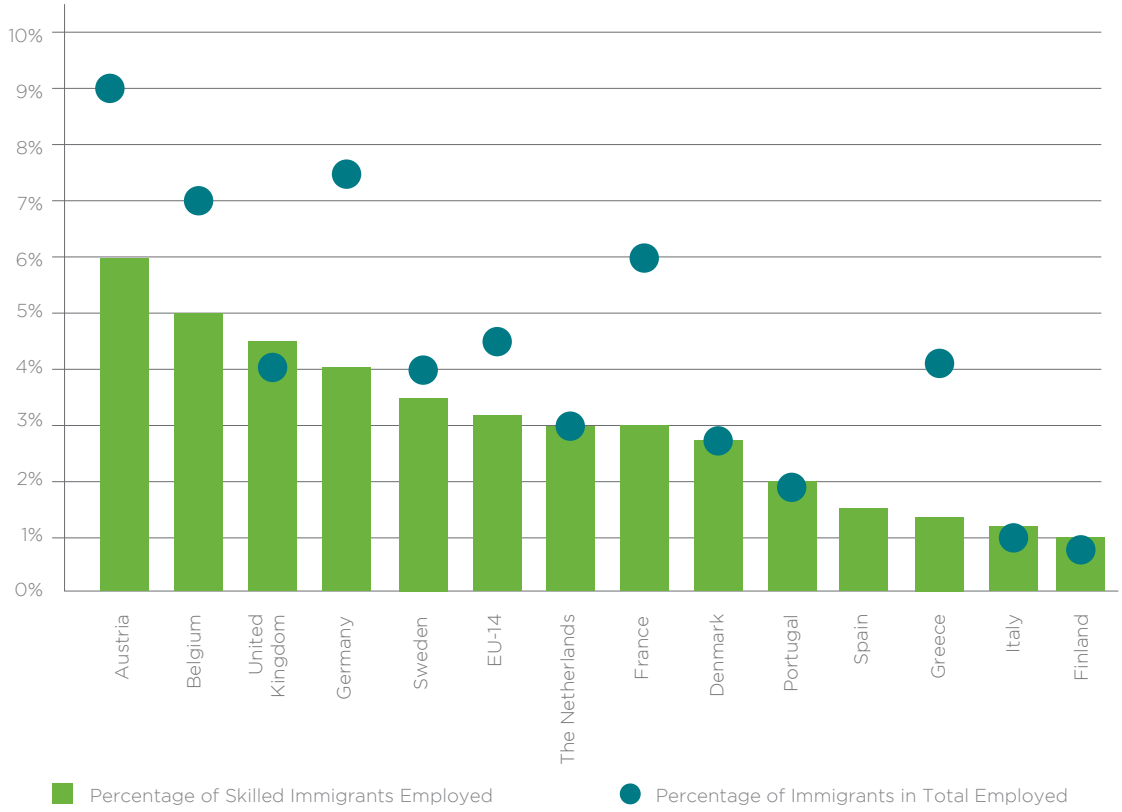
The available data about the migration of highly skilled workers is incomplete and difficult to compare, nonetheless it is possible to comprehend from the available sources that during the 1990s there was an increase in the migration of skilled labor, especially from Asian countries, to countries such as the US, Canada, Australia and the United Kingdom. This increase was allowed by the existence of selective immigration policies in favor of highly skilled immigrants, especially in areas linked to science, technology and innovation, with information technology being particularly important from the 1990s onwards. Figures 2.2.2 and 2.2.3, found in Cervantes and Guellec's text, show the percentage of non-nationals in the highly skilled population (bars), and the percentage of non-nationals in the total employed populations (spheres).

Among the European countries, Austria, Germany, France and Belgium stand out for having a great difference in the ratio between the low number of highly skilled foreigner professionals in comparison with the total proportion of foreigners holding positions in the labor market. It can also be noted that countries such as Australia, the United Kingdom and Canada, to the contrary of countries such as France and Germany, seem to attract similar proportions of highly skilled professionals and total employed in relation to the composition of their labor markets, which indicates a very balanced immigration policy. Nevertheless, it can be argued that this results, at least in part, from the fact that these countries possess, due to their geographic and geopolitical position, better objective conditions for controlling their borders. In Australia approximately 25% of its productive force who are classified as highly skilled are foreigners, followed by Canada, with approximately

20%.[38]

Figure 2.2.2

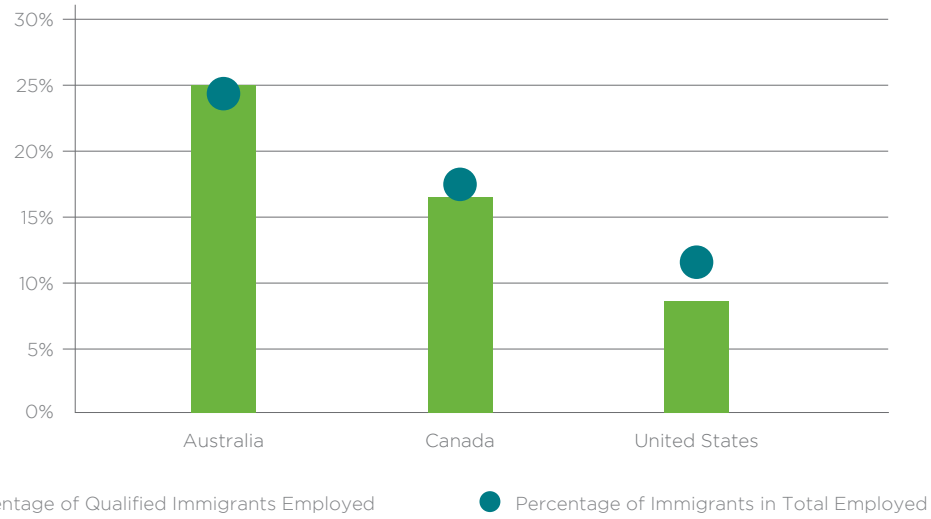
Percentage of non-nationals in the highly skilled employed population (bars), and percentage of non-nationals in the total employed population (spheres), selected European countries, 1998



Source: CERVANTES and GUELLEC, 2012.

Figure 2.2.3

Percentage of non-national in the highly skilled employed population (bars), and percentage of non-nationals in the total employed population (spheres), in some particularly successful countries in terms of their attraction policy for



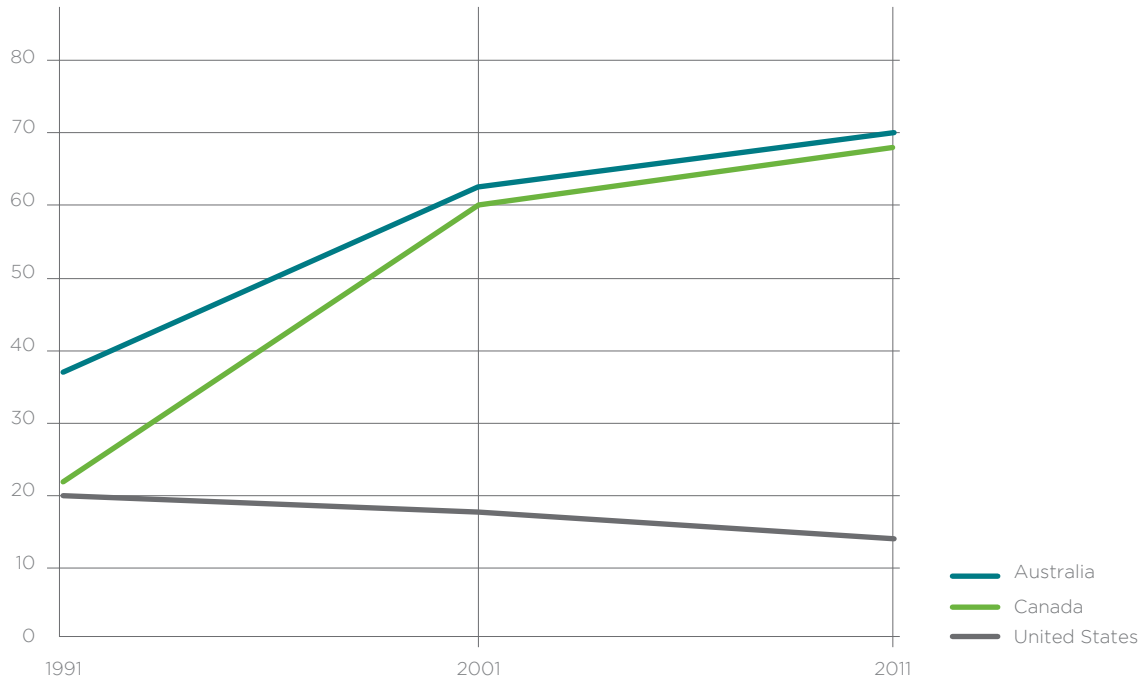
Sorce: CERVANTES and GUELLEC, 2012.

skilled immigrants, 2011

In absolute numbers the US is the greatest center of attraction of skilled foreign workers, with 40% of its enormous adult population with a foreign origin having third level education. However, when we look solely at the permanent visas granted for economic reasons (as opposed to kinship reasons), we can see that Australia and Canada have considerably more aggressive policies. In part this is due to the importance of the temporary H-1B visa in the US recruitment strategy. According to a recent report in The Economist, policies of countries such as Canada, Australia, Great Britain, New Zealand and even Chile have a greater focus than the US in attracting entrepreneurs. According to Figure 2.2.4, in recent decades, Canada has presented an impressive increase in the proportion of visas granted for economic reasons in relation to the total number of visas. Between 1991 and 2011, this proportion rose from 18% to 67%, while in the US it fell from 18% to 13%.[39]

Figure 2.2.4

Historic series of the percentage of permanent visas granted for economic reasons by the governments of Australia,



Source: The Economist, 2012.

Canada and the US, 1991-2011

Canadian immigration policy has been particularly aggressive and successful, consisting in encouraging in plural forms the entrance of skilled labor into the country. Skilled foreign labor is extremely valorized by the Canadian government which has established the so-called 'points system' as part of the Federal Skilled Worker Program, intended to de-bureaucratize entrance to the country. This system classifies candidates for future Canadian citizens according to criteria which run from education, knowledge of English or French, and previous work experience. Moreover, applicants have to prove that they have sufficient money to sustain themselves and their families. Only after complying with these requirements can foreigners get a permanent visa. Companies based in Canada also actively participate in the attraction of highly qualified immigrants, recruiting, partially through letters of invitation, talent from the most varied parts of the world.

Table 2.2.1 analyzes, in accordance with OECD figures, non-selective migrations in some OECD countries in 2003. The first axis analyses the amount of permanent immigration the country receives, with the United States being in first place among the selected countries, i.e., the one which receives most permanent migrants, followed by the United Kingdom, Canada, France, and much below Switzerland and Sweden. The table also shows the percentage of permanent migration caused by discretionary policies on the part of the state; and also if the migration is accepted for humanitarian or family reasons (such as the taking in of political refuges or persons fleeing natural catastrophes, or migration motivated by kinship), or simply the free circulation of people, without control. In Switzerland and Sweden the percentage of non-discretionary migration is above ninety percent, followed by France, with 83%. The other countries analyzed have lower percentages, with the lowest being Canada, with 28%, all of which is due to humanitarian or kinship reasons.

	Total Permanent Immigration (thousands)	Amount Non-Discretionary (percentage)	Components	
			Family + Humanitarian (percentage)	Free Circulation (percentage)
Canada	221	28	28	-
US	706	39	39	-
France	173	83	61	21
United Kingdom	244	49	23	25
Sweden	41	95	73	22
Switzerland	82	94	31	63

Source: OECD (2006). The total data for permanent immigration is harmonized in accordance with OECD methodology, the numbers may thus differ from the official numbers provided by each of the different countries mentioned.

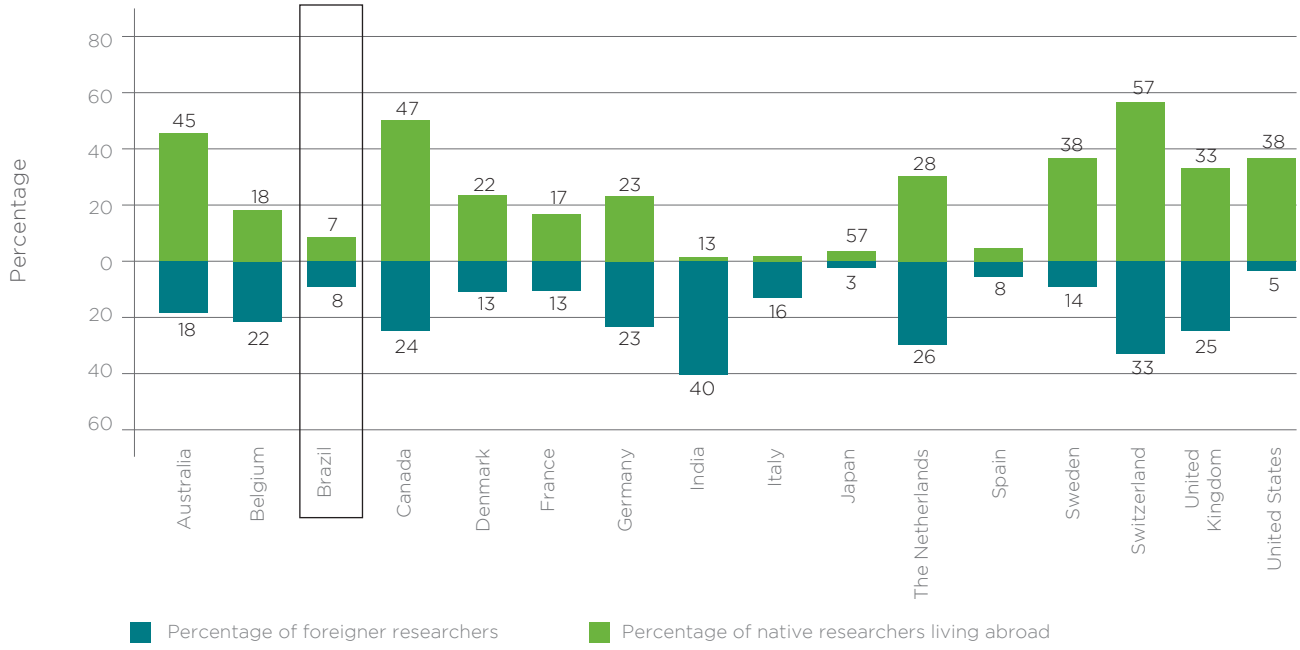
Table 2.2.1

Non-Discretionary Migration in Selected OECD Countries, 2003

Interesting research carried out using data from the National Bureau of Economic Research of the United States offers an approximate vision of which countries 'export' their talents and which benefit from the immigration of scientists. The data was obtained from a survey involving a questionnaire given to 47,304 scientists from 16 countries, who published in selected journals in the areas of biology, chemistry, earth sciences and environmental sciences in 2011, of whom 17,182 sent sufficient responses to determine if they were immigrants, their countries of origin and destination countries. Each of them was asked about where they were currently living, the country they had lived in until they were 18, if they had worked abroad previously, and their reasons for moving. According to the data produced in this research, among the countries researched Switzerland was the one with the greatest proportion of scientists with a foreign origin, followed by Canada and Australia. India was the country with the lowest percentage, followed by Italy and Japan. India was also the greatest victim of "brain drain."[40]

Figure 2.2.5

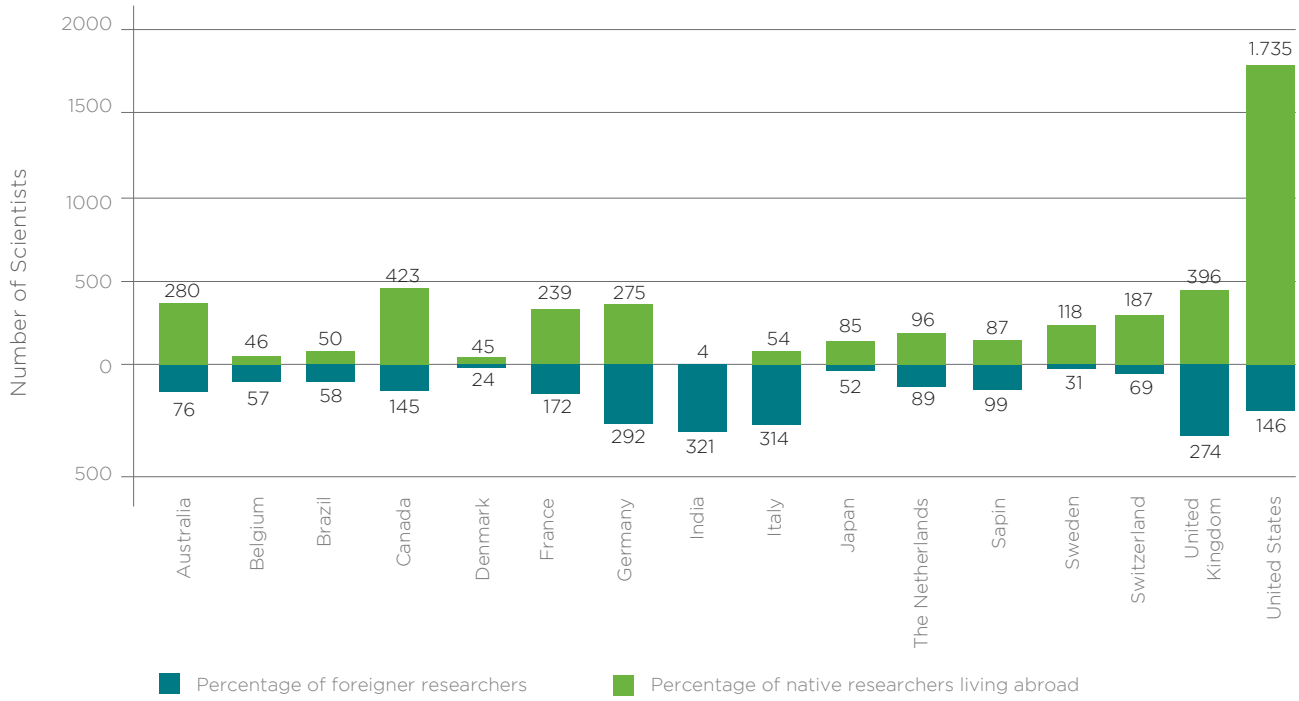
Percentage of 17,182 scientists from the 16 countries researched, who published in selected journals in the areas of biology, chemistry, earth sciences and environmental sciences, who emigrated from, and immigrated to, each of the countries, 2011



Source: United States National Bureau of Economic Research, apud GIBNEY, 2012.

Figure 2.2.6

Total numbers, among 17,182 scientists from the 16 countries researched, who published in selected journals in the areas of biology, chemistry, earth sciences and environmental sciences, who emigrated from, and immigrated to, each of the countries,2011



Source: United States National Bureau of Economic Research, apud GIBNEY, 2012.

Analyzing the total numbers produced in the research, the importance of the United States as a center of attraction for highly qualified scientists is even more clear. To a great extent this is due to the excellence of its universities and public policies, both selective and aimed at attracting skilled foreigners. The country which lost most in its intellectual production capacity is India. Among the respondents, India lost last year 321 high yielding researchers, while it received only four, and is thus a clear victim of 'brain drain.' In relation to Brazil, Fernandes and Diniz' comment is relevant:

> *"It is clear that we are witnessing two conflicting tendencies in terms of international migration. On the one hand, Brazil functions as a country of emigrants, sending thousands of skilled workers abroad and thus suffers from 'brain drain.' On the other hand, there is a contrary movement, marked by the increasing arrival of immigrants with increasing levels of qualifications; a fact which makes Brazil a country which benefits from "brain gain." This tendency becomes even more relevant with highly education Brazilians returning from abroad are taken into account.*
>
> *This conflicting situation can actually indicate a growing insertion of Brazil in the global economy, with the entrances and departures of highly skilled persons mutually cancelling each other. At the same time the impact of these exchanges in terms of development for the country can be very positive, facilitating the construction of social networks and the transfer of technology."*[41]

Countries such as Germany and France have sought to create policies to attract foreign students, researchers and workers in the technical and scientific area. In 2000 Germany launched a type of 'green-card' scheme (as the temporary German work visa, similar to the US H-1B, is called) to recruit 20,000 foreigners specialized in IT, and at the end of the following year they had already contracted half of this number, principally from Eastern Europe. In addition, dynamic Asian economies, such as Singapore have tried to meet their demand for IT professionals through immigrants from neighboring countries, such as Malaysia and China.[42]

In Coentro's study there are three principal factors which, according to Chiswick, explain the increase of the demand for skilled workers by developed countries in the last 50 years.[43] For this author the first factor is related to the informational technology and computer revolutions, which gained scale and substance in the 1980s and 1990s. The second is associated with the globalization of the economy which demanded new professional qualifications to meet the necessities of new international business. The third explanatory factor for the increase in the demand for skilled labor was linked to the need to compensate the entrance of a growing number of lowly skilled immigrants from Latin America, Africa and the Middle East into developed countries.

It can be said that Brazil is among the countries which to some extent suffer from "brain drain." It is reasonable to assume that the country's increased investment in ST&I should lead to a growing enticement of national skilled labor. Coentro also cites a recent study from the Sistema Econômico Latino-Americano e do Caribe (SELA – Latin American and Caribbean Economic System), according to which the increase in the contingent of skilled emigrants in the world rose from 12.2 million in 1990 to 25.8 million in 2007 (an increase of 111%). According to the same study, the rate of emigration of the skilled population around the world was around 5.6% in 2007 (against 5.0% in 1990). In the Brazilian case, in 2007 the country had a skilled native population (according to SELA criteria) of around 9.5 million people and a skilled emigration rate of 2.3%. Although it has a rate lower than the global rate (of 5.6%), it also needs to be noted that the number of skilled emigrants with a Brazilian origin destined for OECD countries rose by 41.4%

between 2000 and 2007, while the skilled native population rose by only 24.6% during the same period. In other words, according to this data, a considerable evolution in the proportion of skilled Brazilian emigrants can be found in relation to the total number of skilled Brazilians.[44] In this way, we can link the relative optimism of Fernandes and Diniz to the warning of Rios-Neto:

> *"The literature about questions of brain drain in Brazil is scarce. (...) A word of warning is needed: the flight of brains from Brazil could become a hot subject in the country in the next decade. This will happen to the extent that the decline of Brazilian fertility is strongest among the families with the highest education. If the few children from these families emigrate in large numbers in the next decade, then the young generations entering the market will be less qualified, imposing negative productivity shocks on the labor market"*[45]

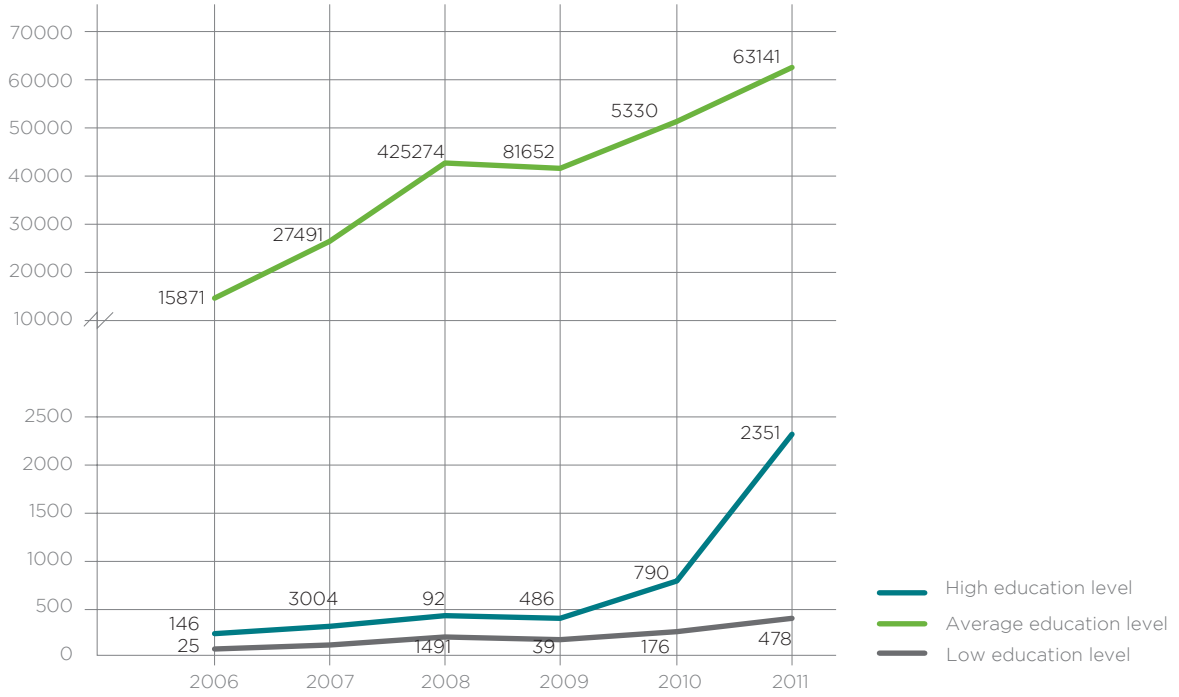
Actually the effects of the decline of fertility among the families with the highest education mentioned by Rios-Neto, are undermined by the formidable process of educational inclusion which is being promoted in Brazil, as well as the process of the ascension of a 'new C class.' Nonetheless, it is worth stating that while it is true that Brazil is currently enjoying exceptional conditions for the preparation of public policies to attract qualified immigrants, the risk associated with political inertia in relation to the question is very high, since the country still does not have a sufficient quantity of highly skilled professionals for the maintenance and strengthening of its social welfare structure. In light of this scenario, the government should, with the utmost urgency, assume a strategic position. Viable solutions for this problem exist, many of which involve investing in education and guaranteeing the 'counter- balancing' of the departure of Brazilian talent through the attraction of foreign talents, producing a adjustment in the 'brain market' which allows the filling of the professional deficits in the country, i.e., it will work in such a way to transform 'brain drain' into the 'circulation of brains.'

Coentro highlights the importance of some definitions. According to the definition contained in the UN report, migrants are considered to be those who are living outside their countries of origin for more than a year, whether or not there is an intention of permanence, thereby also including temporary workers.[46] The report in question points to some of the important characteristics of contemporary migratory flows, which we should take into account in the contextualization of the following analyses, namely: i) in receiving countries the demand for foreign workers occurs more strongly at the two extremes of professional qualifications, i.e., highly skilled individuals and people with low skills; ii) the majority of migrants are youths or young adults aged between 15 and 30; iii) the United States is the principal destination country for international migrants; iv) the average level of education of immigrants is usually higher than the average education level of their countries of origin, which helps us to reaffirm the importance of the phenomenon of 'brain drain.'[47]

According to a classification based on three levels – low (less than or equal to eight years of study), average (nine to fifteen years of study) or high (16 or more years of study) –, we can see than in Brazil the highest growth took place among immigrants located at the center of the spectrum of professional qualifications. In accordance with Figure 2.2.7, prepared using data from the Ministry of Labor and Employment, the number of immigrants in Brazil with only undergraduate degrees has grown enormously. It can be seen in the figure that in 2006, 16,042 foreign workers were granted visas. Until 2010 this number grew repeatedly until it reached the level of 42,277, declining slightly in 2008 and 2009.

Figure 2.2.7

Historic series of number of visas granted to foreign workers, according to educational level: low (less than or equal to eight years of study), average (9 to 15 years of study) or high (16 or more years of study), 2006-2011.



Source: DAPP/FGV based on MTE data

There can be seen here the prevalence, and the tendency to increase, of immigrants with a third level degree, (a bachelor's degree, a licentiate, or higher level technical course, with between 9 and 15 years of study). While it is true that there is also an increase in the number of foreign workers with past-graduate qualifications, master's degrees, or doctorates, this increase is still relatively insignificant.

The reason why global demand for workers occurs more strongly at the two extremes of professional qualification is relatively simple. While workers with low qualifications take undesirable positions, and highly skilled workers occupy positions for which there are no national with adequate levels of qualification, workers with average education levels compete more strongly with national workers.

In the Brazilian case there is undoubtedly an enormous demand for professionals who are graduates or of a technical level in various sectors, especially the technical and scientific areas. However, it is fundamental to also increase the number of people with masters degrees and doctorates in order to not only fill existing labor deficits, but to implement a national development strategy based on the development of high tech industries or which demand high added knowledge.

Brazil should invest heavily in the attraction of foreigners with different levels of qualification, as well as in the repatriation of talent, who in their return bring with them new experiences and knowledge. Success in achieving this

objective depends on great investment in science and technology and in the creation of infrastructure to increase production and innovation through the entrance of foreigners and the return of expatriates to the country, offering them research institutions and labor market opportunities suited to their qualifications – there should also be a specific concern with creating paths of integration between academia and dynamic sectors of the economy, for the benefit of both and to allow the emergence of a stimulating and attractive environment for the most skilled professionals. In order to optimize the presence of foreign workers in the country, temporary work programs can be created for skilled foreigners, associated with the transfer of skills and knowledge, as well as creating mechanisms which allow skilled immigrants to be retained. The relatively positive situation of the Brazilian economy will help in the promotion of a national policy for attracting skilled immigrants.

2.3 THE NEED FOR PUBLIC IMMIGRATION POLICIES IN BRAZIL FOR SKILLED WORKERS: DEMOGRAPHIC ASPECTS

SUMMARY

- Brazil has the chance, for approximately a generation, to benefit from the 'demographic bonus.'
- This favors economic development. However, for this development to be sustainable in the long term, it is necessary that there be large-scale investment in education and innovation, as a basis to create the gains in productivity necessary for the future support of the social insurance system.
- With the fall in birth rates, the question of immigration should be of increasing importance on the national agenda.
- Public policies must be urgently drafted to take advantage of the opportune coincidence between the momentum of the Brazilian population in the demographic transition process and the fact that Brazil has become increasingly attractive for migrants from all over the world.

The global economic crisis that erupted in 2008 had a direct impact on the unemployment rates in the central countries, principally the US, Japan, and the Western Europe nations. In 2006 the US had an unemployment rate of 4.4%, with the crisis this number rose to 8.3% in 2012.[48] In Brazil the effects of the crisis were comparatively reduced and short lasting, with the unemployment rate having fallen from 8.4% to 4.7% in 2011.[49] The reconfiguration of the global political and economic context, associated with the lack of labor observed in various segments of national industry, explains the flow of foreigners interested in working in the country. In 2006, the number of foreigners formally authorized to work in Brazil was 25,500. In 2011 this jumped to 70,000. Moreover, the long term ageing tendency for the Brazilian population is obvious, highlighting the possibility of future problems for sustaining and strengthening the structure of the Brazilian social welfare system. At the moment the majority of the population is located in the age group that is considered economically active (around 70% of the total of the population is in the age group between 15 and 64). We will now look in greater detail at the ageing cycle of a population, inserted in which is the concept of demographic transition.

This cycle has as an initial state a population with high gross birth and mortality rates and consequently low vegetative growth (the difference between the gross birth rate and the gross mortality rate). At a second moment, a progressive reduction in the mortality rate is observed, accompanied by the maintenance of high birth rates, producing a constant increase in population growth, and the resulting prevalence of a young population. The effective reversal begins with the decline of birth rates, producing a reduction of the rate of population growth and, due to the high birth rates of previous periods, a proportional increase in population at an active age can be observed. Finally, birth and mortality rates remain low and population growth is gradually reduced until it is zero, or even negative, creating an increase in the proportion of elderly in the population, with the proportion of children, and of the population at an active age, being considerably reduced.[50]

According to an IBGE study (2009), transformation in the demographic pattern of the age structure of Brazil started to occur from the 1940s onward, when a consistent decline was noted in the general levels of mortality, which were not accompanied by a similar process in relation to the birth rate. In two decades the gross mortality rate fell to a level of 21 to 10 deaths per thousand inhabitants. In the 1960s the changes accelerated as a result of significant falls in fertility, to such an extent that, in comparison with what was experienced by other countries, Brazil underwent one of the faster demographic transitions in the world.

It is important to point out that the country has approximately for one generation the chance to benefit from the 'demographic bonus', namely the period when the active population is larger than the economically dependent population. According to Alves:

> *"On the demographic side, never in the history of Brazil have the conditions been as favorable for breaking with the vicious circle of the poverty trap. In the first half of the twenty-first century, Brazil will have a population growing at an ever lower rate, with an increase in the proportion of people at working age and lower dependency rates, greater female insertion in the labor market and with a growing number of men and women with higher education levels and thus greater productive potential. The fall in child mortality and the increase in life expectancy signify longer years of life, which can be transformed into human capital at the service of raising the standard of living and increasing social capital."*[52]

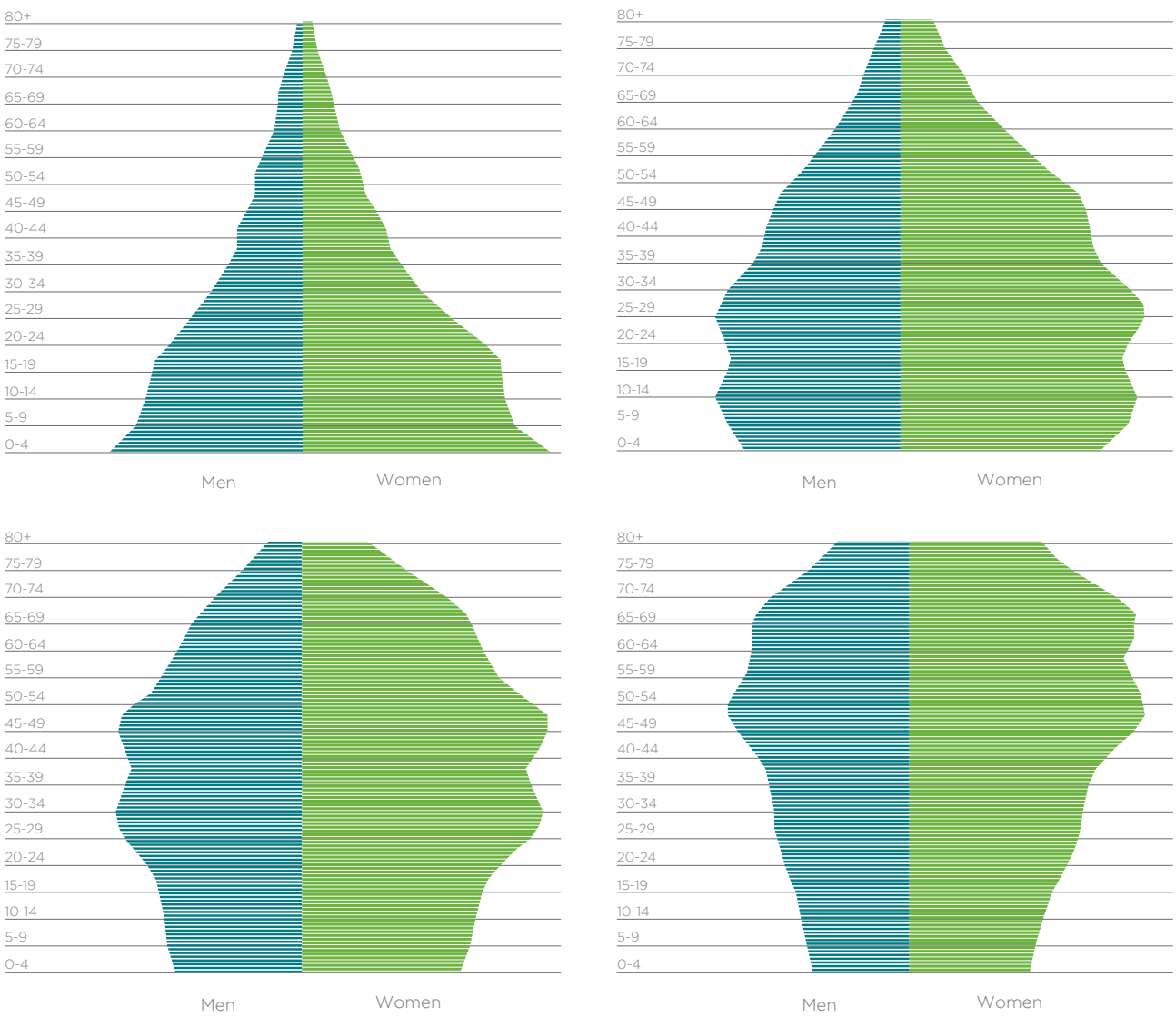
In conjunction with other factors, this should favor economic development. However, for this development to be sustainable in the long term, great investment in education and innovation is necessary, as the foundation for creating the gains in productivity and competitiveness required for the future support of the social insurance system. When the reversal process commences, for this investment to be allocated in an efficient form, it is also necessary that the country will have a sufficient number of highly skilled workers in strategic areas, trained in the previous generation and capable of leading this process of change. In this context, the attraction of highly skilled immigrants should play a fundamental role in overcoming in the short term the deficit in the skills and knowledge required for the necessary rapid jump in productivity, and which can in a longer period, be provided through investment in education.

Brazil is currently at the beginning of the transition, with the birth rate starting to fall and mortality rate remaining stable. Brito et al. (2008) estimate that until 2050 the Brazilian population will increasingly age, with people above 65 reaching around 20% of the total population. In 1980 the population aged 65 and over amounted to only 4% of the Brazilian population. Along with this, the improvement in various socio-economic indicators can be noted in areas

such as employment, health, as well as an increase in the number of public policies aimed at the resolution of social problems. Evidentially, concerns about the possibility of the maintenance of the social insurance system persist.[53] Moreover, starting with the purely economic assumption that population growth and the increase of productivity via ST&I are the two paths which allow, in a given market, the neutralization of the decreasing returns which result from the accumulation of capital per worker,[54] it can be concluded that with the decrease in birth rates, the theme of immigration – principally of highly skilled immigrants, apt to contribute to the increase in productivity, but also of young immigrants in general who can become part of the economically active population in Brazil – should in the years to come gain increasing importance in the national agenda.

Figure 2.3.1

Projection of the development of the age and gender composition of the Brazilian population, in four chronological periods: 1950, 2010, 2030 and 2050.



Source: IBGE.

In an extract from the OIM report which describes the conference theme, the challenge is notably summarized:

> *"Economic cycles and demographic trends, while operating on different timescales, are both intricately linked to migration. Migration policymakers are challenged to balance demographic, economic and labour market considerations in their approaches to labour mobility, temporary versus permanent migration, family and student migration, labour market access for migrants and their families – to name but a few. The scene-setting presentation will summarize the main findings on the implications of the last economic crisis for migration trends and patterns. It will also provide participants with an overview of current and projected global demographic trends and some of the ways in which they may affect migration flows. Lastly, the presentation will outline key areas for capacity-building – such as data and statistics, labour market assessment and international cooperation – relevant to the subject at hand"*[55]

In the Brazilian case, public policies are urgently needed which can take advantage of the opportune coincidence between the momentum of the Brazilian population in the demographic transition process and the fact that the country has become ever more attractive to migrants from all over the world, due to its recent resilience to the cycle of global economic crises, which commenced in 2008, and is also associated with the global projection which results from the implementation of large-scale social development programs.

2.4 THE CREATION OF HUMAN CAPITAL AS A BOTTLENECK FOR DEVELOPMENT IN THE BRIC COUNTRIES (BRAZIL, RUSSIA, INDIA AND CHINA)

SUMMARY

- The deficit in human capital constitutes an important bottleneck risk to the economic development of the BRIC countries.
- Brazil has advanced much in recent years, but still possesses a historic deficit of adequate investment in education.
- The attraction of highly skilled immigrants should play a fundamental role in overcoming in the short term the deficit of adequate investment in education in previous decades.
- Brazil is a country with solid democratic institutions and relatively few political, ethnic, or religious conflict, factors which make the country an attractive local for skilled professionals.

With the economic crisis that began in 2008, the resulting increase in unemployment rates, principally in the US and Western Europe, and the concomitant increase of the global economic importance of developing countries, especially those that are part of the so-called BRIC group, there emerged the possibility of important alterations in migratory flows. According to John McGurk, the four BRIC countries share some important characteristics, including rapid economic growth in the last decade and the implementation of programs by their respective governments aimed at strengthening their competitive position through the development of human capital.[56]

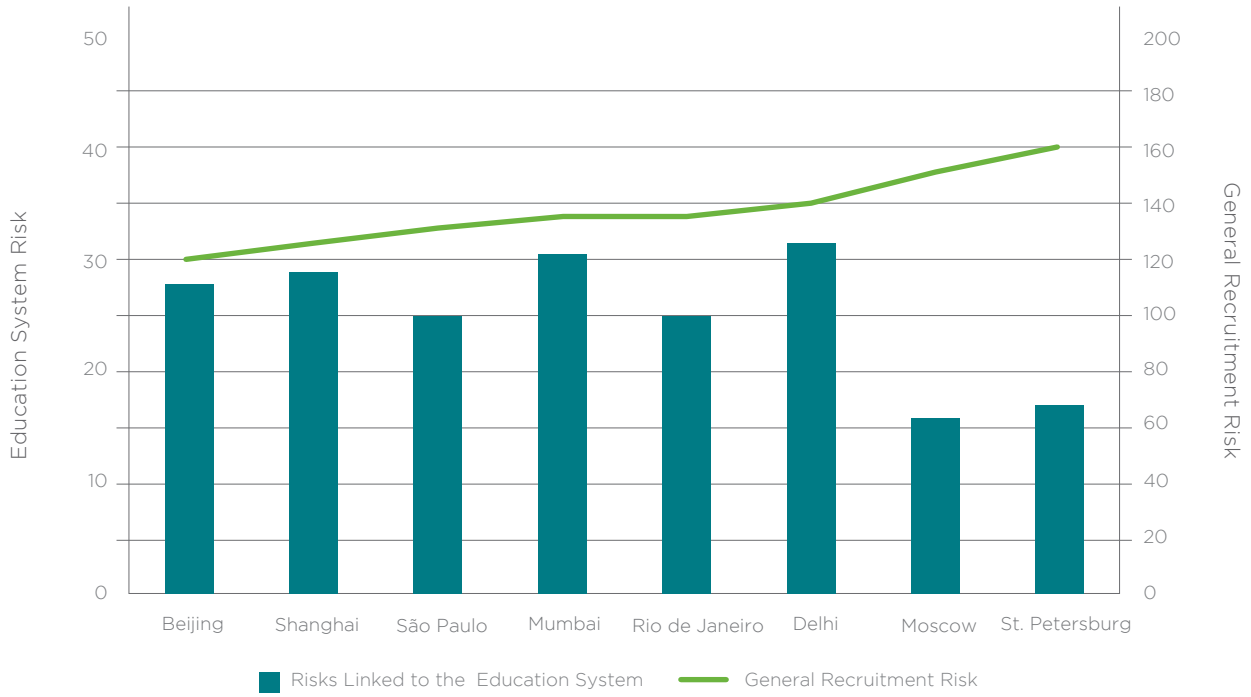
Human capital is a fundamental determinant of economic growth. Highly skilled workers increase the productive capacity of the economy.[57] Recent evidence suggests that the quality of teaching and the development of cognitive abilities is of particular importance for the qualification of human capital and, consequently, for the economic growth of different countries.[58]

In a recent article Foong and Lim describe, using the Aon Hewitt people risk index,[59] the risks associated with the hiring of staff or the renewal of human capital in the principal cities in the BRIC countries.[60] They demonstrate that in the last decade the BRIC countries' share of global GDP rose, reaching 7.1%, while the IMF estimates that in 2015 this should reach 29.1%. This economic growth is shown by the Foreign Direct Investment which these countries have been receiving. Nonetheless, according to Foong and Lim, human capital is one of the factors that needs be taken into account to analyze the sustainability and continuity of this growth. Their article, thus, seeks to show the risks related to human capital in the BRIC countries. Specifically, the Aon Hewitt people risk index takes into account the three principal risks linked to human capital, present in each of the stages of the employment cycle, namely: recruitment risk, unemployment risk, and reallocation risk. In the article in question, only recruitment risk is analyzed.

According to Foong and Lim, Brazil has considerable problems in relation to its educational system. These problems threaten to become a bottleneck for the country's economic growth. Figure 2.4.1 presents the total risks associated with recruitment and one of its components, the specific risks related to educational systems in the principal cities in the BRIC group.

Figure 2.4.1

Aon Hewitt index of the risk associated with the education system (bars) and the general recruitment risk (lines) for the principal cities in countries belonging to the BRIC group, 2011



Source: FOONG and LIM, Op. cit.

Among the eight BRIC cities analyzed in the research, Rio de Janeiro is equal fourth with New Delhi, while São Paulo is the fifth in the ranking of general recruitment risks. In relation to the educational system risk, Rio de Janeiro and São Paulo are drawn in fifth place, with lower risks than the Asian cities and higher than the Russian. Also according to the authors, the problems in the Brazilian educational system result in part from its decentralized structure, which is expensive and inefficient, and implemented by states and municipalities, as well as poor administration and teacher training. Moreover, the large allocation of educational investment in the university system, to the detriment of basic education, results in the fact that most of the investment in education is not reverted to the benefit of the part of the population who most need this investment. Here, a counterpoint needs to be made. Aghion and Howitt, for example, suggest a distinction between different types of expenditure with education, attributing to investment in third level education the role of increasing the capacity of a country to generation innovations, produce up-to-date knowledge and to create productivity.[61]

Ardichvil, Zavyalova and Minina demonstrate that there exist significant differences among the BRIC countries, both in the indices and in relation to their strategies of national development. While Russia and Brazil lead in the Human Development Index (HDI) and the Knowledge Economy Index (KEI),[63] as illustrated in Table 2.4.2, a more detailed examination of the other indicators, shown in Table 2.4.3, provides a more nuanced vision which shows, for example, the low number of scientists and engineers in Brazil.[64]

Table 2.4.2

Comparison of BRIC countries in accordance with the Human Development Index (HDI) and the Knowledge Economy Index (KEI), 2012

Programs / Factors	**Countries**			
	Brazil	**Russia**	**India**	**China**
National Human Capital Development Program			+	+
Human Development Index (HDI)	0,813	0,817	0,612	0,772
Knowledge Economy Index (KEI)	5,66	5,55	3,09	4,47

Source: World Bank, 2009 and Human Development Bulletins (2010) apud ARDICHVIL, ZAVYALOVA and MININA, 2012.

Table 2.4.3

Ranking of BRIC countries in accordance with various comparative indexes related to skilled human resources, 2012

Among all countries	Countries (by rank)			
	Brazil	Russia	India	China
Number of patents, 2007	58	41	57	54
Advanced technology exports	39	69	54	9
Number of scientists and engineers	57	34	3	52
Number of research institutions	43	45	27	37
Number of students in institutions with third level teaching (as a % of total students), 2006	76	16	98	81
Accessibility to education, 2006	64	89	77	120
Prioritization of Government of Information and Communication Technology (ICT)	112	113	24	38

Source: World Economic Forum (2009) apud ARDICHVIL, ZAVYALOVA and MININA, 2012.

Russia and China lead in relation to the number of patents awarded. China and Brazil are at the front of high-technology exports, with China assuming a wide advantage. For Brazil, the majority of human capital indicators are relatively good. What calls attention is the ranking of accessibility to education, in which Russia is ahead of China, and Brazil appears as the best of the BRIC countries. Nonetheless, looking at the percentage of students in third level teaching institutions, what appears is the total superiority of Russia. India, in turn, stands out in turn by the excellent number of engineers and scientists.

Also in accordance with Ardichvil, Zavyalova and Minina, two distinct worlds can be distinguished among the BRIC countries in the analysis of the prioritization of information and communication technology by the government. Here Russia and Brazil are ranked closely together at 112 and 113, very distant from India and China, which appear among the first 40 places. The results of the study suggest that in terms of the human capital present, Russia and Brazil are ahead of China and India. Nonetheless, during the last decade the governments of the latter two countries, to the contrary of the government of the first two, started impressive national human capital development programs, which include significant investment and strong government regulation in the education area (primary and secondary education, vocational education and third level, especially in scientific and technological areas).

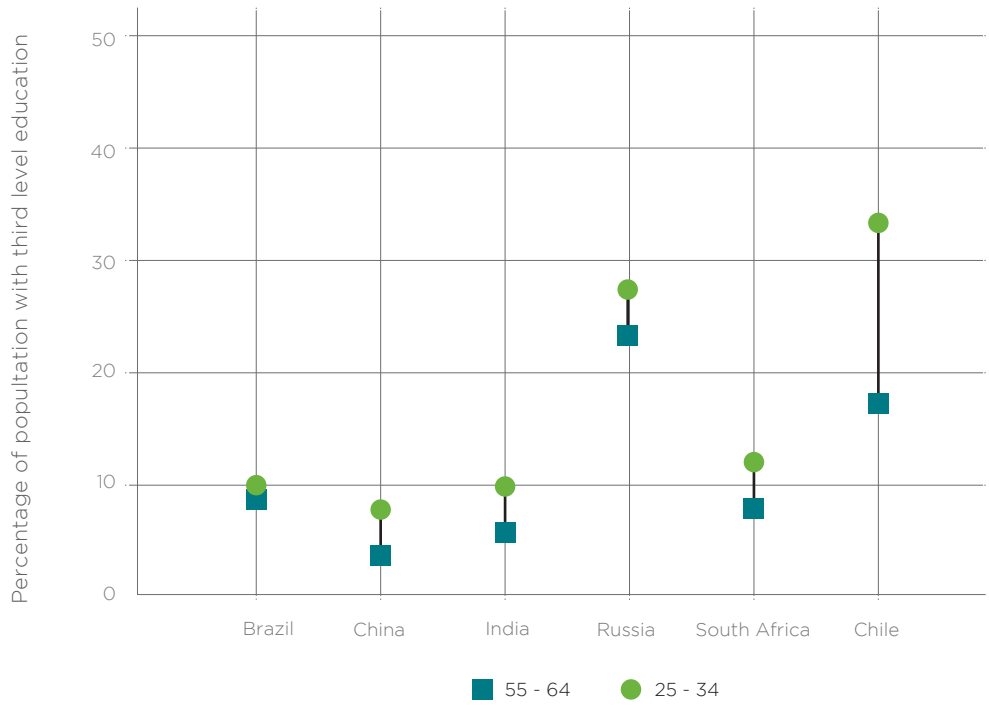
India's investment in human resources, science and technology, and the strengthening of research and development structure dates from the 1950s. Currently the country has difficulties in promoting the inclusion of its immense population in third level education, but it possesses important centers of excellence. China, in turn, has invested heavily in Science, Technology and Innovation in recent years, associating inclusion and improvement in teaching

quality, culminating with the recent launch of a project to develop 100 universities with high levels of excellence at a global level. Russia and Brazil stand out for inclusion and have as targets programs in some of the area mentioned above, however, they lack wide-ranging strategies for the mid and long term, capable of covering the entire field of education and coordinating the efforts of various state agencies and political institutions.[65]

Figure 2.4.4 shows the percentage of the population who have third level education per age group for 2005. It can be noted that Brazil starts from a much lower level in relation to countries such as Chile and Russia. Moreover, what calls attention is the fact that Brazil, unlike the other countries analyzed, has not had a significant increase in the percentage of the graduate population in generation between 25 - 34 years of age in the year of reference (represented by triangles) in relation to this percentage in the generation aged between 55 and 64 years of age (represented by squares). This is precisely the effect of the deficit in investment in education in previous generations, which are now responsible for educating coming generations, a deficit which programs aimed at attracted skilled immigrants will undermine.

Figure 2.4.4

Percentage of population with third level education in two age groups (25 - 34 years and 55 - 64 years), BRIC countries, South Africa, and Chile, 2005



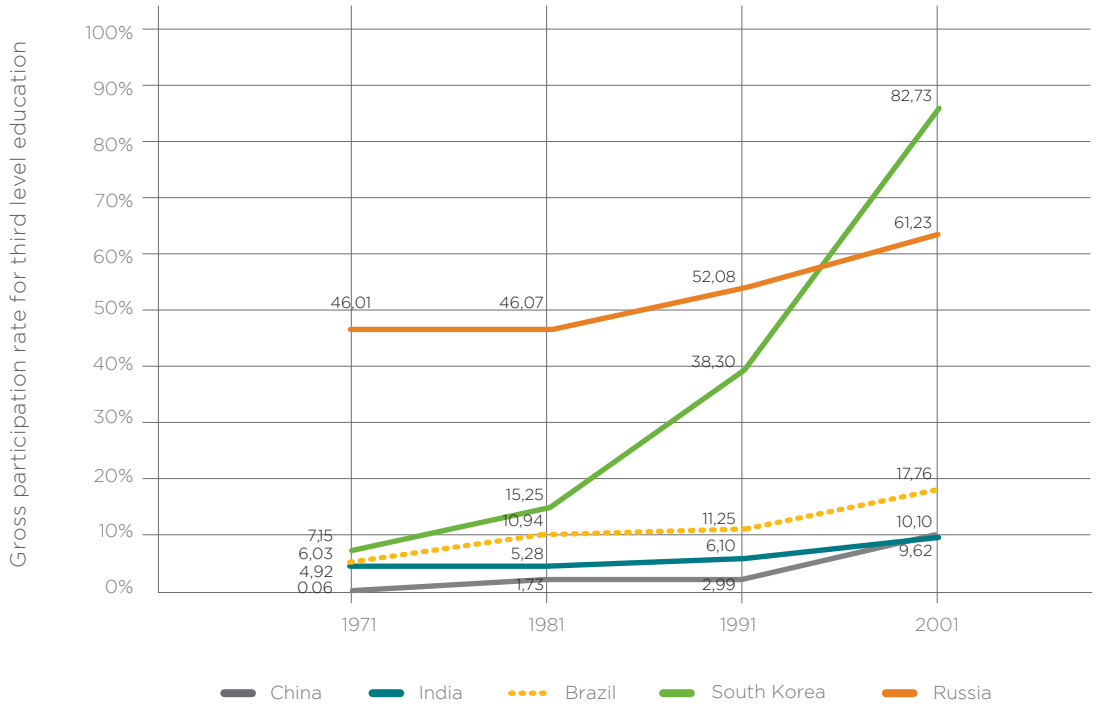
Source: FGV/DAPP based on OECD data.

Figure 2.4.5 below presents a comparison between the gross rate of third level education for the BRIC countries and South Korea between 1971 and 2001, indicating the relationship between the total registrations, irrespective of age, for the population in the age group which officially corresponds to the level of education shown. What is obvious here is the relative stagnation of Brazil in relation to the incredible advance of South Korea, included in the figure

because it is renowned for its investment in education, which has resulted in the fruits that the country has been collecting in relation to innovation and economic development. Russia, as well as starting from a level far above Brazil, has enjoyed a considerable relative advances. Even China, despite starting from a very low base, has enjoyed, especially from the 1990s onwards, a significant relative advance, even more impressive if the size of its population is taken into account.

Figure 2.4.5

Comparison between the gross education rate in third level education, BRIC countries and South Korea, 1971-2001, (indicates the relationship between the total number of registrations, irrespective of age, to the population of the age group which officially corresponds to the education level shown)

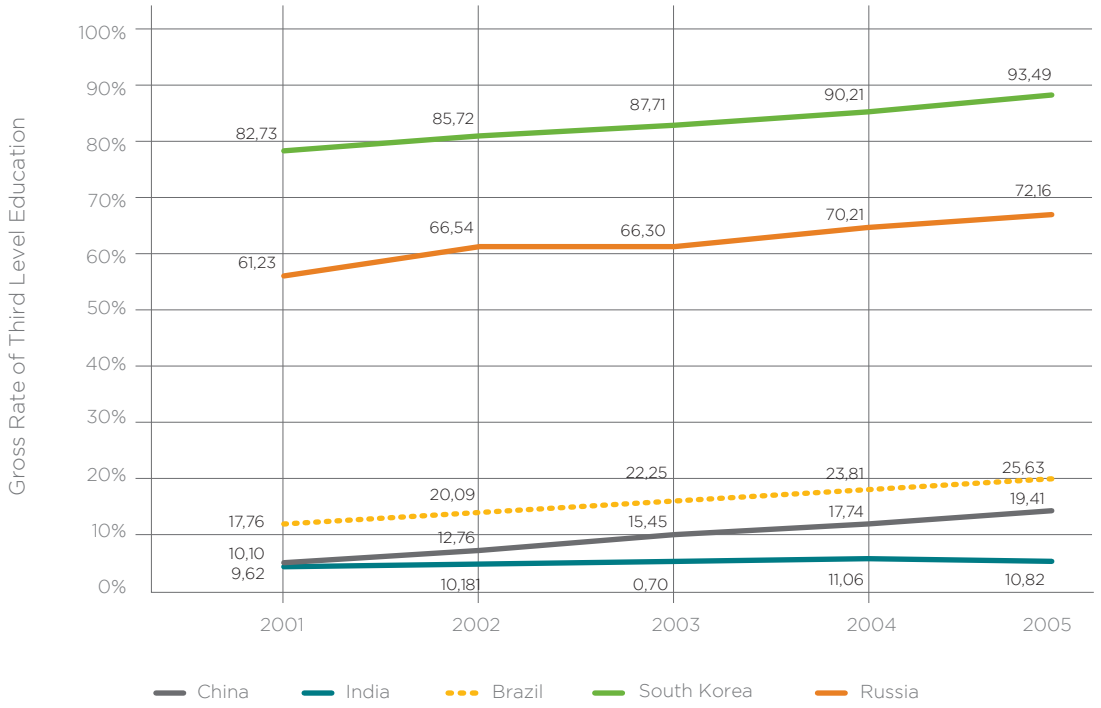


Source: FGV/DAPP based on World Bank data.

Figure 2.4.6 extends the analysis of Figure 2.4.5 to 2001 and 2005. Here there can be noted an important acceleration in the advance of China, built on the advance which resulted from the investment that commenced in the 1990s. Also notable is the relative advance of Brazil, in relation to the inclusion of people in third level education in this short interval of time. However it can be argued that the high levels of inclusion in education achieved by Brazil in very recent years were not necessarily accompanied by a correlated increase in the quality of education provided, as investment in education has an incremental and long-term nature. The attraction of qualified immigrants is one of the possible paths to stimulate the increase in critical mass, in order to allow a more rapid transition.

Figure 2.4.6

Comparison between the gross enrollment rate for third level, BRIC countries and South Korea, 2001-2005 (indicates the relationship between the total number of registrations, irrespective of age, to the population of the age group which officially corresponds to the education level shown)



Source: FGV/DAPP based on World Bank data

As Coentro observed, Brazil has actually enjoyed a substantial improvement in education indicators in recent years. Not only in basic level education, but also third level. According to IBGE data, between 1999 and 2009, the average years of study of Brazilians aged 10 or over increased from 5.8 years to 7.2.[66] Together with an increase of 20.3% in the economically active population (EAP), which occurred between 2001 and 2009, the part of the population who have at least completed third level education advanced by 82.6%. In the same period the number of individuals who obtained each year masters degrees (both academic and 'professional') and doctorates almost doubled (an increase of 93%), rising from 26,000 in 2001 to 50,200 in 2009.[67] A 2010 publication from the Center of Strategic and Management Studies,[68] based on data from the 2000 IBGE census, calculated that in 2000, approximately 305,000 individuals aged 25 or more had studied at least one year of a masters or doctoral course. 68% of this contingent resided in the Southeastern Region.[69] Among them approximately 14,000 (4.7%) were born abroad. Nevertheless, it can be said that despite the considerable improvement in the indicators referring to education in recent years, there still seems to persist, as a result of the historic lack of adequate investment in education, a lack of specialized labor, especially technical and scientific staff, in various Brazilian industries, including shipbuilding, petrochemical, and information technology.[70]

While the country spent around 5% of its Gross Domestic Product (GDP) on education, Brazilian students have been achieving very low positions in international evaluations,[71] as shown in Table II of the Annex. It is also true that higher level education in Brazil, despite the existence of some 'islands of excellence', has serious problems, which implies

that employers are obliged to pay part of the costs of training and qualification. According to recommendations made by the OECD in 2010 about the stimulation of socio-economic prosperity in Brazil, among the principal problems to be overcome are the coverage of basic level education and the quality of higher level education as a barrier to the promotion of innovation. In the same report it is argued that the quality of education in Brazil can be improved through an increase in the cost-efficiency relationship of public education, since the levels of expenditure are already relatively high.

Educational deficiencies in Brazil threaten to harm the country's growth. We can take the problem to be even greater if we also take into account that Brazil does not have sufficient human resources to, shall we say, 'educate the educators' at a sufficient speed. It is precisely in this way that the attraction of talent must be part of the national development strategy. Unlike what occurred with India and China, Brazil is a country with solid democratic institutions and relatively few political, ethnic or religious conflicts, factors which make the country an attractive local for skilled professionals.

2.5 IMMIGRANT POPULATIONS AS THE SUBJECT OF ANALYSIS: APPROACHES AND THE DEMOGRAPHIC PROFILE OF THE IMMIGRANT POPULATION IN BRAZIL

SUMMARY

- In addition to the strictly economic relations which are created by the supply and demand of employment positions in determined labor markets, what also has to be considered is the way in which belonging to different collectivities (families, ethnic or cultural groups, religions, etc.) condition the decision to emigrate.
- Growing control and reflection on the phenomenon of migration has created an unprecedented amount of information about the characteristics of immigrants (gender, age, religion, precedence, level of education, etc.). However, in the Brazilian case there is not much data available.
- There has been a considerable increase in the proportion of skilled immigrant workers who have received visas to work in the country.
- There is a need for an immigration policy aimed at skilled immigrants as a vector for national development which takes into account opportunities for development at the regional and local levels.
- The Brazilian government can, through policies that are strategically oriented at the attraction and retention of skilled professionals, take better advantage of its current status in the international scenario, in order to continue recent advances in the economic, social and geopolitical levels.

Before presenting an analysis of the profile of the immigrant population in Brazil, it is worth looking at some of the approaches prescribed to the question. Part of the problem in dealing with the question of immigration is that the emergence of a profound debate about the theme is relatively recent and incipient. To a great extent this late development occurred because there is no single conceptual framework apt to serve as a reference for these studies. Migration research involves almost the totality of the so-called social sciences, amongst which we can highlight: economy, sociology, anthropology, demography, geography, social psychology, political science, etc. After studying some classical authors, Richmond[72] suggests that the question of migration has been treated more as an effect of the development of capitalism, or of the industrialization and urbanization process, than as a theme in itself.[73] An example of this is the approach prescribed by the celebrated sociologist Max Weber - for whom the development of capitalism occurs through the processes of industrialization, urbanization and the increase in population mobility - and the original reflection on the phenomenon of migration produced by the demographer Thomas Malthus, for whom an increase in migration is the inevitable consequence of overpopulation.

At the beginning of the twentieth century, migration was look at by US sociologists in terms of the social problems produced as a result of the growing population flow from Europe to US cities. One of the pioneering studies of Thomas

and Znaiecki demonstrated how the migration process functioned to break traditional ties of solidarity, particularly of the family system, throwing immigrants into a new world predominantly ruled by social ties created through labor relations and market exchanges.[74] Ethnic minorities, immigrants and women were likely to remain in industries and labor markets seen as marginal. Immigrants did not count on protection networks, and were even frequently prevented from participating in trade unions. As a result of institutionalized discrimination, immigrants, especially those belonging to minorities, were more likely to accept low paid work and precarious working conditions, as well as temporary work without labor guarantees.

According to Gabaccia, growing contemporary interest in the migration phenomenon is considerably marked by economic analyses, which see immigrants more as individuals than as being part of social relations networks[75]. He also argues that a new approach to international migrations has been emerging, taking as a starting point the creation of a transnational space of relations, which runs across cultural, geographic, political and legal frontiers. According to this approach, immigrants appear as parts of transnational networks which connect people, projects, interests and institutions in different parts of the globe.

The economic approach identified in the neo-classical cannon argues that most international migratory flows are induced by regulation between the supply and demand of employment positions, resulting in wage differences in various labor markets. For neo-classical authors the decision to migrate results from the calculation of the costs and benefits involved in migration. The success of the migrant is determined by factors such as education, work experience, time spent in the destination, etc.[76]

Authors such as Portes have criticized the neo-classical approach as they believe that economic relations should not be overvalued to the detriment of socially oriented expectations.[77] In other words, migrants should not be seen primarily as maximizing individuals, extirpated from their social relations, but rather as members of social structures with complex behavior which conditions their spatial and socio-economic mobility.[78]

In recent years the so-called new migration economists have challenged the hypotheses and conclusions of neo-classical theory.[79] Authors such as Massey and Sasaki and Assis, for example, suggest that the principal contribution of the new approach lies in the fact that the reasons for migration are better understood by taking as a reference groups of people and not atomized individuals involved in a decision making process.[80] The feeling of belonging to different ethnic and cultural groups, to religious beliefs, etc. conditions the decision to emigrate, as well as the choice of destination country. These authors suggest that families, or domiciliary units, as well as other culturally established production and consumption units, and relational networks, prevail over individual interests, and should be the principal focus of analysis when trying to understand the question of migration. In this way, in addition to the differences in income and public policies aimed at attracting migrants, it is necessary to take into account the protection networks created by immigrants, also as an artifice for the minimization of the risks inherent to fluctuations in labor markets. A classic example is the network of immigrants in Greater Boston coming from the Brazilian city of Governador Valadares.[81]

Nevertheless, it is fundamental when drafting immigration policies that we are capable of taking into account economic questions, questions related to the model of society we intend to construct, and the way we intend to integrate immigrants into this. According to the IOM report:

> *"In conclusion, policy options oscillate between making migration a structural demographic and labour market factor and treating it as merely ancillary, not overly relevant to a country's demographic and economic future. The reality is that, given global and regional labour market and demographic trends and disparities, migration has become essential for economic growth, development and competitiveness. Effective strategies would aim to balance long- and short-term considerations, reconcile the interests of home countries, host countries and migrants, and strive for maximum coherence between migration policy and other domains, particularly investments, incentives and regulations pertaining to labour markets, employment, family and education and training. Finally, while many arguments can be made in either direction of the debate, the decision is ultimately a political one that will be context-specific and one that must be based on societal consensus and ethical considerations. The maxim that migration is about people, not factors of production, remains as valid as ever. Therefore, policy decisions must take equal account of economic and market demands and the human development priorities of individuals and societies".*[82]

In other words, it is necessary to make the reservation that immigration policy should be seen as more than the logic of economic development, and that it is fundamental to pay attention to the multiple and plural contributions of new immigrants to the country.

2.5.1 DESCRIPTIVE ANALYSIS OF THE PROFILE OF IMMIGRANTS IN BRAZIL

Between 1986 and 1991, the amount of international immigrants who entered Brazil amounted to approximately 66,000, of whom a part equivalent to 47% was represented by Brazilians living abroad returning to the country. Between 1995 and 2000, the entrance of international immigrants amounted to 144,000, of whom 61% were returning Brazilians. Among the returnees those coming from the United States had on average an education of 11 to 16 years of study.[83]

Among the foreigners entering the country, 48.7% originated in Latin American countries, 22.5% in Europe and 7.7% in the United States. In relation to years of study and the qualifications of foreign immigrants in Brazil, it was found that between 1986 and 1991, 57.2% of them possessed 12 years of study or more. Between 1995 and 2000 this percentage rose to 58.1%. This signified an increase of 53% in the amount of skilled labor between the two periods.[84] The following decade this tendency increased. It should be highlighted that in the final 20 or 30 years of the twentieth century Brazil was becoming a country of international emigrants.[85] However, with the increase in the impact of the global recession after 2008 there was a reconfiguration of the migratory flow in the world and as a result Brazil once again became a country attractive to foreigners.

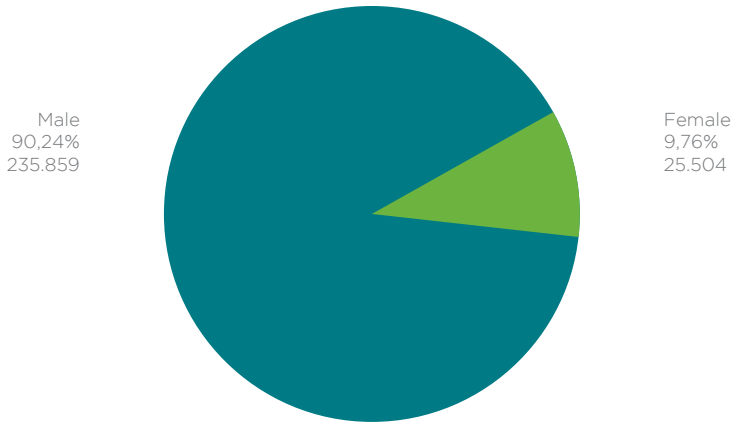
In recent years the growing control and reflection on the migratory phenomenon has brought with it an unprecedented amount of information about the characteristics of immigrants (gender, age, religion, origin, level of education, etc.). However, in the Brazilian case there is relatively little data available. Below is an analysis of the profile of the population of immigrants in Brazil, in which were used the databases of the Ministry of Labor and Employment (2006-2011) and the 2010 IBGE Census.

2.5.1.1 GENDER

Analyzing the profile of the immigrant worker in Brazil a predominance of male workers can be noted. Figure 2.5.1.1.1, using data from the Ministry of Labor and Employment, demonstrates that approximately 90% of immigrant workers in country are male. As we will see later, the unemployment rates in developed countries are usually higher among female workers, both in the labor market in general and in the market of highly skilled labor, which may indicate the need for specific policies aimed at attracting women.

Figure 2.5.1.1.1

Percentage of visas granted to foreign workers by gender, 2006-2011



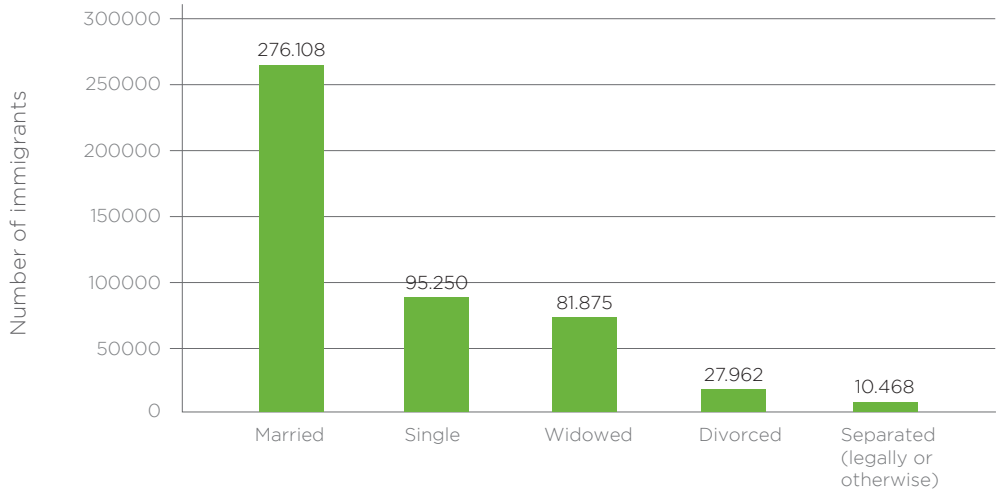
Source: DAPP/FGV based on MTE data.

2.5.1.2 CIVIL STATUS

According to data from the 2010 Census, there are approximately 276,000 married immigrants living in the country, against approximately 95,000 single persons and 81,000 widows or widowers.

Figure 2.5.1.2.1

Total number of immigrants living in Brazil (aged 25 or over) by civil status, 2010

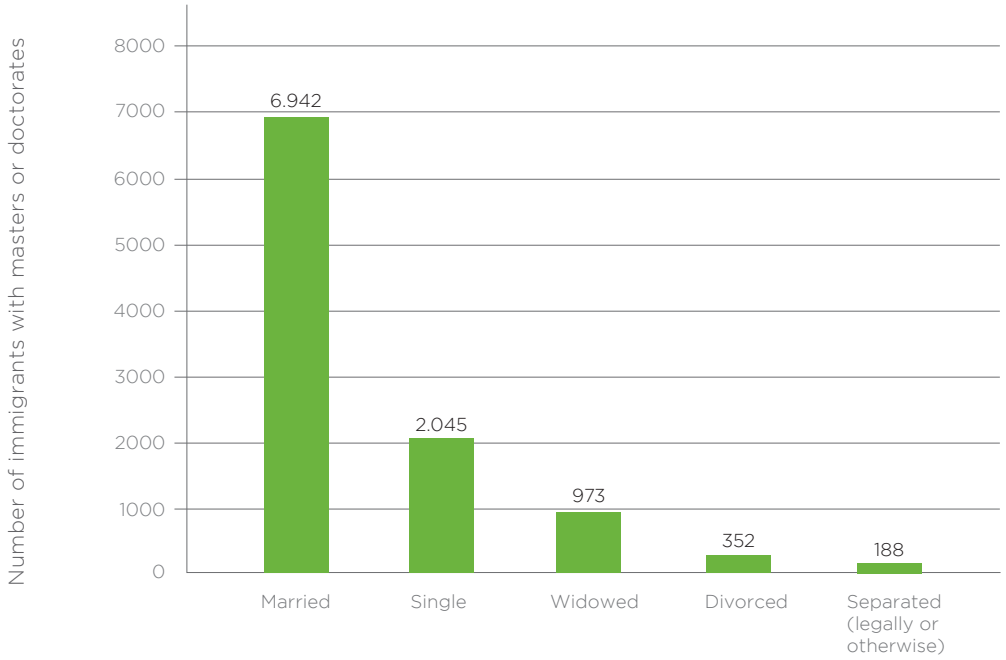


Source: DAPP/FGV based on 2010 Census data.

Also according to the 2010 Census data, when only highly qualified immigrants (those with masters or doctorates) in the country are analyzed, around 7,000 were married, 2,000 single, 1,000 divorced and only 350 widowed.

Figure 2.5.1.2.2

Total number of immigrants with master's degrees or doctorates living in Brazil (people aged 25 or over) by civil status, 2010



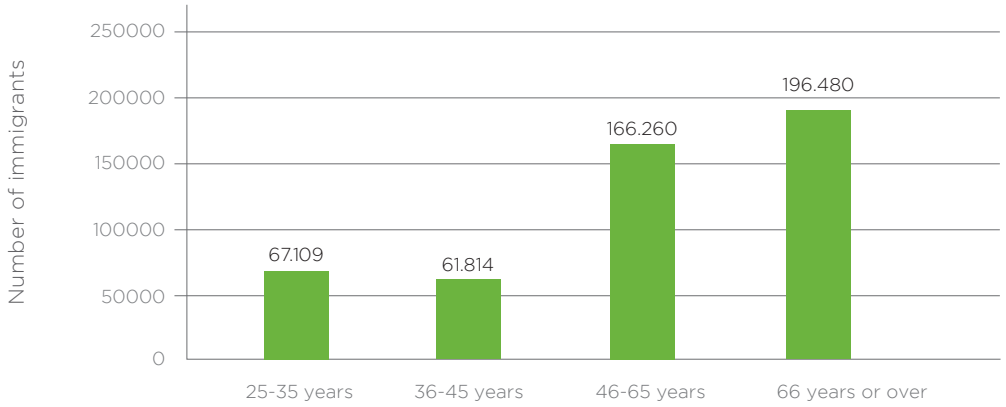
Source: DAPP/FGV based on data from the 2010 Census

2.5.1.3 AGE GROUP

While in the world the majority of immigrants are individuals aged between 15 and 30 years[86], in Brazil there is a predominance of immigrants in the 66 and above age group, followed by the 46 - 65 group (Figure 2.5.1.3.1).

Figure 2.5.1.3.1

Total number of immigrants living in Brazil by age group (persons aged 25 and over), 2010



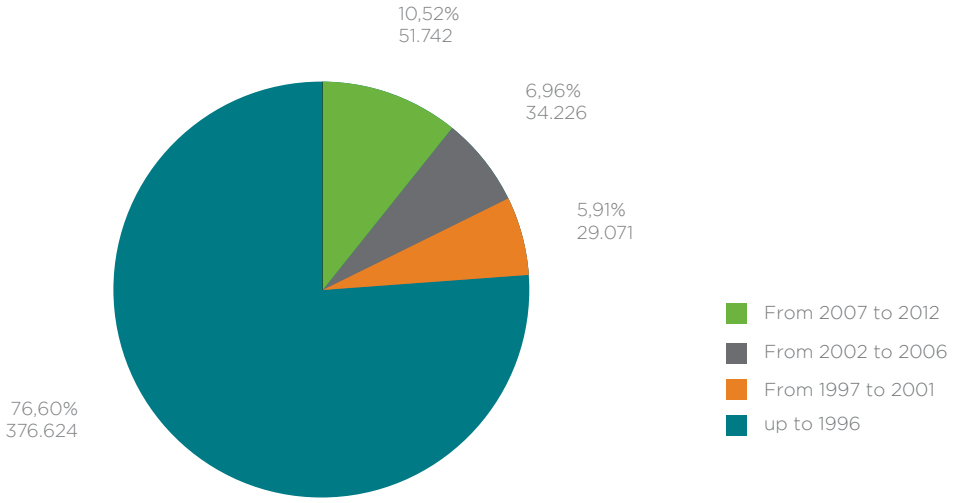
SOURCE: DAPP/FGV based on data from the 2010 Census.

2.5.1.4 TIME OF RESIDENCE

The predominance of immigrants of an advanced age is justified by the arrival of retired persons or professionals at the end of their career, but also as the result of the ageing of a population of immigrants, since the majority of the population of immigrants who live in Brazil established residence in the country before 1996. A new increase in the growth of the population of immigrants can be found in the 2000s, especially in the second half of the decade.

Figure 2.5.1.4.1

Percentages of total immigrants living in Brazil per period in which they established residence country (individuals aged 25 and over), 2010



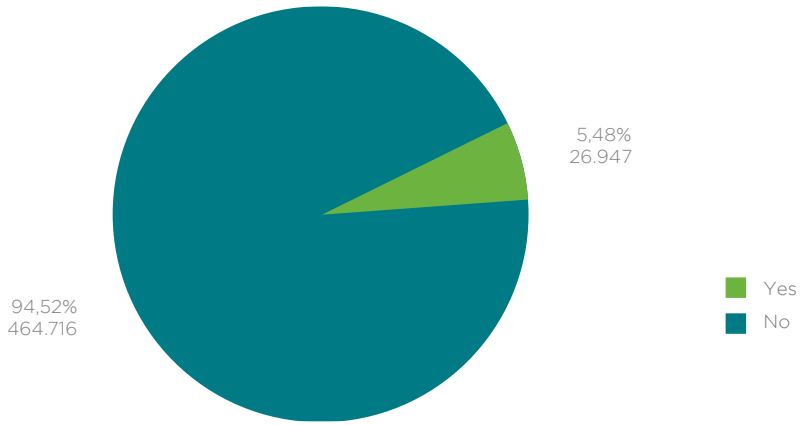
Source: DAPP/FGV based on data from the 2010 Census

2.5.1.5 ENROLLMENT RATES

According to the information revealed in Figure 2.5.1.5.1, the large majority of immigrants who live in Brazil were not in the year of reference continuing their studies (approximately 95%). It can be stated that the population of foreign immigrants in Brazil consists, above all, of workers with few skills, since according to the information presented in Figure 2.5.1.5.2, approximately 76% of them are not even university graduates. Immigrants with undergraduate and postgraduate qualifications only consist of approximately 22% of those analyzed. It should be noted that the proportion of immigrant workers with master's degrees and/or doctorates is only 2%.

Figure 2.5.1.5.1

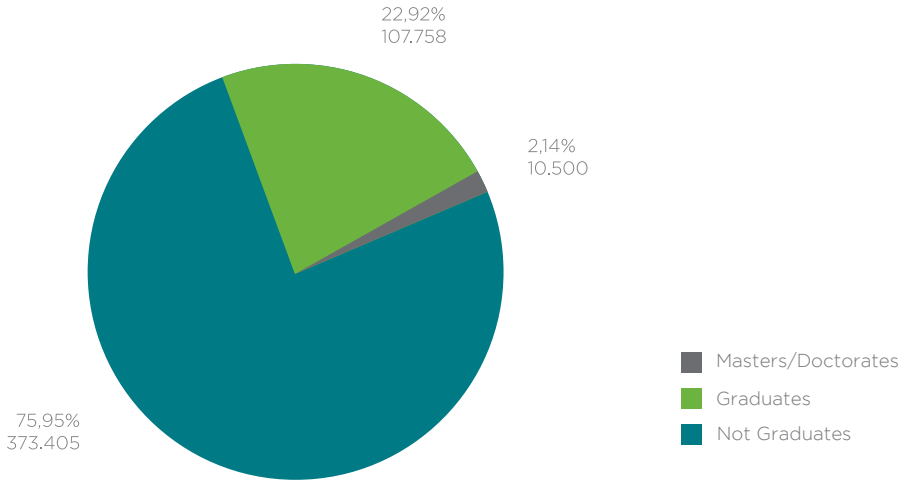
Percentage of immigrants living in Brazil who, in the year of reference, were continuing their studies (persons aged 25 and over), 2010



Source: DAPP/FGV based on data from the 2010 Census.

Figure 2.5.1.5.2

Percentage of immigrants living in Brazil by type of qualification: not graduates, graduates, master's degrees/doctorates (persons aged 25 and over), 2010



Source: DAPP/FGV based on data from the 2010 Census.

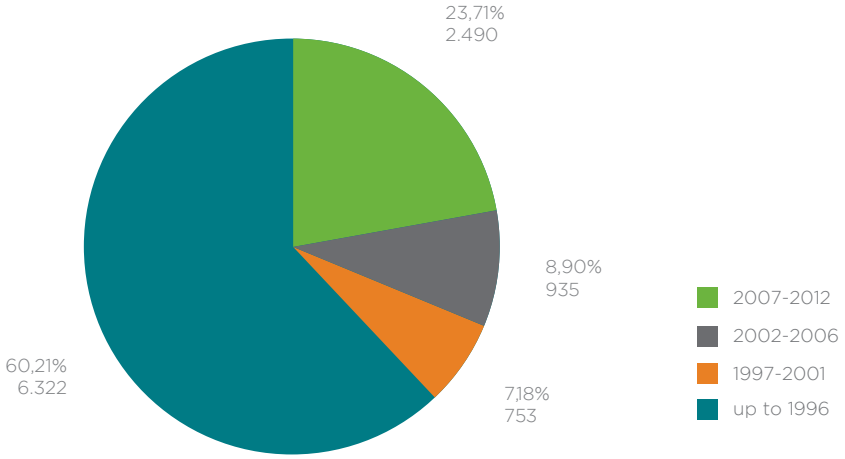
2.5.1.6 TIME OF RESIDENCE AND ENROLLMENT RATES

Figure 2.5.1.6.1 demonstrates that, as has been mentioned above, the number of immigrants who have master's degrees and doctorates in Brazil has grown at rates that are relatively superior to the total growth of the population of immigrants in the last four years, a fact which, in addition to reflecting the increase in the level of education in global

terms is related to the consequences of the 2008 economic crisis, which resulted in a greater interest of this type of worker in Brazil. What also should be noted is the importance of the development of shipbuilding and oceanic industry in the wake of new discoveries, as well as investments in the oil area. Looking at Figure 2.5.1.6.2, it can be seen that there is a large contingent of immigrants who have not completed third level education, who reached the country in 1996 or before.

Figure 2.5.1.6.1

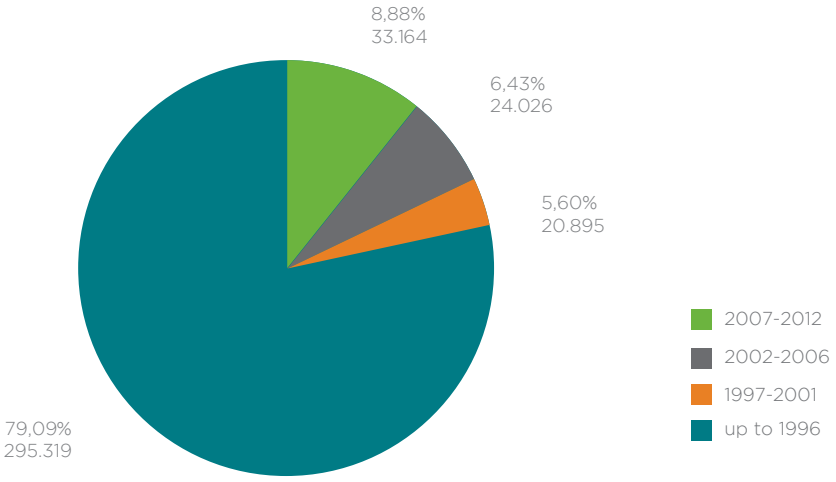
Percentages of immigrants with masters/doctorates living in Brazil by the period in which they established residence in the country (persons aged 25 and over), 2010



Source: DAPP/FGV based on data from the 2010 Census.

Figure 2.5.1.6.2

Percentage of non-graduate immigrants living in Brazil by the period in which they established residence in the country (persons aged 25 and over), 2010



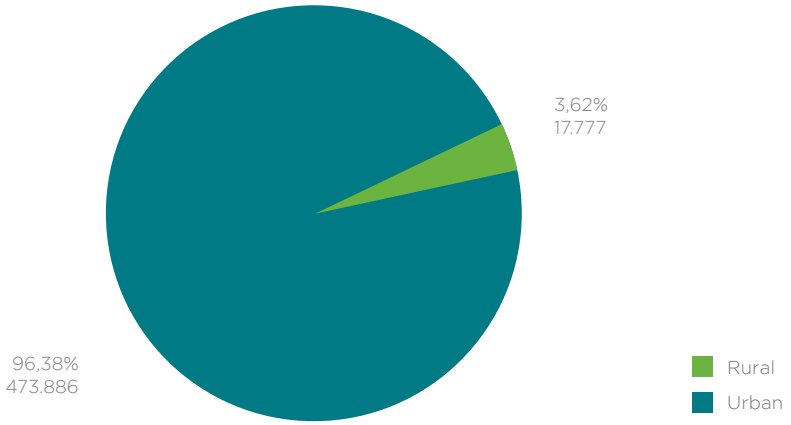
Source: DAPP/FGV based on data from the 2010 Census.

2.5.1.7 DOMICILE SITUATION

It is interesting in the description of the profile of immigrants in Brazil that they almost always live in urban areas, which reflects the fact that most of the foreigners who arrive in Brazil come in search of work opportunities.

Figure 2.5.1.7.1

Percentage of immigrants living in Brazil per domicile situation: urban versus rural (individuals aged 25 and over), 2010



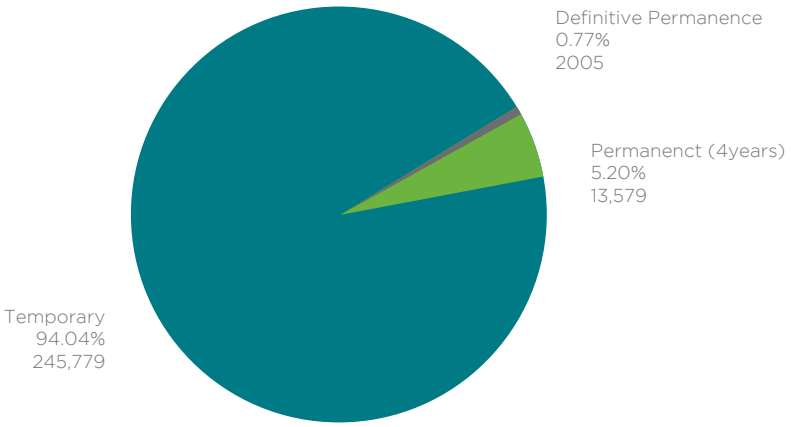
Source: DAPP/FGV based on MTE data.

2.5.1.8 TYPOLOGY OF VISAS

Figure 2.5.1.8.1 shows that the large majority, 94%, of visas issued for foreign workers are temporary visas.

Figure 2.5.1.8.1

Percentage of permanent work visas versus temporary visas granted by the Brazilian government, 2006-2011

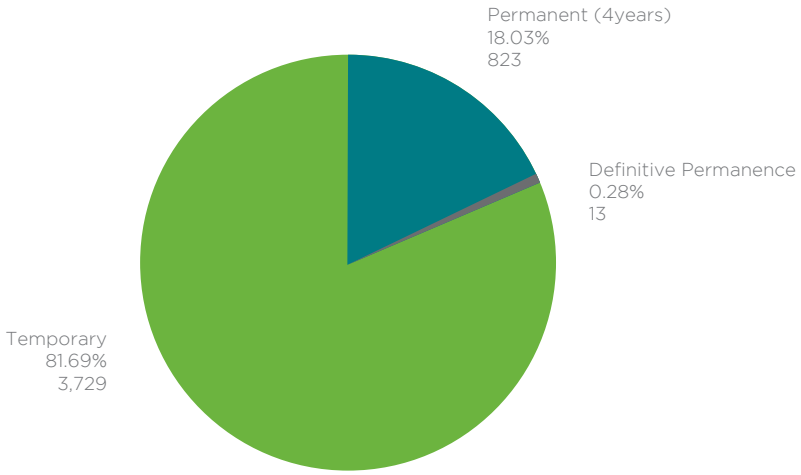


Source: DAPP/FGV based on MTE data.

Actually the majority of visas granted to foreign workers are temporary and do not involve an establishment of residence. Figure 2.5.1.8.2 demonstrates that when we analyze only the visas granted to highly skilled workers, the proportion of temporary visas is reduced, though it still remains high at 81.69%. Temporary visas can be considered an interesting solution, to the extent that they provide greater flexibility and dynamism in the allocation of skills in accordance with the emerging needs in the market. On the other hand, permanent visas are fundamental for the retention of talent in areas that are strategic for national development.

Figure 2.5.1.8.2

Percentage of permanent and temporary work visas granted by the Brazilian government to highly skilled workers (16 years of study or more), 2006-2011

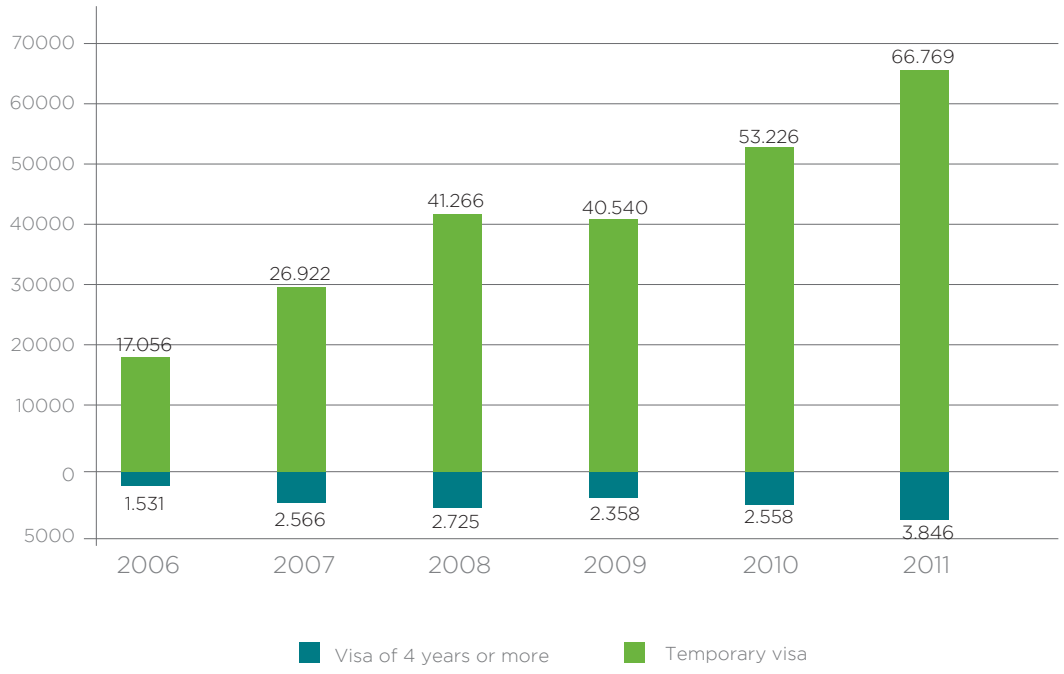


Source: DAPP/FGV based on MTE data.

Figure 2.5.1.8.3 shows an increase in the total number of work visas granted. Between 2006 and 2011, it can be noted that the number of visas for stays of four years or more grew by a little more than double, while the number of temporary visas almost quadrupled.

Figure 2.5.1.8.3

Historic series of number of visas granted by the Brazilian government to foreign workers per length of stay (temporary versus stay of four years or more), 2006-2011

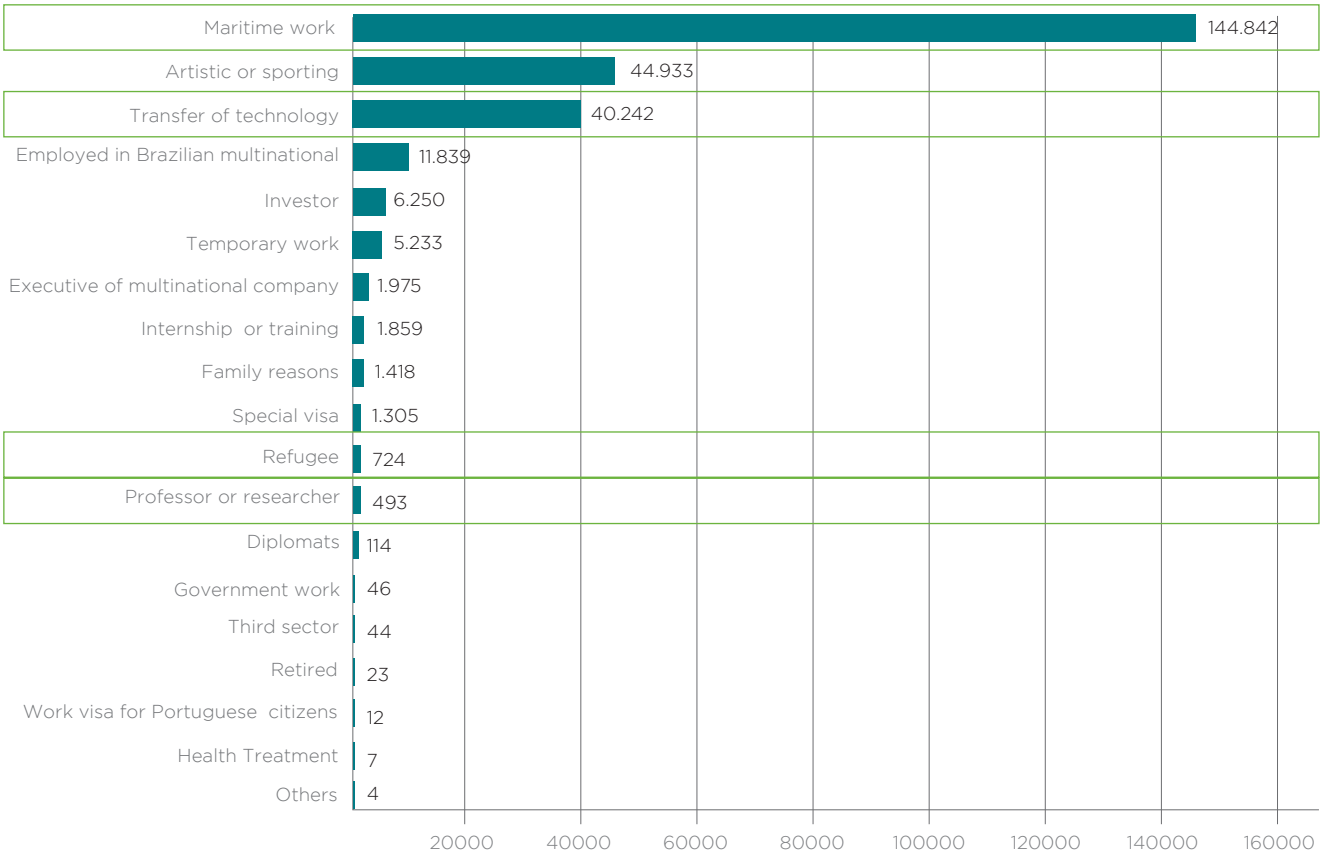


Source DAPP/FGV based on MTE data.

As shown by Figure 2.5.1.8.4, the types of visa most issued to foreign workers in Brazil refer to occupations usually filled by individuals who just have a third level degree. The enormous importance of occupation in maritime labor can be noted, propelled by the growth of the oil industry and by the correlated growth of the shipbuilding industry. Also worth noting, in comparison with the other categories, is the significant number of visas granted to workers admitted for the transfer of technology or to provide technical assistance or services. On the other hand, the low number of visas granted to university professors or researchers also calls attention.

Figure 2.5.1.8.4

Numbers of different types of work visas issued by the Brazilian government, 2006-2011



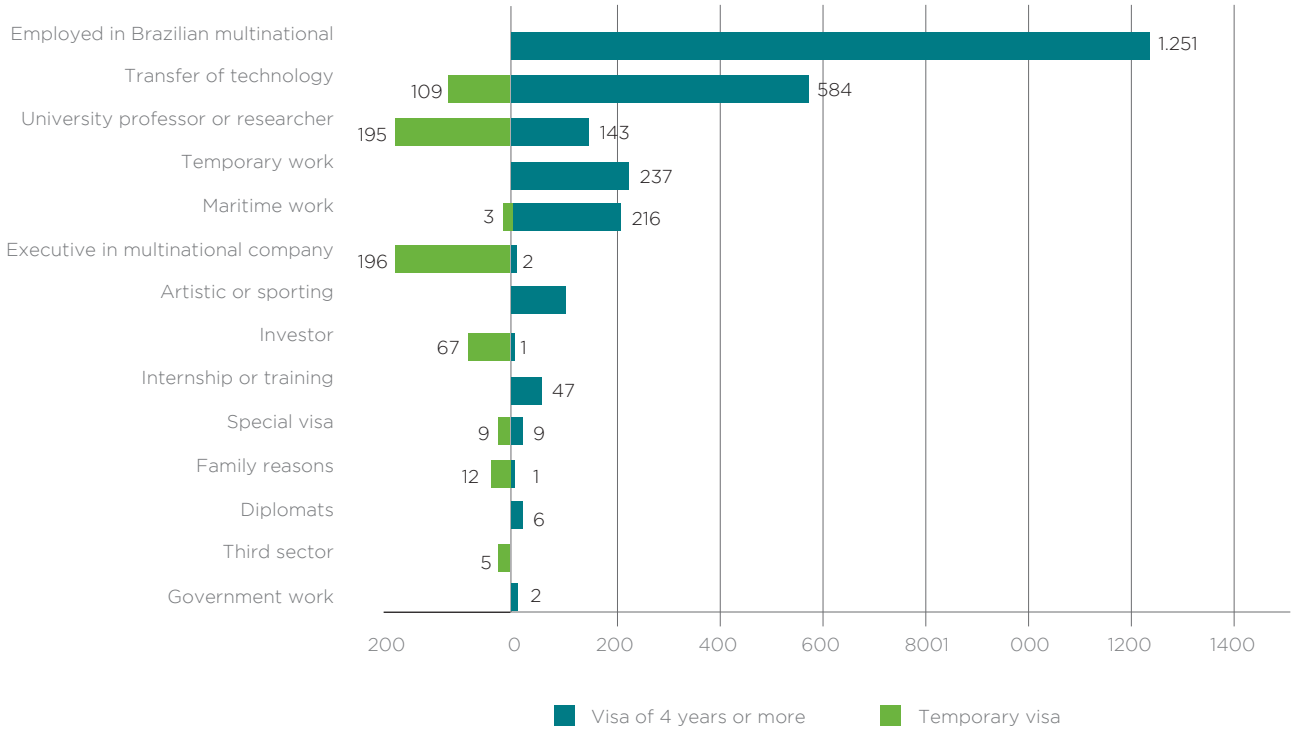
Source: DAPP/FGV based on MTE data

- The category of Maritime Work covers all activities carried out on vessels or maritime platforms, including the oil industry, tourism and fishing vessels.
- Transfer of Technology is understood to be any type of cooperation accord or agreement, whether or not any employment is involved, so that foreigners can work in areas related to technical assistance (specifically excluded from technical assistance are administrative, financial and managerial functions) or the actual transfer of technology.
- The social condition of refugee is granted by the Ministry of Justice to individuals who for reasons related to their ethnicity, religion, social group or political position, are persecuted in their country of origin or other country. This decision of the Ministry of Justice is followed by other governmental agencies, such as the Ministry of Labor and Employment.
- According to the Ministry of Labor and Employment, visas are granted to foreign professors and researchers, scientists, top level researchers, or professionals with renowned knowledge to work in Brazilian universities or research centers.

Analyzing, in Figure 2.5.1.8.5, the work visas granted to foreign workers with 17 years of study or more between 2006 and 2011, we can note the relative importance of work visas for the transfer of technology and/or the rendering of services of assistance. It can also be noted that although the category of executive of a multinational company is not significant among the population of highly skilled foreign immigrants, there predominates among them visas for stays of four years or more. What also calls attention is the still relatively low, taking into account the population considered, number of permanent visas granted to professors or researchers, as reinforced by the annual accumulated historic series, which appears in Figure 2.5.1.8.6.

Figure 2.5.1.8.5

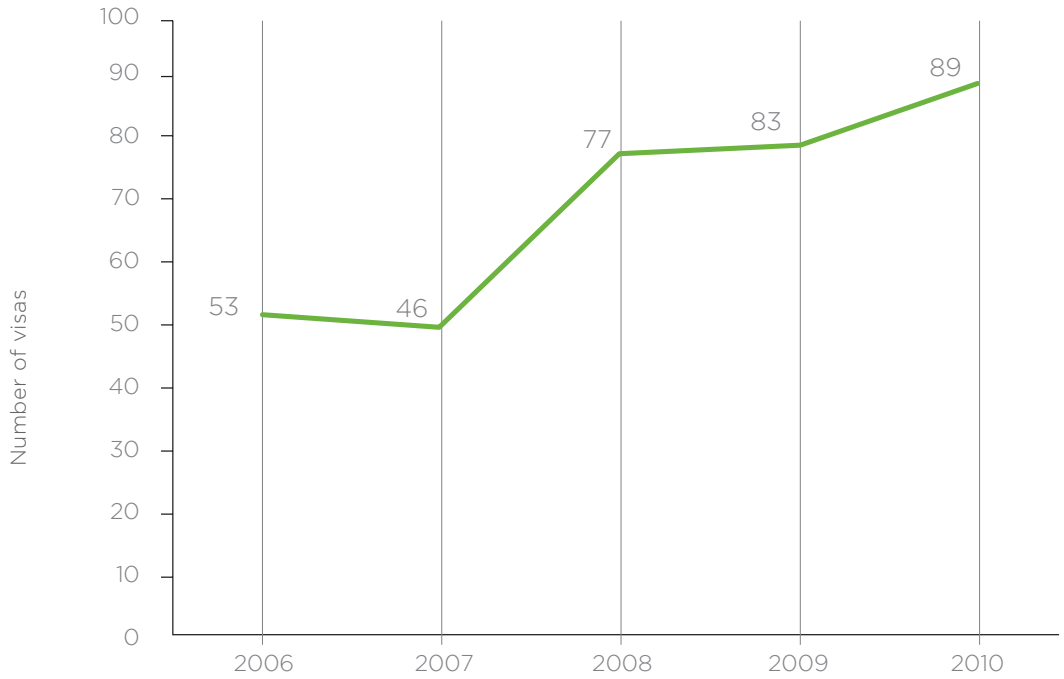
Numbers of visas issued by the Brazilian government to foreign workers with very high qualifications (17 years of study or more), according to the types of visa and their length of stay (temporary versus years or more), 2006-2011



Source: DAPP/FGV based on MTE data.

Figure 2.5.1.8.6

Historic series of number of visas granted by the Brazilian government to university professors and researchers, 2006-2011

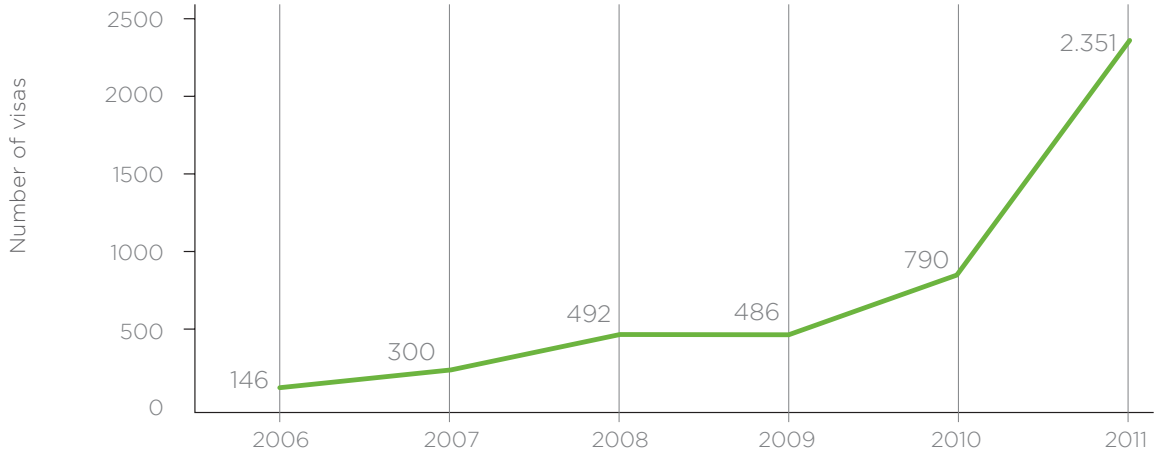


Source: DAPP/FGV based on MTE data.

The historic series of visas granted to highly skilled foreign workers, shown in Figure 2.5.1.8.7, reinforces the idea that few highly skilled workers enter the country, although an impressive increase has occurred in recent years, starting with 146 skilled workers in 2006, rising at a steady rate until 2009, when it reached 486, climbing to 790 in 2010, and culminating with an impressive 2351 in 2011.

Figure 2.5.1.8.7

Historic series of total number of work visas granted by the Brazilian government to highly skilled foreign workers (16 years of study or more), 2006-2011

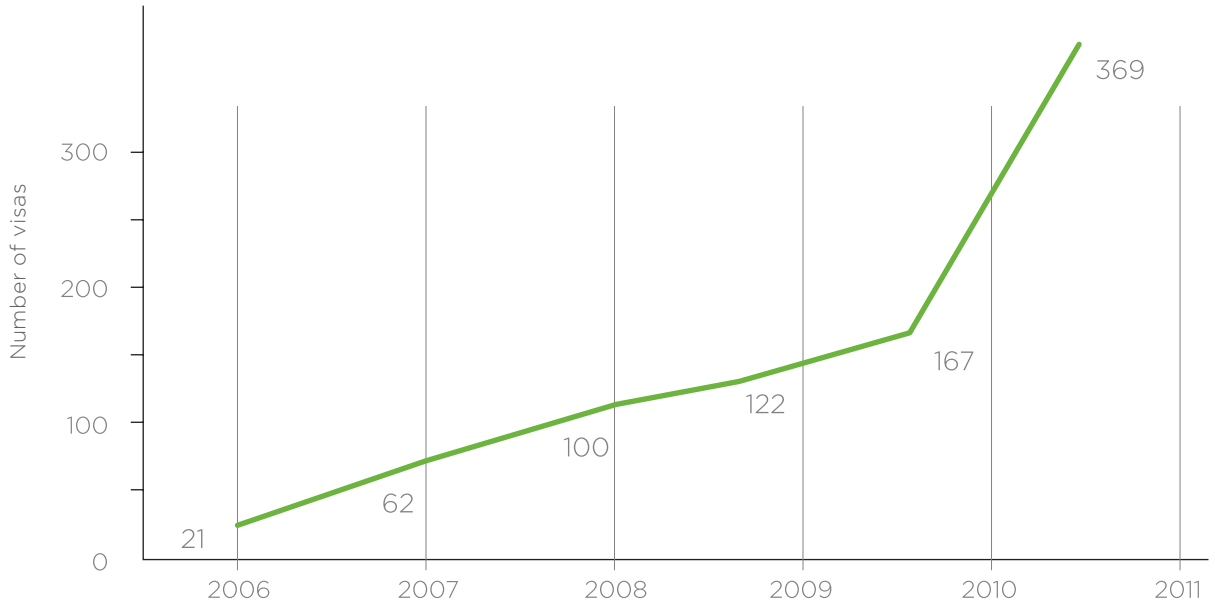


Source: DAPP/FGV based on MTE data.

When we look in greater detail at the historic series which only considers visas for four years or more, granted to individuals with 17 years of study or more, as shown in Figure 2.5.1.8.7, we can observe that few skilled professionals come to Brazil for long periods. In 2011, out of the total of 2351 visas granted to foreign workers with high levels of education, only 369 were issued for a period of four years or more, which may indicate the absence of a policy aimed at retaining talent.

Figure 2.5.1.8.8

Annual historic series of number of work visas for four years or more granted by the Brazilian government to highly skilled foreign workers (16 years of study or more), 2006-2011



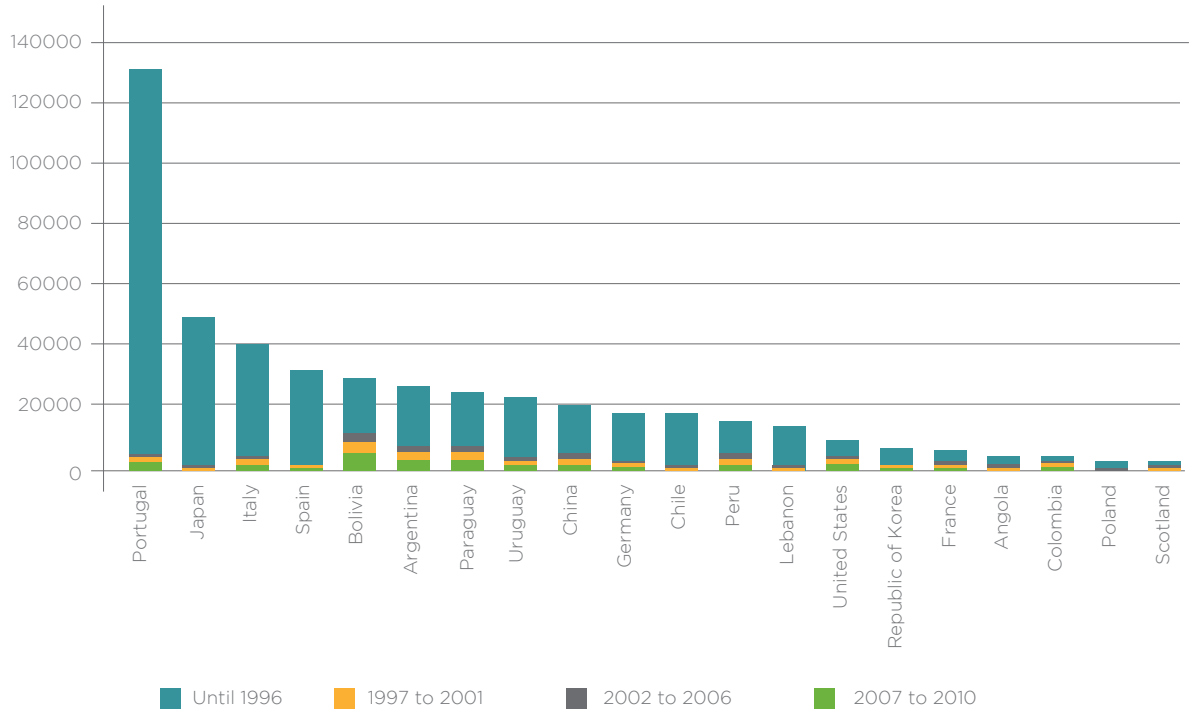
Source: DAPP/FGV based on MTE data.

2.5.1.9 COUNTRIES OF ORIGIN

The analysis of the 2010 Census data, as shown in Figure 2.5.1.9.1, reveals that most of the immigrants living in Brazil come from countries which have geographic, historic, and/or cultural-linguistic proximity. Among the eight countries which most sent immigrants to Brazil, seven (Portugal, Italy, Spain, Bolivia, Argentina, Paraguay and Uruguay) speak Latin languages and four are located in South America. In addition to the Brazilian economic hegemony in South America, as well as the evident historic ties which link Brazil and Portugal, the important roles of Japan, Italy and Germany should be highlighted. These are countries which have historic ties with Brazil, and from where departed the last great waves of populations which colonized the country, at the beginning of the nineteenth century in the German case, at the end of the same century in the Italian, and the beginning of the twentieth in the Japanese. Among the countries included in the figure, we also should highlight the relative importance of China, a country which has been establishing itself since 2009 as the largest commercial partner of Brazil. When we analyze the more recent immigrations, the Latin American countries and China gain importance in comparison with the other countries mentioned above.

Figure 2.5.1.9.1

Number of immigrants living in Brazil by country of origin (Ranking of the first 20) and the period in which they established residence in the country (individuals aged 25 and over), 2010

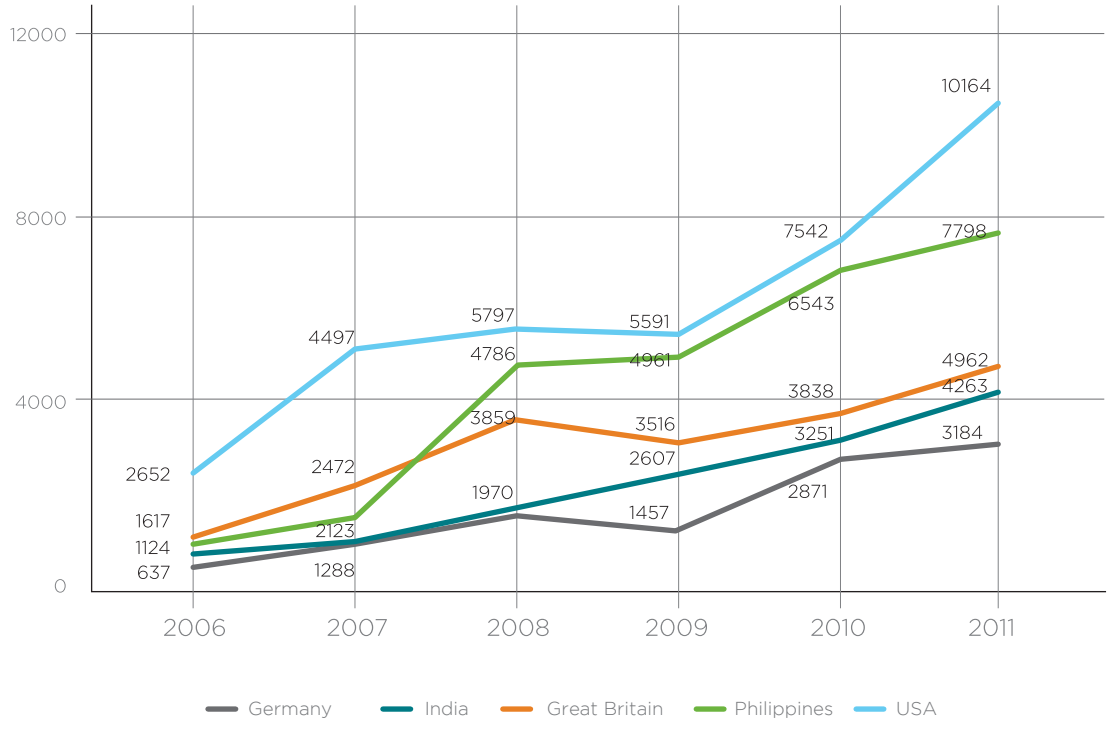


Source: DAPP/FGV based on data from the 2010 Census

When we analyze the immigrant population, using data about visas granted to immigrant workers obtained in the MTE database, we can see the phenomenon of immigration in Brazil from a new perspective. Figure 2.5.1.9.2 shows that in the countries which most sent migrants with work visas to Brazil in recent years, the numbers sent almost always rose, with the exception of the period 2008-2009. During this period the US was the country which most sent workers with visas to Brazil. What calls attention is the large number of individuals coming from the Philippines, justifiable by the high volume of nationals from this country who come for jobs in the naval and oceanic industries.

Figure 2.5.1.9.2

Historic series of the number of visas granted by the Brazilian government to foreign workers from different countries, showing the four countries which most sent legal workers, 2006-2011



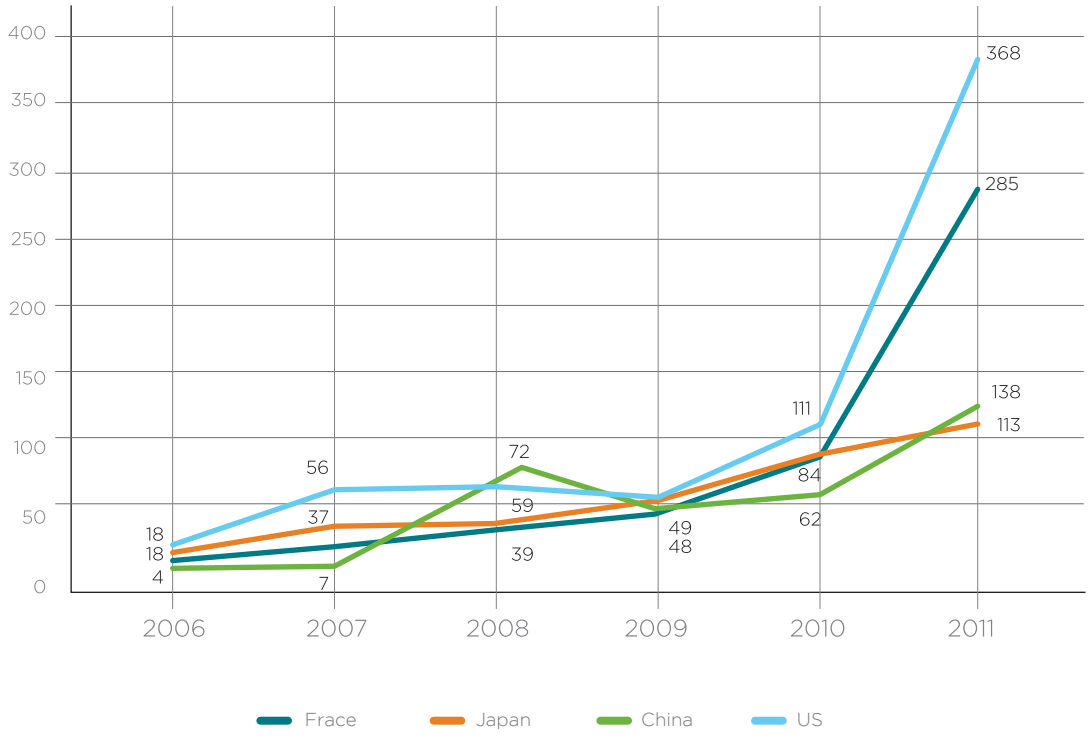
Source: DAPP/FGV based on MTE data.

Figure 2.5.1.9.3 shows the four countries from where the largest number of highly skilled foreigners came to work in Brazil. This small list includes countries such as the United States and France, which in addition to possessing important investment in the country, have suffered from the 2008 crisis and are still facing difficulties in recovering their markets.[87] The presence of Japanese and Chinese among the highly skilled foreigners who come to the country can be explained to a great extent by the important presence of multinationals from those countries in Brazil. According to data from the Central Bank and Federation of Industry of the State of São Paulo,

the investment of Chinese companies in Brazil jumped from 86 million dollars in 2009, to 17.7 billion dollars in 2010. Among the Japanese and Chinese companies based in Brazil, there is a concentration in the sectors of energy, oil and gas, mining, infrastructure, steel, agriculture and IT, in which there is a need for skilled labor.[88]

Figure 2.5.1.9.3

Historic series of number of visas granted by the Brazilian government to highly skilled foreign workers (16 years of study or more) by country of origin, showing the four countries which most sent workers in this category, 2006-2011

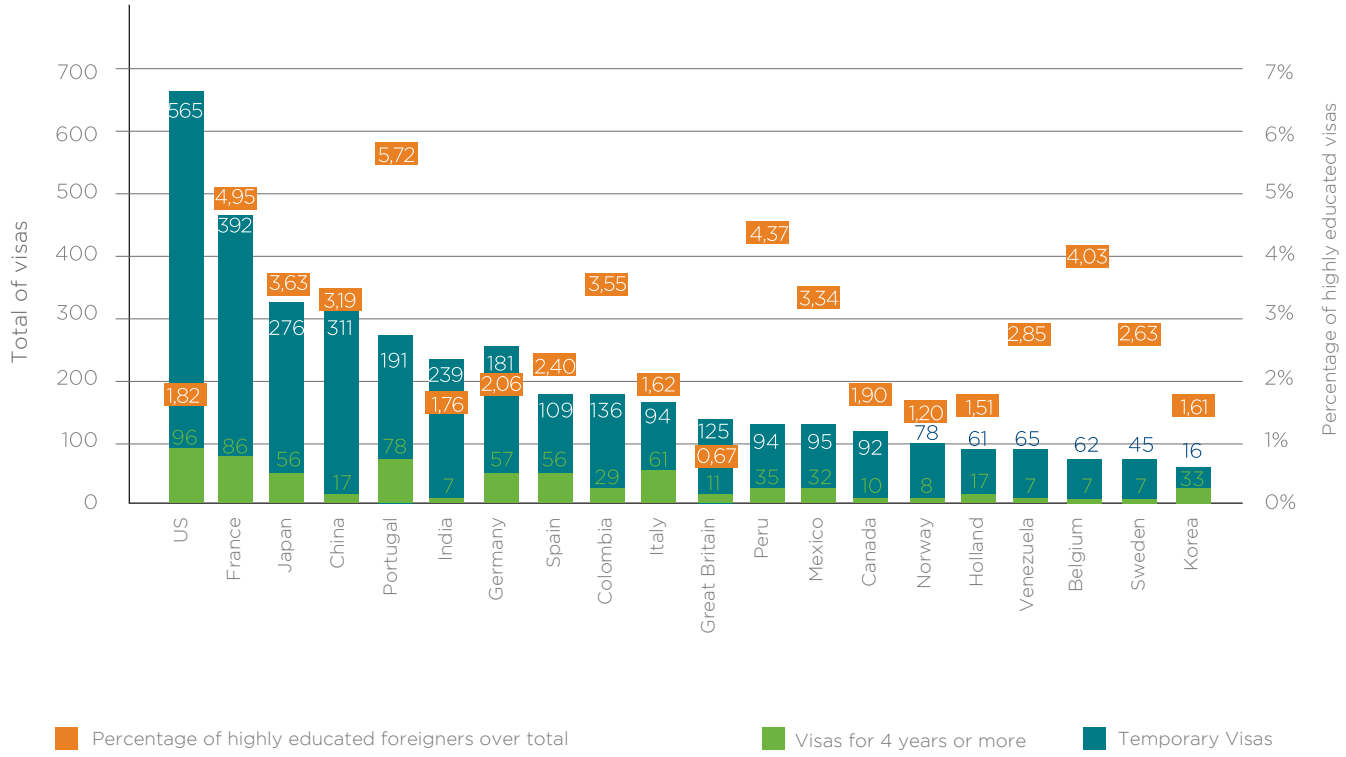


Source: DAPP/FGV based on MTE data.

Figure 2.5.1.9.4 shows the countries which most sent workers to Brazil with 17 years of study or more, according to the length of stay of the visas, between 2006 and 2011. It also shows the percentage of skilled workers in relation to the total number of workers coming from the same country. It can be noted that although the United States is the country which most sent highly skilled workers to Brazil, the number of skilled Americans is still very low in comparison to the total number of workers from that country. Also important is the low number of visas for four or more years for countries such as China, India and Great Britain, in comparison with the total visas granted. Spain, Italy and Korea stand out by having a relatively high level of workers with permanent visas in Brazil. Portugal, France, Peru and Belgium have a reasonably elevated proportion of skilled workers, above 4%.

Figure 2.5.1.9.4

Total number of visas granted by the Brazilian government to highly skilled foreign workers (16 years of study or more) by country of origin, length of stay (bars, primary axis) and percentage of number of visas for highly skilled workers in comparison with the total visas granted (spheres, secondary axis), 2006-2011

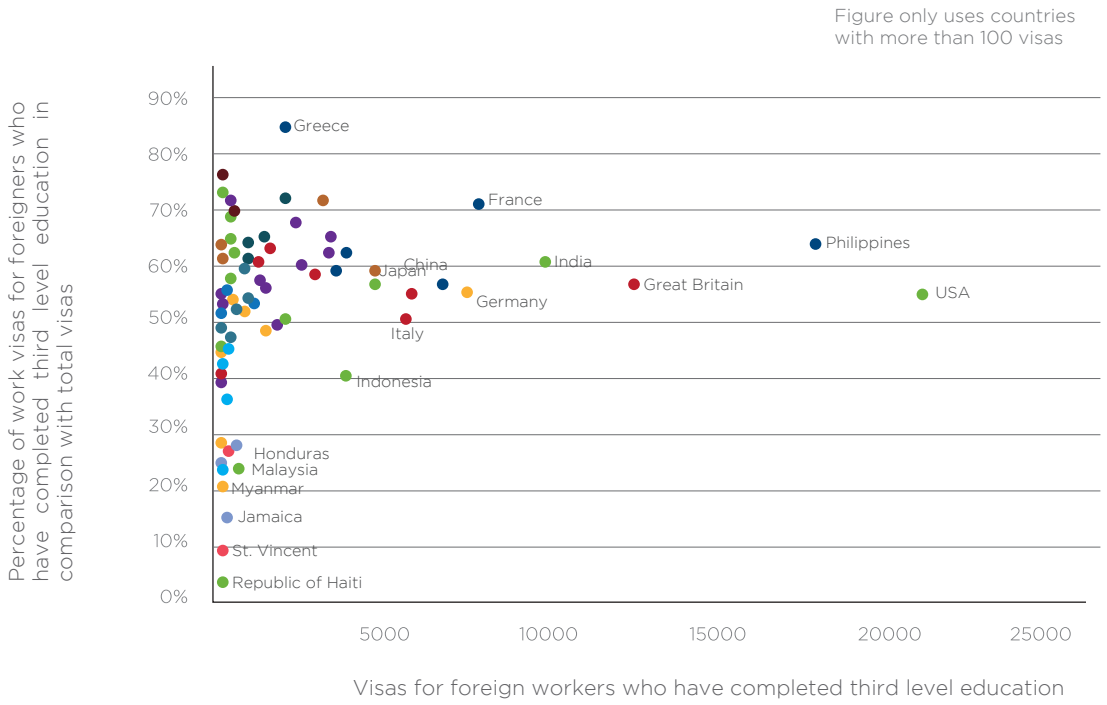


When workers with a high level of education leave their countries of origin, where they obtained their qualifications, their knowledge is captured by their destination. However, the potential of these professionals can be used or wasted by the destination country, in accordance with the capacity to allocate human capital in strategic areas for national development. Table III in the appendices, obtained by cross-tabulating the data contained in the MTE database, shows the relationship between the countries of origin of foreign workers with 17 years of study or more and the type of visa granted, between 2006 and 2011. Among the four countries which most sent skilled labor to Brazil, in three (US, France and China) there could be observed a prevalence of visas granted for the category Employment in a Brazilian Multinational, followed by visas granted for Transfer of Technology. Among the four, only Japan, third in the list, has an inverse relationship, with a slight prevalence of visas granted for Transfer of Technology over those conceded for Employment in a Brazilian Multinational. Peru, in tenth position among the countries which most send workers with 17 years of study or more to Brazil between 2006 - 2011, stands out due to the relatively high number of visas granted for Professors or Researchers. It is important to call attention to the fact that the work visas granted to researchers amount to only 338 visas.

Figure 2.5.1.9.5 shows the relationship between the "percentage of visas granted to workers who have at least completed third level in relation to the total visas granted" and the "total number of visas granted to workers who have at least completed third level." We can thus contrast countries such as Greece, which sends very few workers, though almost all of whom skilled, and countries such Honduras and Haiti, which also send few workers, though with low skills. On the other hand are countries such as the US and the Philippines, with many work visas granted, a large part of which are for skilled professionals, which is explained to a great extent by the growth in the oil industry. The US, the Philippines, Great Britain, India, France and Germany are successful cases which can be extended further. The case of France in particular calls attention due to the proportion of immigrants with third level education. The Greek case seems to indicate an opportunity still not grasped to attract talent, due to the availability of idle skilled labor.

Figure 2.5.1.9.5

Visas granted by the Brazilian government to foreign workers, by country of origin, according to the 'percentage of visas granted to workers who have at least completed third level education in comparison with the total visas granted' and 'the total number of visas granted to workers who have at least completed third level education,' 2006-2011

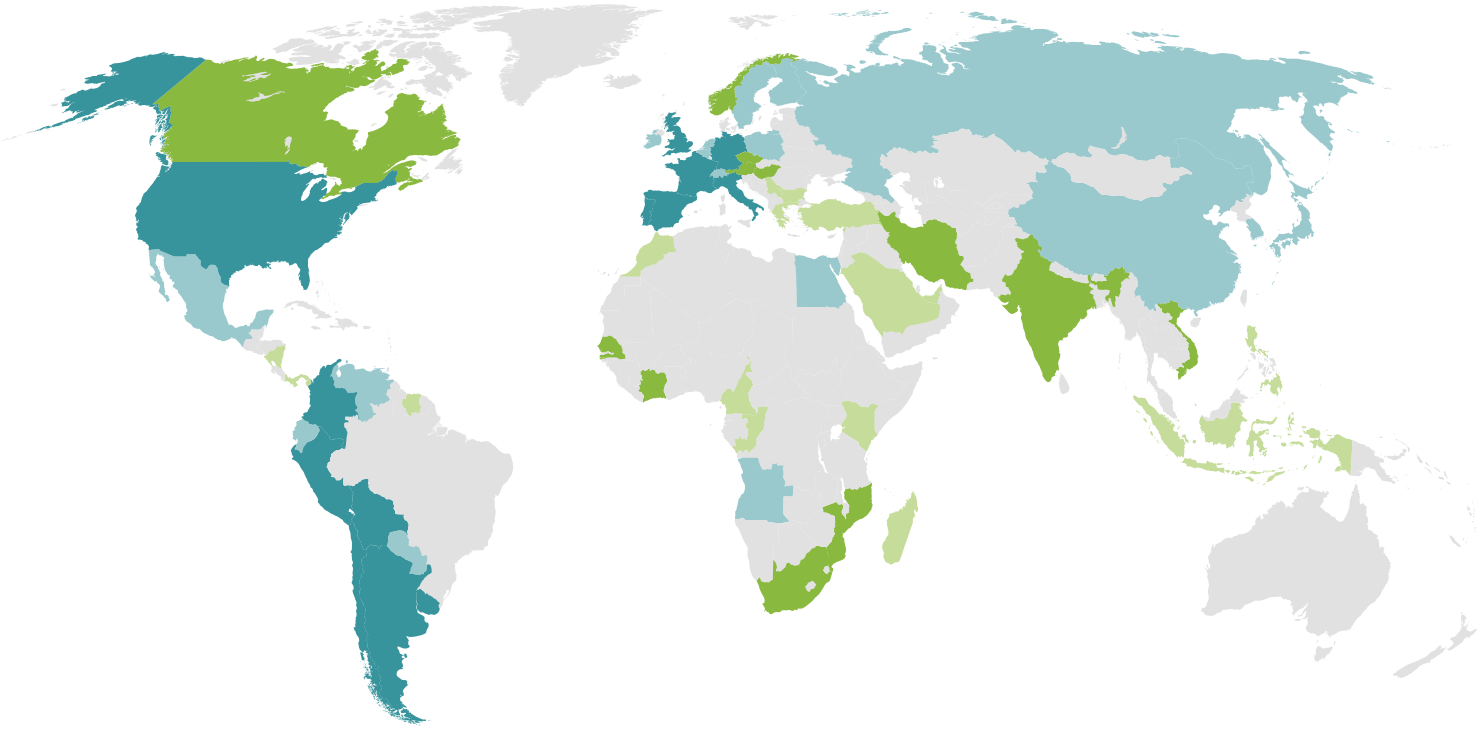


Source: DAPP/FGV based on MTE data.

Figure 2.5.1.9.1 provides a cartographic representation of the principal countries which send immigrants with masters and doctorates to Brazil. Most important are the United States, some of the Latin American countries which have shared borders with Brazil, and Western European countries. Below, opportunities to attract talents will be looked at, focusing on the cases of the European countries and the US.

Figure 2.5.1.9.1

Map of amount of individuals with masters degrees and doctorates living in Brazil, showing countries of origin, 2010 Censous



Source: DAPP/FGV based on data from the 2010 sensus.

INDIVIDUALS WITH MASTER'S DEGREE AND DOCTORATES LIVING IN BRAZIL

- Not applicable
- 1 – 27
- 28 – 64
- 65 – 207
- 208 – 1037

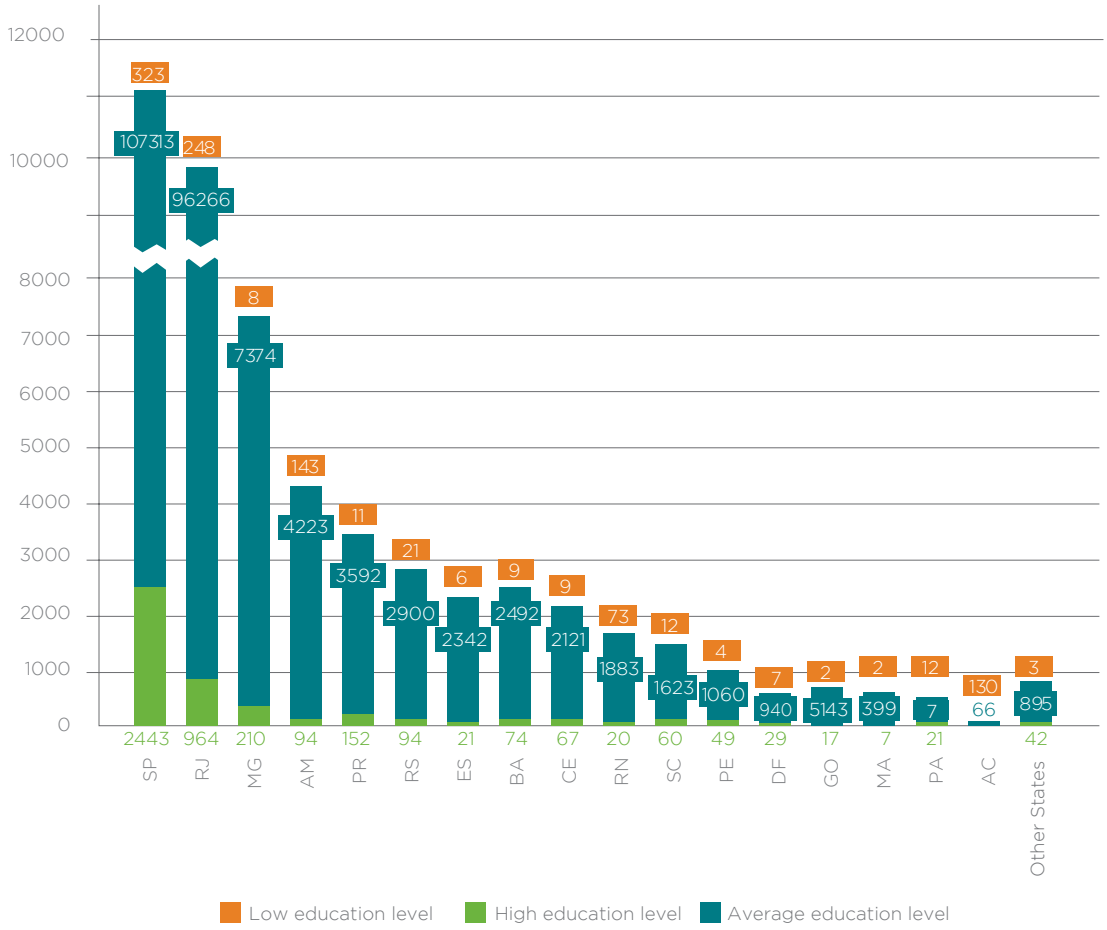
2.5.1.10 FEDERATIVE UNITS (UFS) OF DESTINATION OF FOREIGN WORKERS

In addition to taking into account immigrants' countries of origin, we also need to be able to know their places of destination among the different Brazilian Federative Units, or states, since the attraction of talents can be considered not only as a part of a national development strategy, but also as an important vector for regional and local development. Figure 2.5.1.10.1, which shows the number of immigrants according to different levels of qualification per UF, demonstrates that, as could expected, the largest number of migrants in any of the categories go to the southeastern region of the country, especially the states of São Paulo and Rio de Janeiro. Many of these workers are in working in the industrial sector or the services sectors. What also calls attention is that the state of Amazonas is in third place for the reception of immigrants with low levels of education. Two factors can explain this phenomenon, namely, proximity to neighboring countries and the Manaus duty free zone. It is well known that Amazonas and Acre receive many immigrants from neighboring countries, who cross the frontier in the search of better living conditions. Rio Grande do Norte also receives a significant number of low skilled immigrants, interested in working in the textile industry and, above all, services and tourism sectors. It

is clear that most Brazilian states receive a very low number of immigrants, and if we consider only highly skilled immigrants the number is almost insignificant, a fact which indicates the virtual non-existence of local development strategies based on the attraction of qualified immigrants. It should be highlighted that the concentration of qualified immigrants in certain places, with the aim of creating clusters of excellence, can be considered an adequate development strategy.

Figure 2.5.1.10.1

Number of visas granted by the Brazilian government to foreign workers per destination States with high (16 years of study or more), average (9 to 15 years of study) and low (less than or equal to 8 years of study) levels of education, 2006-2011



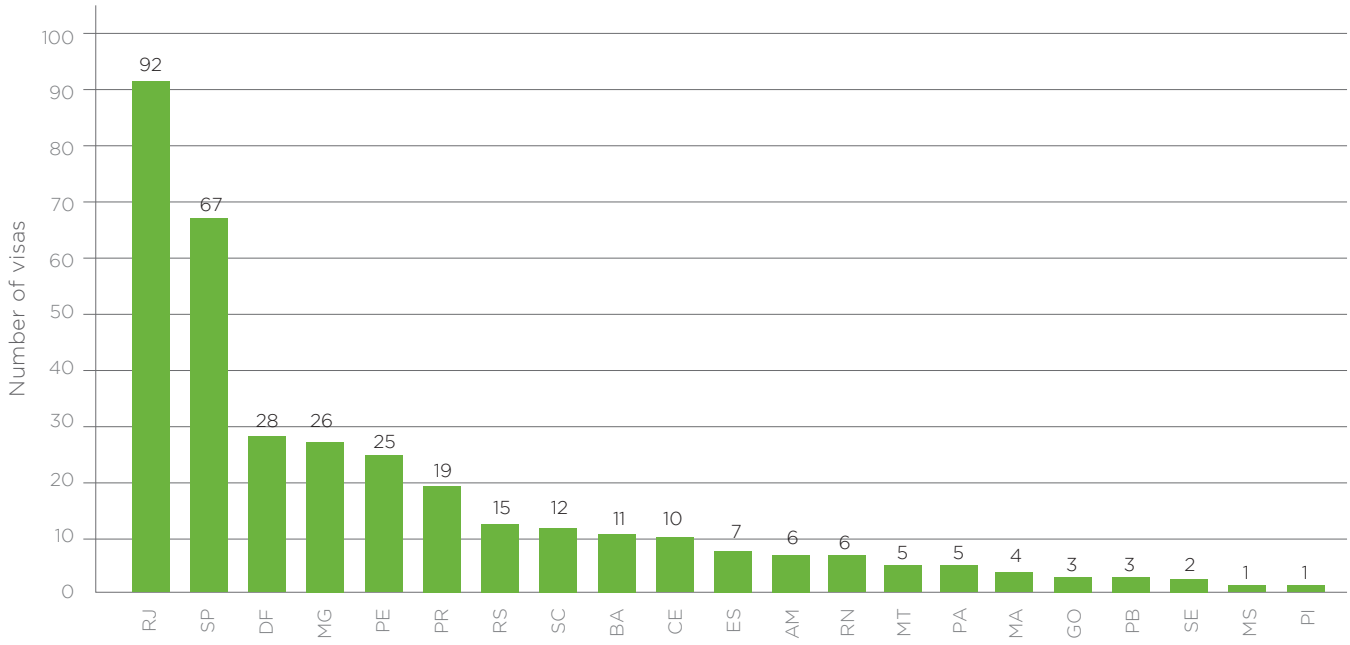
Source: DAPP/FGV based on MTE data.

Figure 2.5.1.10.2 shows the total of foreign researchers per UF. Once again São Paulo and Rio de Janeiro stand out as the principal centers for receiving foreigners. However, it is interesting that Rio de Janeiro surpasses São Paulo in relation to the number of immigrants working as professors or researchers. This is due to the large concentration of centers of excellence in the city of Rio de Janeiro, such as IMPA and COPPE/ UFRJ. Looking at the site of the Institute of Pure and Applied Mathematics (IMPA), at the present (20/08/2012) there are 117 foreigners with doctorates and post-doctorates in this institution alone, which shows the grandiose impact of the pioneering institutional policy, established by the former director of the institution and current president of the Brazilian Academy of Science, Jacob Palis. It is probable that the choice of UF is also due to the low variations in salaries in the sector, which means that

other factors, such as landscape, international reputation and quality of life,come to be more relevant at the moment of the choice of city where it is intended to work. Nonetheless, it is clear that Brazil, as a whole, does not have an efficient policy for the attraction and maintenance of highly qualified immigrants, especially in relation to the attraction of researchers as a regional or local development strategy.

Figure 2.5.1.10.2

Number of visas granted to foreign workers in the category of professor or researcher by state of destination, 2006-2011



Source: DAPP/FGV based on MTE data.

Table IV, which can be analyzed in appendices, shows the cross-tabulation between destination State of foreign workers with 17 years of study or more and the category of visa granted between 2006 and 2011. In both the principal destination states, the main category of work visa granted is Employed in a Brazilian Multinational, followed by Transfer of Technology. The divergence occurs in relation to third position which in São Paulo is Temporary Work, and in Rio de Janeiro Professor or Researcher.

Table V, which appears in the appendices, presents a cross-tabulation between the country of origin (Top 10) and the destination UF of foreigners who have work visas and 17 years of study or more (2006-2011). From this it can be seen that the destination of migrants with high levels of education is the São Paulo-Rio axis. São Paulo state has the highest level of foreigners from any of the ten countries considered. Among the immigrants who go to São Paulo, the largest group are the Americans, followed by Japanese and French. In the case of immigrants who go to Rio de Janeiro, the majority are American, followed by French and Chinese.

During its history Brazil has received various waves of immigration. However, in the last three decades Brazil has gradually stopped being a destination country to become a country of origin for migrants. The economic crises of the 1980s and 1990s were determinant in this transition. Nonetheless, due to good economic results, and the social advances and political protagonism in the international scenario achieved in recent years, the country may return to be an important destination for migrants.

A significant increase in the number of immigrants coming to Brazil is already noticeable. There also has been a considerable increase in the proportion of skilled workers receiving visas to work in the country. A change in the profile of immigrants has also been noted in relation to the principal countries of origin, with the number of immigrants coming from Latin American countries, the US and China having increased. In relation to the highly skilled immigrants, the US, France, Japan and China are important as countries of origin. Taking into account the total of immigrants with at least third level, the US and the Philippines stand out, the latter with an even higher proportion of immigrants with third level in relation to the total of immigrants from the same origin.

Part of this immigration is propelled by the significant presence of multinational corporations in the country, with the development of the oil and maritime industries deserving special mention. However, it is important to highlight that most of the visas granted to foreign workers in recent years are temporary. A prevalence of immigration with destinations of urban centers can be observed. The most important destinations are the states of São Paulo and Rio de Janeiro. There is thus a need for a policy aimed at the attraction of skilled immigrants as a vector of national development which can also take into account development opportunities at the regional and local levels. The Brazilian government can, by implementing policies strategically oriented towards the attraction and retention of skilled professionals, take better advantage of its current status in the international scenario in order to continue with the advances already achieved in the economic, social and geopolitical fields.

2.6 UNEMPLOYMENT RATES IN EUROPEAN COUNTRIES AND BRIEF ANALYSES, INCLUDING THE US

SUMMARY

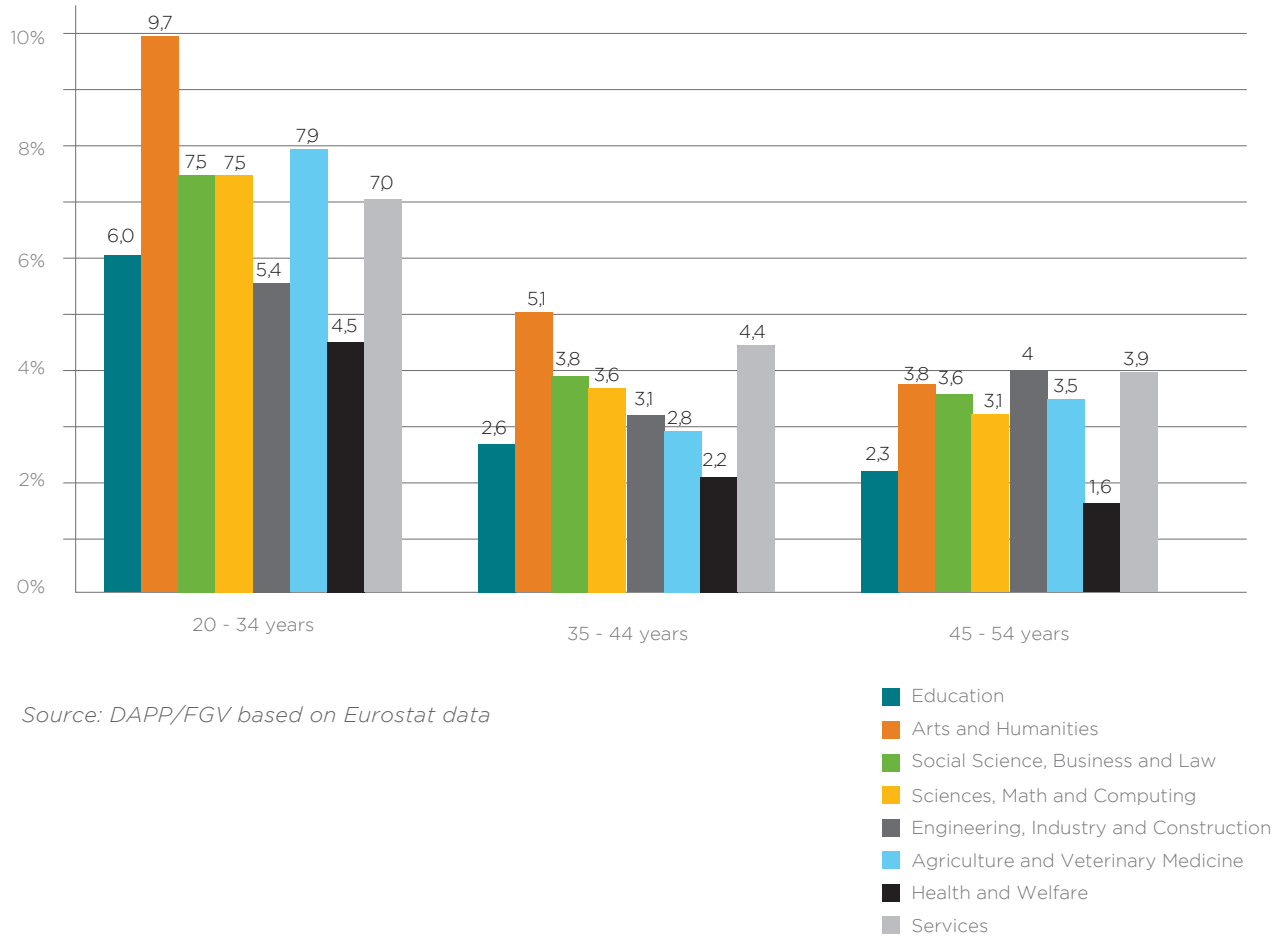
- Opportunities for policies to attract highly skilled professionals from European countries due to the unemployment caused by the international crisis.
- Taking as a universe the European countries and the United States, Brazil should look for highly skilled labor as a priority in the US, Latin countries (France, Portugal, Italy and Spain), Germany and Great Britain.
- We have to be able to prepare public policies to attract skilled labor which can take into account the deficits in the Brazilian labor market and the availability of skilled labor in other countries, in accordance with a strategic perspective of national development.

According to UN data, in 2009 global unemployment rose 0.9% in comparison with two years previously, reaching 6.6%. From 2008 to 2009, the unemployment rate in the G7 countries jumped from an average of 5.9% to around 8%. The estimate for the end of 2012 is 7.7%.[89] This increase in unemployment rates constitutes an opportunity for Brazil in the search for skilled labor in the global market, with the aim of overcoming the specific needs of its market through the hiring of foreigners. In this subsection we use the example of European countries, including the US in some cases, by way of example, due to the great abundance of data available in the Eurostat database.[90]

The lack of opportunities is present in all the sectors of the labor market. Even in sectors such as 'Sciences, Mathematics and Computing' and 'Engineering, Industry and Construction,' of which Brazil has a flagrant need, we can observe rates of unemployment of 7.5% and 5.4%.

Figure 2.6.1

Unemployment rate in European countries, per area of study and age groups, 2003-2007



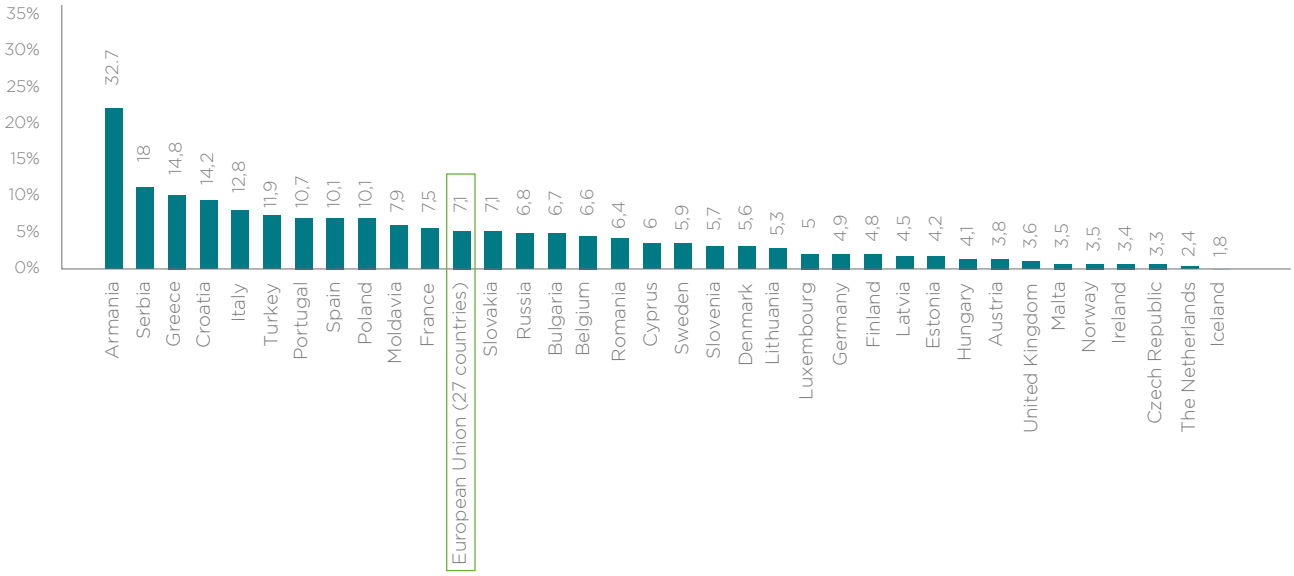
Source: DAPP/FGV based on Eurostat data

Figure 2.6.2 shows that the unemployment rate among people with at least third level education and aged between 20 - 34 years is very high in various European countries, including ones which traditionally send migrants to Brazil. such as Italy (12%), Turkey (11%), Portugal (10%), Spain (10%) and France (7.5%). The European Union,

as a whole, has a significant level of unemployment among the same population group (7.1%). It can be inferred that recently graduated young people are having relative difficulty in entering the labor market in a large part of European countries.

Figure2.6.2

Unemployment rate among people who have completed third level and are aged between 20 and 34 years in various European countries, 2003-2007

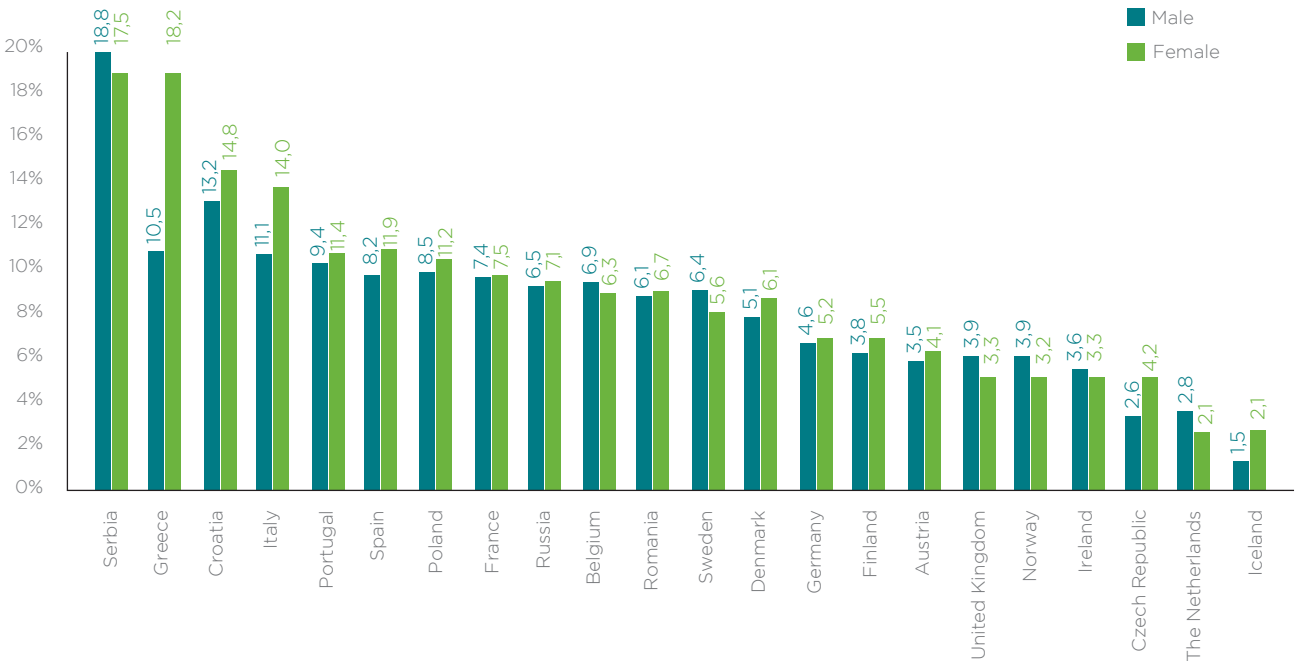


Source: DAPP/FGV based on Eurostat data.

As shown in Figure 2.6.3, in many of the countries with the highest rates of unemployment for individuals in the 20 - 34 age group, who have at least completed third level education, unemployment is greater among women than men. This indicates the existence of an opportunity for policies aimed at attracting more women.

Figure 2.6.3

Unemployment rate among people aged between 20 and 34, by gender, in various European countries, 2003-2007

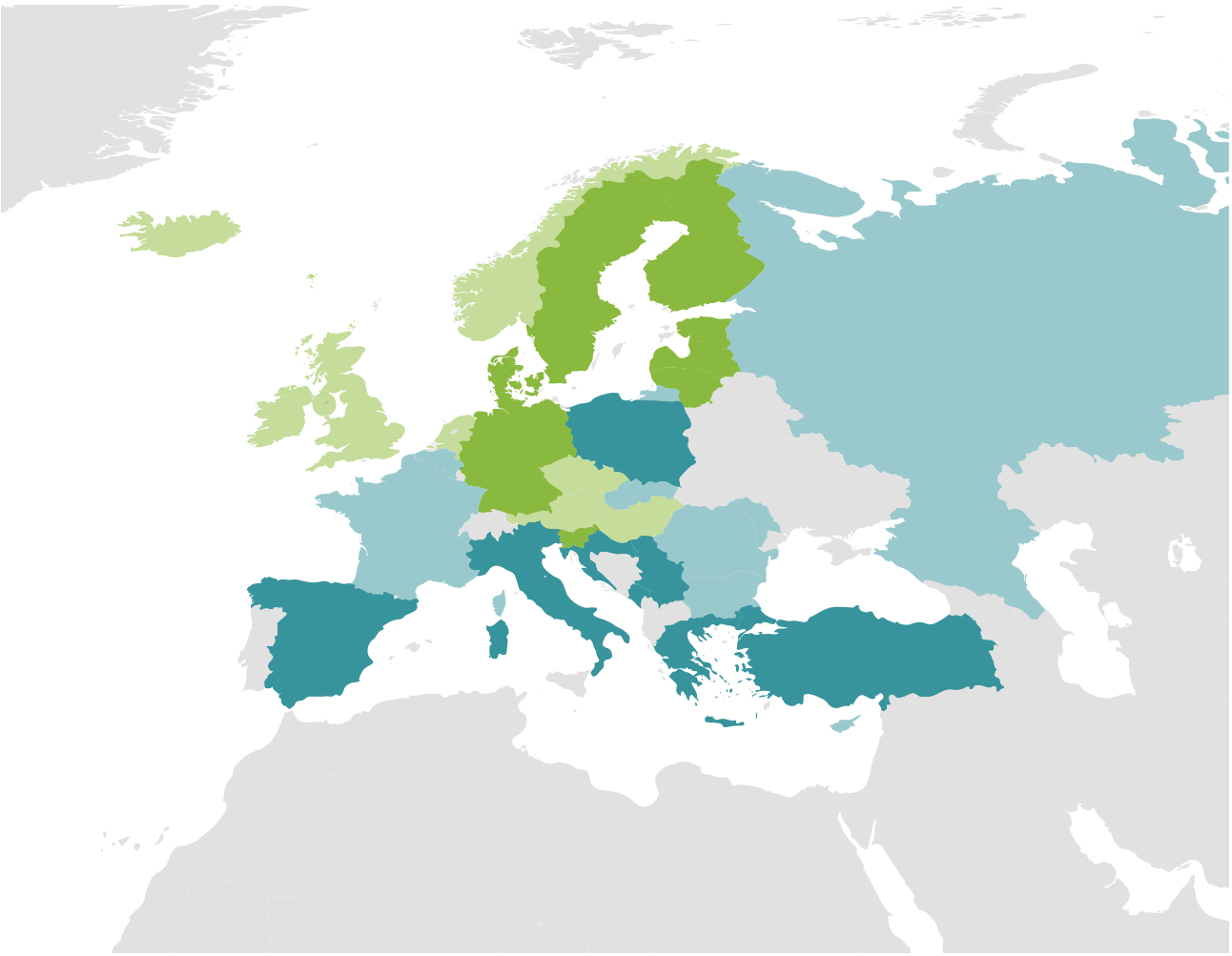


Source: DAPP/FGV based on Eurostat data.

Figure 2.6.4 contains a map with the unemployment rate of people who have at least completed third level education and aged between 20 and 34, and shows the alarming situation which Europe is currently experiencing. Countries such as Italy, Portugal, Greece and Spain have unemployment rates above 3%. Countries such as France, Russia and Germany, which have a leading role in the European scenario of scientific and technological production, have relatively lower unemployment rates, of 6% - 9%, though this is still significant. There is still a significant opportunity for the attraction of idle talent from Europe, a fact which represents possibilities of evident gains for potential migrants, to Brazil, which can benefit through the reduction of deficits of professional skills, and even for the countries of origin, which can benefit from capital remittances, as well as a possible increase of trade with Brazil.

Figure 2.6.4

Unemployment rate among people aged between 20 and 34 years and with at least complete third level education in various European countries, 2003-2007



Source: DAPP/FGV based on Eurostat data.

UNEMPLOYMENT RATE

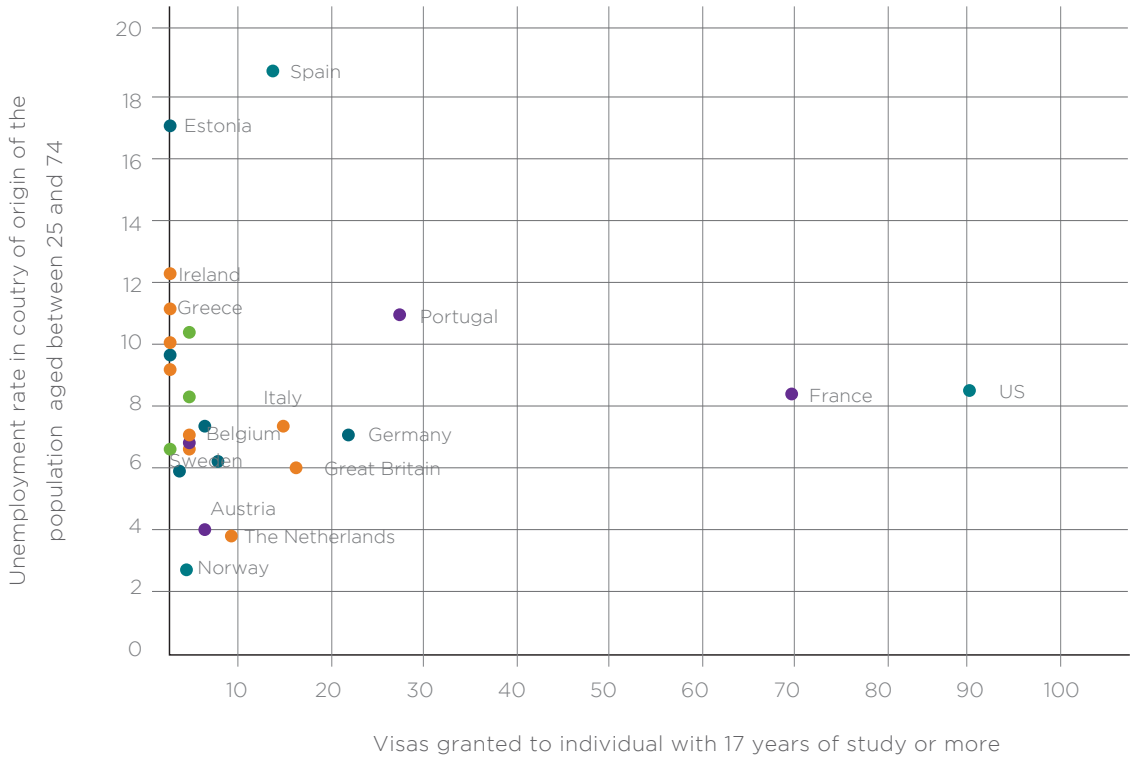
- Not applicable
- to 4,15%
- 4,15% to 5,9%
- 6% to 9%
- 9,1% to 33%

Country	Rate	Country	Rate	Country	Rate	Country	Rate
Armenia	32.7%	Moldavia	7.9%	Slovenia	5.7%	Austria	3.8%
Serbia	18%	France	7.5%	Denmark	5.6%	United Kingdom	3.6%
Greece	14.8%	Slovakia	7.1%	Lithuania	5.3%	Malta	3.5%
Croatia	14.2%	Russia	6.8%	Luxembourg	5%	Norway	3.5%
Italy	12.8%	Bulgaria	6.7%	Germany	4.9%	Ireland	3.4%
Turkey	11.9%	Belgium	6.6%	Finland	4.8%	Czech Republic	3.3%
Portugal	10.7%	Romania	6.4%	Latvia	4.5%	The Netherlands	2.4%
Spain	10.1%	Chipre	6%	Estonia	4.2%	Iceland	1.8%
Poland	10.1%	Sweden	5.9%	Hungary	4.1%		

Figure 2.6.5 cross-tabulates unemployment rates in the countries observed, with the total visas granted to workers with 17 years of study or more coming from these countries, for a stay of four years or more. Here it is intended to capture the relationship between the availability of highly skilled human resources and relative facility to attract them to Brazil and keep them here, in order to identify in a universe constituted by European countries, plus the US, the countries in which we should take as a priority for seeking highly skilled labor. This analysis takes into account the importance of the networks created by immigrants already in the country as an attraction factor and the facilitation of the integration of immigrants in Brazilian society. In this scenario, the countries which stand out are the US, the European countries with Latin languages (France, Portugal, Italy and Spain), as well as Germany and Great Britain. The high unemployment rate in Spain, as well as the relatively low number of visas granted by the Brazilian government to very highly skilled Spanish workers seems to indicate the existence of an opportunity which can be better exploited.

Figure 2.6.5

Cross-tabulation between the unemployment rate in countries of origin (European countries plus the US) and the total visas granted for four years or more to very highly skilled persons (17 years of study or more), 2010



The perception of the opportunity to attract highly skilled professionals can be further refined by the analysis of the unemployment rate in each of the different types of degree course in various European countries and by the types of visas granted to workers from each of the nationalities. Analyzing Table 2.6.1 in accordance with the needs of the Brazilian labor market, it can be seen that there is a possibility to seek engineers in countries such as Italy and Portugal and IT professionals in countries such as Italy, Spain, Portugal and France.

Table 2.6.1

Unemployment rate among people who have at least completed third level and aged between 20 and 34 years, by selected degree areas (selected countries in accordance with previous figures), 2003-2007

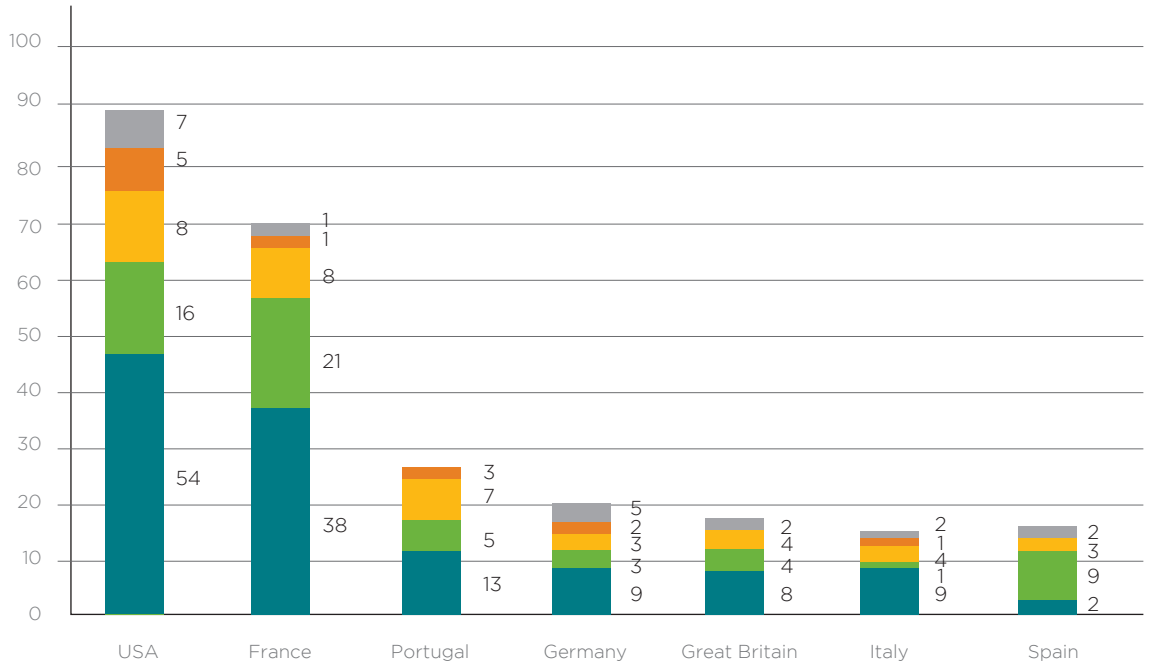
Countries	Education	Social Sciences. Business And Law	Sciences. Maths and Computing	Engineering. Industry and Construction	Agriculture and Veterinary Medicine	Health and Well-being
Belgium	4,7	7	5,8	4,6	7,2	3,3
Germany	3,9	4,2	5,6	4,7	3,4	4,2
Spain	11,5	10,4	10,7	5,9	13,2	9,1
France	2,1	8,7	7,5	6,3	6,4	3,3
Italy	10,1	13,5	12,8	8,6	15,9	6,6
Portugal	13,7	9,7	10,8	8,5	7,5	6,5
United Kingdom	1,6	3,3	4	2,3	3,6	1,7
Norway	1,7	2,8	3,5	3,5	7,2	1

Source: FGV/DAPP based on Eurostat data.

Figure 2.6.6 shows the type of visas by country of origin. The great importance of France can be noted, followed by the US, for visas granted in the areas of science and technology or the provision of technical assistance services. Spain was in third, having a considerable proportion of its total visas in this category. In relation to visas granted to professors or researchers, the US and France are in joint first place, followed by Portugal.

Figure 2.6.6

Number of visas granted by the Brazilian government to very highly skilled foreign workers (17 years of study or more), by countries of origin (countries selected in accordance with previous figures), 2010



Source: FGV/DAPP based on MTE data.

- Employed by an organization established in Brazil
- Administrator, manager, executive director with administrative powers, of a civil or commercial company, group, or economic conglomerate
- Transfer of technology and/or rendering of technical assistance services
- Visas for professors or researchers
- Others

Others: Foreigner individual investor, third level or professional intern, artistic or sporting, cases omitted by the National Immigration Council, working on board foreign vessels or platforms.

The preceding analyses can be broken down still further in accordance with specific needs. If, for example, we consider as an objective the promotion of development in advanced scientific areas, an adequate path would be to carry out specific research about renowned professionals and promising young talents working in the areas listed as strategic in the Action Plan - Science, Technology and Innovation for National Development, 2012-2015, published by the Ministry of Science and Technology (MCT). These are to be attracted in each of the countries prioritized for obtaining talent.

There is great unemployment in Europe, including in areas which Brazil is suffering shortages, such as engineering and ICT. Among the countries with the highest rates of unemployment, the proportion of unemployed women is in most cases higher than the men. In Europe there are also elevated unemployment rates among young people with third level education. These facts, as well as the opportunities created by them, have to be taken into account in the preparation of policies to attract skilled professionals. In the universe constituted by European countries and the US, considering the relationship between the availability of highly skilled human resources and relative facility to attract them, and the importance of the network created by immigrants already in the country as attraction factors, the US, some of the European countries with Latin languages (France, Portugal, Italy and Spain), as well as Germany and Great Britain, should be the privileged focus of Brazilian policy for the attraction of talent. We have to be capable of implementing public policies to attract skilled labor which can take into account the deficits in the Brazilian labor market and the availability of skilled labor in the other countries, in accordance with a strategic perspective of national development.

2.7 INSTITUTIONAL STRUCTURE NECESSARY FOR THE OPERATIONALIZATION OF IMMIGRATION POLICIES

SUMMARY

- Brazilian immigration policy is currently guided by Law 6815, dated 19 August 1980, which was drafted under the emergency legislation enacted by the military regime, and lacks instruments to carry out an immigration policy concerned with the national interests of economic development, being based on the sole perspective of national security.
- The system for administering international migrations in Brazil is the result of the work of the National Immigration Council (CNIg) and centers on the perspective of valorizing social inclusion and the guarantee of human rights.
- A fragmentation of the monitoring of immigration in Brazil can be noted, since this function is distributed among four agencies: Ministry of Justice, Ministry of Labor and Employment, Ministry of Foreign Affairs and the Federal Police.
- There is an urgent need to promote instruments to allow the Federal Government to create an agenda for the construction of efficient public immigration policies.
- The possibility of implementing a strategic policy in relation to the question of foreigners in Brazil depends on greater coordination between the organs of the Brazilian government and the establishment of the systemic sharing of information, which will allow better control, monitoring and administration.

In the Brazilian case, the possibility of taking advantage of the positive consequences of international mobility are still hindered by a series of institutional and judicial obstacles. Brazilian immigration policy is still guided by Law 6.815, dated 19 August 1980, which was drafted under the emergency legislation enacted by the Military Regime,[91] and lacks instruments to guide an immigration policy aimed at the national interest of economic development. This policy is based on the exclusive perspective of the question of national security,[92] although, even in this case, it is insufficient to take account of the features which the question of borders now assumes.

The current system for administering international migrations in Brazil is the result of the work of the National Immigration Council (CNIg). CNIg's work is most important in the attempt to valorize social inclusion and the collective participation public policies instruments in Brazil. However, the institution restricts its work principally to the most structural questions, which place immigrants in social situations of risk. These are the lack of integration, bad working conditions, and the illegal exploitation of child labor, among the other social ills to which they are exposed. CNIg plays an important role in the administration of migrations in Brazil. However, the institution is not responsible for the task of formulating long-term migratory policy with the objective of socio-economic development. Nevertheless, it is worth noting the spirit of the current Foreigners Law, which states in article 16:

> *Sole paragraph –Immigration shall aim at, above all, the provision of specialized labor in various sectors of the national economy, targeting the National Development Policy and all of its aspects, especially increased productivity, the assimilation of technology and the raising of resources for specific sectors.*

In order to present data which can help give a dimension of the flows of skilled migrants from different countries to Brazil, this study draws on data from different sources, namely, the Ministry of Justice, the Ministry of Labor and Employment (2006 to Dec. 2011) and the 2010 Census. One of the most staggering conclusions of our analyses is that there are serious problems with the Ministry of Labor databases. Here, among the 264,476 work visas researched, 3113 duplicated records were found. In addition, we found problems with erroneous dates of birth (for example 11/06/0070 or 16/02/0078), dates of birth after the date of entering Brazil, children with work visas, ages inconsistent with level of education (for example secondary school completed at the age of 11, or university degrees at 15), amounting to 225 corrected cases.

A fragmentation of the monitoring of immigration in Brazil can be perceived, since this function is distributed among four principal agencies: Ministry of Justice (MJ), Ministry of Labor and Employment (MTE), Ministry of Foreign Affairs (MRE) and the Federal Police (PF). However, the division of jurisdictions is not clear, since some of these agencies function as an interface for the actions of the others, which can create confusion about the delimitation of their jurisdiction. The low level of integration of data between ministries means that information about the profile of foreigners who enter Brazil is lost, and the Federal Government is not given the necessary support for the preparation of an agenda to construct efficient public policies dealing with immigration.

We found that national control of immigration is both insufficient and inefficient. In fact the immigration control system is fragmented; there is a low degree of control over the departure of foreigners, with only some inconsistent databases being dispersed among the different agencies. The state structures concerned with security, internal control and border control are in need of urgent improvement. Here we would like to highlight the risks of neglecting the creation and administration of adequate policies for the control of immigration and the attraction of skilled labor. For this the first step has to be the proper collection and analysis of data. There is thus an urgent need to anticipate future challenges, constructing scenarios about

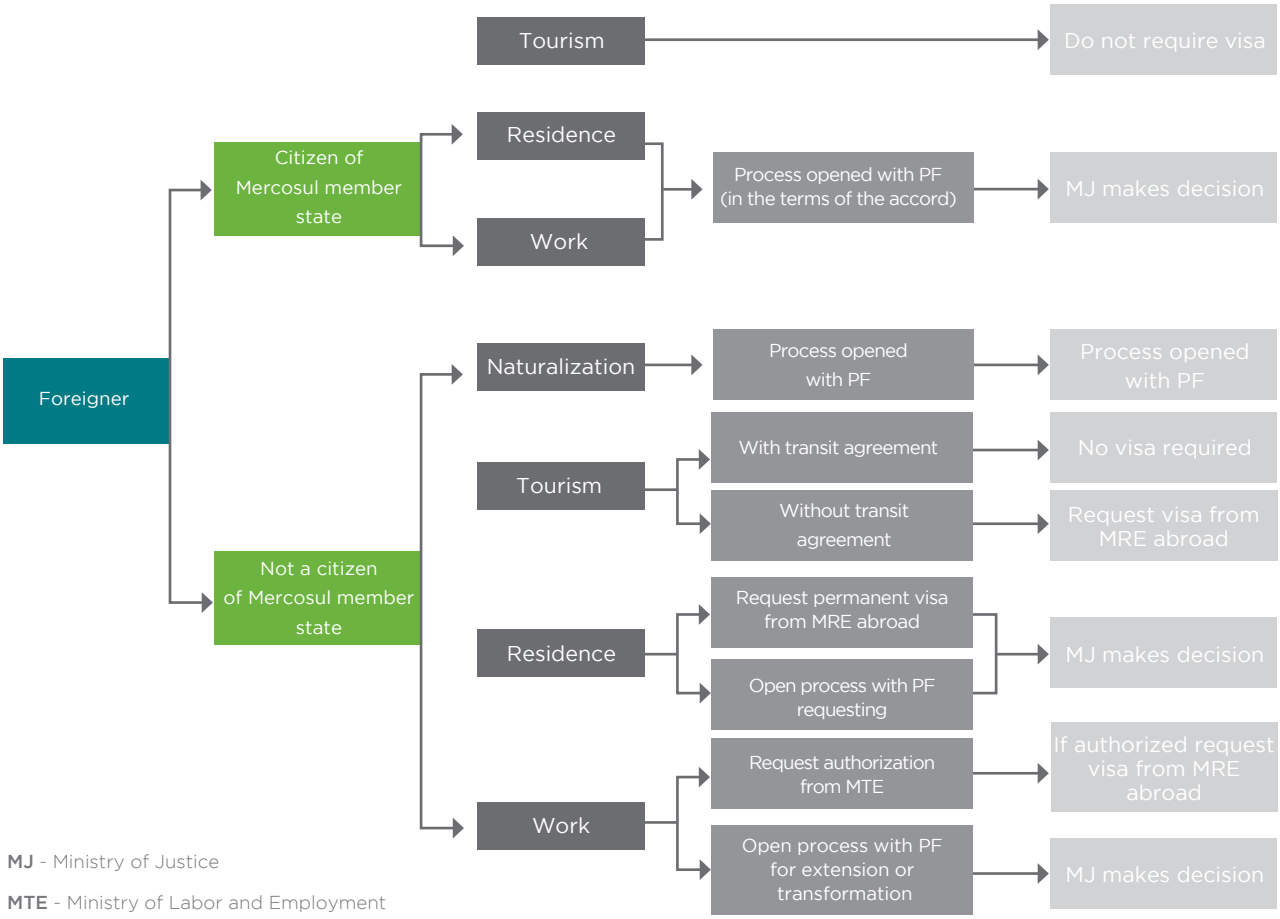
the effects of the increase of mobility on the social and economic development of nations. Brazil, thus, fails in its attempt to promote greater integration between migration policy, development policy, science and technology, commercial policy and foreign affairs.

A preliminary survey carried out by the technical team of FGV, with administrators of the Ministry of Justice, allowed us prepare a general framework of the treatment given to questions referring to foreigners and the flow of information about these foreigners in the context of the Brazilian government.

Origin impacts on the question of the treatment of foreigners. Foreigners from Mercosul member states received differentiated treatment, both in relation to entering the country for tourism without the need for a visa or even a passport, or in the ability to regularize their situation in the country, if they are residing or working in an irregular manner. Citizens from countries which have transit agreement are also dispensed from tourist visas, but are subject to the common system of requesting a permanent visa (residence and work). The different treatments and flows to resolve questions related to foreigners are shown in Figure 2.7.1.

Figure 2.7.1

Tree of institutional macro-processes involved in administration of immigration



MJ - Ministry of Justice

MTE - Ministry of Labor and Employment

MRE - Ministry of Foreign Affairs

PF - Federal Police

Source: DAPP/FGV.

The flow in the format of a decision tree presented in Figure 2.7.1 shows that there are three principal types of treatment. First, a dichotomy between foreigners from Mercosul member states and from other countries. There is also a specific flow for questions referring to naturalization in which the treatment given to the foreigner depends on their origin.

In the case of foreigners coming from Mercosul member states, there is no need for a tourist visa, while visas for residency and work follow the usual procedures. For foreigners from other countries, whether or not there is a need for a tourist visa depends on international transit agreements. Requests for permanent visas for these foreigners follow different procedures, depending on whether they are in the country or abroad. Requests for work visas always follow the same procedure.

It can be seen that the geo-political situation has a strong influence on questions related to foreigners, including here both the country of which the foreigner is a citizen and the place where he is located (inside Brazil or abroad). Questions related to foreigners outside the country are dealt with by MRE in Brazilian consulates in other countries. MRE decides on questions of tourist visas for foreigners, its essential competence, and also functions as an intermediary between foreigners outside Brazil and the MJ, for requests for permanent visas (residency), and MTE, for requests for work visas.

In turn, the Federal Police (PF), implements migratory control on borders, its essential competence, but also functions as an intermediary between foreigners in Brazil and the MJ, for requests for permanent visas (residency), requests for extensions and transformations of work visas and requests for naturalization, as well as work visas and permanent visas for foreigners from Mercosul member states. Only with explicit authorization can foreigners make their request directly to the MJ. Requests for work visas for foreigners in the country, in turn, have to be directly submitted to the MTE.

This profusion of competencies and the overlapping of procedures and mandates results in a proliferation of autonomous and isolated computerized systems, which results in the fragmentation of information about foreigners in Brazil.

The PF has several different registration systems, including the Foreigner Registration System (Sincre), the International Trafficking System (Sinte) and the Process Monitoring System (Siapro), as well as an older version of the International Trafficking System called STI. The MJ uses Siapro for processes in its jurisdiction and possesses data referring to naturalization processes (of its exclusive jurisdiction), as well as access to other systems administered by the PF.

The other agencies have their own systems, without any communication between them. Different flows and the absence of coordination produces incomplete information, which creates negative impacts on the administration of foreigners in Brazil and on the possibility of implementing effective policies related to the international trafficking of persons.

An example of this problem is the isolation of the Federal Revenue Service (Receita Federal - RF) in regard to the other agencies which have jurisdiction in relation to the question of foreigners in the country. RF databases contain information about economically active foreigners who declare they have an income and pay tax in Brazil. However, due to the absence of the exchange of information, it is not possible to know if they are legally carrying out economic activity in the country. Nor, on the other hand, is it possible to know if the foreigners who enter Brazil to carry out economic activity are declaring their incomes and paying taxes.

As a result the preliminary investigation of the information flow about foreigners in the different Brazilian government agencies allows us draw some conclusions in the field of applied public policies. The implementation and effectiveness of public policies concerning the international trafficking of people depends on the existence of an information system which allows questions related to foreigners in Brazil to be identified, monitored and administrated both at an individual level and in the treatment of aggregates which produce administrative knowledge capable of guiding policymaking. The fragmentation of jurisdictions for questions related to foreigners in Brazil has been accompanying the absence of a coordinated systematic between the agencies which possess these jurisdiction. The possibility of formulating a public policy on foreigners in Brazil depends on greater coordination between Brazilian government agencies and the establishment of a systemic sharing of information, in order to allow greater control, monitoring and administration of foreigners who live in the country.

III

CONCLUSION AND SUMMARY OF MAIN POINTS

The increase in human mobility, caused by the revolution in transport, associated with the explosion in the communication of information allowed by the development of telecommunications and information technology, converging on an increasingly integrated global economy, with increasingly interdependent national markets, implies that the political unity of nation states is increasingly thought of in terms of their permeability to the flows of persons, goods, services and information.

In first place migration policies need to be discussed together with economic and commercial policies, in the wake of negotiations carried out in multilateral bodies. The lack of cooperation between countries of origin, transit and destination causes a challenge in terms of the regulation of migration flows, especially in the current context of global interdependence. Unlike market and capital flows, migration policies tend to be unilateral and restrictive. While the World Trade Organization (WTO) observes market negotiations, and the International Monetary fund (IMF), together with the Global Financial Board (GFB), manages capital mobility, no organizations regulate migration.

Another important challenge results from the fact that state bureaucracies are vertically structured, and that the limits of jurisdiction of different governmental agencies are distributed in accordance with specific themes. Public immigration policies need to orthogonally cut across these bureaucratic agencies and spheres of responsibility, and thus require an extraordinary capacity for coordination among government agencies, in relation to both planning and implementation. Immigration control policies have to take into account themes as diverse as skill deficits in the labor market, strategic planning of ST&I policy, partnerships and nexus of cooperation which are intended to be developed in the area of foreign affairs, the internal security system of the country, the translating and validation of documents from different education systems, questions related to the administration of ethnic conflicts, and social integration, amongst others.

The preparation of an immigration policy should take into account a large number of themes, involving various government agencies (justice, labor, education, minority rights, security, social insurance, development etc.). In addition, it is important to note that the responsibility for the administration of a mobility system is not solely that of the individual states, but is distributed among different levels of governance: sub-national governments; national governments in unilateral, bilateral, or multi-lateral arrangements; regional arrangements (including supra-national actors such as Mercosul); global organizations (such as the World Trade Organization), and even multinational mega-corporations. The importance of each of these actors varies in function of socio-historical scenarios and specific geopolitical arrangements.

In a new international mobility system government can no longer be guided by abstract or ideological debates. What is involved is the search for sets of incentives and restrictions, taking into account skill deficits in the labor market and the national development strategy in order to attract individuals with determined professionals profiles, in accordance with the necessary characteristics and qualifications, the expected length of stay, the propensity to participate in strategic networks, etc. In seeking a strategy to take advantage of migratory flows, it is fundamental that the different trade-offs be taken in account, in relation to development, achieving balance in the social insurance system, national security, the promotion of CT&I development, the supporting of minority rights and national integration, etc. One of the great advances in the political scenario seems to have been the

widespread acceptance of the importance of education as a vector for political, economic and civilizational development. Nevertheless, there is the evident problem that education policies need to be considered in the mid and long term. A policy for attracting skilled immigrants can offer a much more agile response to the demand for market skills and also to shorten the generational transition, accelerating the maturation process of an adequate educational system through the recruitment of skilled staff to train future generations. Immigration policies have to be implemented together with fundamental reforms in the education and professional training systems, labor market regulation reforms, and reforms in the health and public security systems, with the aim of creating competitive economies which can properly serve national interests in the global economy.

It is highly probable that human mobility will continue to grow globally. It can also be assumed that Brazilian demand for immigrants with different levels of skill will continue to grow. As a result, a wide range of public policies need to be created to control access to the labor market, and which allow the identification, attraction and retention of highly skilled workers in areas considered strategic for the development of the country. Attracting talents abroad can be difficult, due to great global competition, especially in the fields of health, science, information technology, etc. For a successful talent attraction policy, market realities and the best incentives to be offered to prospective immigrants have to be considered, as well as relational networks and the role of different social groups in decision making.

Brazil has been capable throughout its history of molding instruments of state to help meet the challenges it has faced. Currently in relation to themes such as models of development in a globalized economy, questions such as the relationship between socio-economic development, advanced ST&I development, and immigration policies concerned with attracting qualified immigrants, emerge as increasingly urgent challenges. There can thus be observed a deficit of the integration of normative, policy, and analysis instruments as the foundation for the preparation and monitoring of efficient public policies concerned with the theme of immigration as a vector for development. Brazil needs to improve the integration of its immigration policies with its industrial development, ST&I, human rights, security, labor, and foreign policies. At the present historic moment there is a need for the responsible institutions and their intra-governmental agreements to be improved in order to stimulate in a concerted manner the normative and institutional advances necessary for the implementation of an immigration policy which can meet the national interest.

In order to more efficiently make public policies to regulate migratory flows, it is essential that there are efficient methods to collect and systematize data, and that there is a statistical analysis capacity, as well as methods of sharing data among countries. Brazil counts on the advantage of having solid state structures. As well as updating normative frameworks, the country could benefit from the creation of a specific agency, capable of catalyzing initiatives, institutionally strengthening the existing structures and integrating its administration in the joint political command of the ministries involved.

The set of reflections developed in this study allowed us establish some directives which should guide the preparation of rational, systemic and well founded public policies, aimed at attracting skilled immigrants as a vector of the socio-economic development of the country. These are:

- Be based on the analysis of the conditioning factors of migratory flows and the projection of the impacts of migrations.
- Consider the perspectives of the populations of countries of origin, of Brazilian society and the migrant population to achieve responsible policies.
- Guarantee the human rights of the immigrant population.
- Harmoniously integrate immigrants in Brazilian society.
- Protect Brazilian workers.
- Ensure the maintenance of national security.

- Consider demographic development, as well as economic cycles and tendencies.
- Ensure socio-economic development at the national, regional and local levels.
- Overcome skill deficits in the Brazilian labor market.
- Complement the national development strategy in the area of Science, Technology and Innovation (ST&I).
- Be connected with the stimulation of the innovative business sector and the strengthening of entrepreneurialism.
- Seek to contribute to an increase in productivity and to contribute to the aggregate value of the production of industries based in Brazil.
- Contribute to the development of commercial partnerships at the international level.
- Integrate with geopolitical strategy, taking into account negotiations carried out with multilateral agencies.
- Involve civil society through a wide-ranging public debate.
- Create faster means, with less bureaucracy, to regularize the situation of highly skilled immigrants.
- Integrate the various state agencies concerned with immigration policy and provide means for the negotiation of consensus.
- Provide effective tools for coordination, the alignment of information flows, and the accumulation, cross-tabulation and analysis of data.
- Provide institutional means for effective administration, through the creation of an immigration agency with multiple jurisdictions, integrating and institutionally strengthening existing state structures.

NOTES

1. Cf. KEELEY, 2009, p.12
2. Cf. KEELEY, Op. cit.
3. Cf. SASSEN, 1988.
4. Cf. SASAKI and ASSIS, 2000.
5. Cf. COENTRO, 2011.
6. Cf. FIRMEZA, 2007.
7. Cf. PNUD, 2009.
8. Cf. PATARRA, 2006; and COENTRO, 2011.
9. Cf. MARTINE, 2005; and COENTRO, 2011.
10. Cf. OCDE, 2011b.
11. Cf. COENTRO, Op. cit.
12. Cf. OIM, 2009, p19.
13. Cf. OIM, 2012, p. 68.
14. According to Gouveia, Saenz and Cogua (2011), Venezuela is experiencing increasing political agitation and alarming levels of criminality. Combined with ideological polarization, this has helped transform Venezuela from a country of immigrants into a country of emigrants.
15. Cf. OCDE, 2011.
16. Vázquez (2012) argues that the government's reaction to the general strikes of 2002 and 2003 in the Venezuelan state oil company triggered a great diaspora of professionals from the oil sector, which continued despite the increase in the price of a barrel of oil and the international crisis.
17. Cf. OCDE, 2011b.
18. Cf. OCDE, Op.cit.
19. Cf. OCDE, Op.cit.
20. Comissão Independente sobre Migração para Alemanha, 2001, p.26.
21. GOZA apud ACCIOLY, 2009.
22. Cf. ACCIOLY, 2009, p.3.
23. The term 'brain drain' – explained as the "migration of intellectuals, the exodus of skills, the migration of talents, and the inverse transfer of technology" (GASER apud ACCIOLY, 1999, p.16) – is used here in the figurative sense, without any intention of evoking a biological meaning for the term.
24. ACCIOLY, 2009.
25. Cf. COENTRO and MARTES, 2009 apud COENTRO, Op. cit., p.20

26. Debate available at: http://www.youtube.com/watch?v=NK0Y9j_CGgM: Below is a transcription of an extract of what Dr. Kaku says: "How come the scientific establishment in the United States does not collapse? Let me tell you something. Some of you may not know this. America has a secret weapon, that secret weapon is the H1B. Without the H1B, the scientific establishment of this country would collapse. Forget Google! Forget Silicon Valley! There would be no Silicon Valley without the H1B. And you know what the H1B is? It is the genius visa, ok? Do you realize that in the United States 50% of all PhD candidates are foreign born? At my system, one of the biggest in the United States, 100% of PhD candidates are foreign born. The United States is a magnet sucking up all the brains of the world, but now the brains are going back."
27. BORJAS and FRIEDBERG, 2009, p.
28. Cf. CERVANTES and GUELLEC, 2012,
29. STRAUBHAAR, 2000, pp.20-21.
30. Cf. IOM, 2010 a, p.11.
31. Cf. CERVANTES and GUELLEC, Op. cit.
32. Cf. COENTRO, Op. cit., p.18.
33. Cf. MARTIN 2006 apud COENTRO Op. cit.
34. Cf. COENTRO, Op. cit., p.19.
35. Cf. COENTRO, Op. cit.
36. Cf. CERVANTES and GUELLEC, Op. cit.
37. Cf. MARU, 2009.
38. CERVANTES and GUELLEC, Op. cit.
39. THE ECONOMIST, 2012.
40. Cf. GIBNEY, 2012.
41. Cf. FERNANDES and DINIZ, 2009.
42. Cf. CERVANTES and GUELLEC, Op. cit.
43. Cf. CHISWICK, 2005 apud COENTRO, Op. cit., p.43.
44. Cf. SELA, 2009 apud COENTRO, Op. cit.
45. Cf. RIOS-NETO, 2005.
46. Cf. UNFPA, Op. cit.
47. Cf. COENTRO, Op. cit.
48. Cf. United States Department of Labor, Bureau of Labor Statistics. Data from January 2012 with a seasonal adjustment, available at: http://www.bls.gov/eag/eag.us.htm.
49. Cf. Data referring to December in the respective years for the population aged 10 or more, calculated for six Brazilian metropolitan regions: Recife, Salvador, Belo Horizonte, Rio de Janeiro, São Paulo and Porto Alegre, available at the IBGE site, accessed on 20/06/2012.

50. 50. Cf. COENTRO, Op.cit.
51. Cf. ALVES, 2008.
52. Cf. ALVES, Op. Cit. p.11.
53. Cf. BRITO, F., 2010.
54. Cf. MAGALHÃES, J.P. de Almeida in SAMPAIO, 1988.
55. OIM, 2012, p.67.
56. MCGURK, 2010.
57. Cf. OCDE 2010b.
58. Cf. HANUSHEK e WOESSMANN, 2008 apud OCDE 2010b.
59. The Aon Hewitt People Risk Index classifies risk in relation to difficulties with recruitment, the employment and reintegration of people, comparing 30 factors in 131 locations in the world on scales constructed in accordance with a common rationality. Each of the 30 factors has a scale of 10 points associated with five statements. The lowest possible classification in general (no risk) is 25 points and the highest possible classification (maximum risk) is 250 points. The 30 factors are organized in five categories, or clusters: (i) Demographic Risks: associated with the supply of labor, the economy and society; (ii) Risks Linked with Governmental Support: associated with governmental action, whether positive or negative, in relation to the administration of people; (iii) Risks Linked to the Educational System: associated with the difficulty of finding skilled professionals; (iv) Risks Linked to the Development of Talent: deals with the quality and availability of resources for recruitment and training; and (V) Risks Linked to Employment Practices: seeks to evaluate the risks associated with hiring people. For more: Cf. Table I in the appendices.
60. Cf. FOONG and LIM, 2011.
61. Cf. AGHION and HOWITT, 2006 apud OCDE 2010b.
62. The Human Development Index (HDI) is a measure consisting of data about life expectation at birth, education and per capita GDP (as an indicator of the standard of living) collected at the national level. Every year UN member states are classified according to these measures.
63. The Knowledge Economy Index (KEI) takes into account whether the environment of the country is suitable for knowledge to be used effectively for economic development. KEI is calculated based on the average score of the performance of the region related to the knowledge economy – economic incentive and institutional regime, education and human resources, the innovation system and government prioritization of information and communication technology (ICT).

64. Cf. ARDICHVIL, ZAVYALOVA and MININA, 2012.
65. Cf. ARDICHVIL, ZAVYALOVA and MININA, Op. cit.
66. Cf. IBGE, 2009.
67. Cf. BRASIL, MEC-CAPES, 2010.
68. Cf. CGEE, 2010.
69. Cf. IBGE, 2000.
70. For the complete paragraph Cf. Coentro, Op. cit., p.69.
71. Cf. OCDE, 2009.
72. Cf. RICHMOND, 1988.
73. Cf. SASAKI and ASSIS, 2000.
74. Cf. THOMAS and ZNAIECKI, 1984.
75. Cf. GABACCIA, 1992.
76. Cf. HARRIS and TODARO, 1970 apud SASAKI and ASSIS, Op. cit.
77. Cf. PORTES,1976.
78. Cf. SASAKI and ASSIS, Op. cit.
79. Cf. STARK and BLOOM,1985 apud SASAKI and ASSIS, Op. cit.
80. Cf. MASSEY, 1997 apud SASAKI and ASSIS, Op. cit.
81. Cf. BECKER, 2006.
82. OIM, 2012, p.83.
83. Cf. Brasil/MTE, 2012.
84. Cf. CARVALHO, 2006.
85. Cf. REZENDE, 2005, p.130.
86. Cf. UNFPA, Op. cit.
87. Cf. GONÇALVES, 2008.
88. Revista Você S/A. Os chineses continuam chegando. 08/04/2011. Available at: http://vocesa.abril.com.br/desenvolva-sua-carreira/materia/chineses-continuam-chegando-628255.shtml
89. Cf. FMI, 2012.
90. The choice of European countries was due to the abundance of EUROSTAT data and not to any form of Eurocentrism.
91. The period of the dictatorship in Brazil.
92. Law 6.964, dated 9 December 1981 – Alters the dispositions of Law 6.815.

APPENDICES

APPENDIX I
BIBLIOGRAPHIC REFERENCES AND BIBLIOGRAPHY

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APPENDIX 2
ADDITIONAL INFORMATION

TABLE I – HUMAN CAPITAL AREAS AND FACTORS OF HUMAN RISK

Risk Areas of Human Capital	Risk Factors of Human Capital
Demographic	1. Size of Economically Active Population 2. Immigration /Emigration* 3. Productivity of Labor Force 4. Aging of Population. 5. Availability of Labor Force in the Future*
Government Support	6. Planning Risk of Future Workforce* 7. Political and Terrorism Risks* 8. Rates of Crimes and Violence 9. Government Relations 10. Corruption
Educational System	11. Literacy Rates 12. Capacity of the Educational System 13. Secondary School Graduates 14. Enrollment in Higher Education 15. Educational Spending
Talent Development	16. Quality of Available Talent 17. Quality of Training 18. Quality of Training Management 19. Languages Spoken 20. Brain Drain
Employment Practices	21. Bias and Favoritism 22. Labor Relations 23. Staff Turnover 24. Health Benefits 25. Retirement Benefits 26. Equal Opportunity 27. Executive Recruitment 28. Health and Safety Occupation 29. Redundancy Restrictions* 30. Rigidity with Staff Costs

TABLE II – RESULTS OF PISA (EVALUATION OF INTERNATIONAL STUDENTS PROGRAMME): WHAT STUDENTS KNOW AND CAN DO (2009)

	On the scale of total reading	On the reading subscale					Mathe matical Scale	Science Scale
		Access and retrieve information	Integrate and interpret	Reflect and evaluate	Continuous texts	Non-Continuous Texts		
Shanghai – China	**556**	549	558	557	564	539	600	**575**
Korea	**539**	542	541	542	538	542	546	**538**
Finland	**536**	532	538	536	535	535	541	**554**
Hong Kong - China	**533**	530	530	540	538	522	555	**549**
Singapore	**526**	526	525	529	522	539	562	**542**
Canada	**524**	517	522	535	524	527	527	**529**
New Zealand	**521**	521	517	531	518	532	519	**532**
Japan	**520**	530	520	521	520	518	529	**539**
Australia	**515**	513	513	523	513	524	514	**527**
The Netherlands	**508**	519	504	510	506	514	526	**522**
Belgium	**506**	513	504	505	504	511	515	**507**
Norway	**503**	512	502	505	505	498	498	**500**
Estonia	**501**	503	500	503	497	512	512	**528**
Switzerland	**501**	505	502	497	498	505	534	**517**
Poland	**500**	500	503	498	502	496	495	**508**
Iceland	**500**	507	503	496	501	499	507	**496**
United States	**500**	492	495	512	500	503	487	**502**
Lichtenstein	**499**	508	498	498	495	506	536	**520**
Sweden	**497**	505	494	502	499	498	494	**495**
Germany	**497**	501	501	491	496	497	513	**520**
Ireland	**496**	498	494	502	497	496	487	**508**
France	**496**	492	497	495	492	498	497	**498**
Taipei	**495**	496	499	493	496	500	543	**520**
Denmark	**495**	502	492	493	496	493	503	**499**
UK	**494**	491	491	503	492	506	492	**514**
Hungary	**494**	501	496	489	497	487	490	**503**
Portugal	**489**	488	487	496	492	488	487	**493**
Macau - China	**487**	493	488	481	488	481	525	**511**
Italy	**486**	482	490	482	489	476	483	**389**
Latvia	**484**	476	484	492	484	487	482	**494**
Slovenia	**483**	489	489	470	484	476	501	**512**
Greece	**483**	468	484	489	487	472	466	**470**
Spain	**481**	480	481	483	484	473	483	**488**
Czech Republic	**478**	479	488	462	479	474	493	**500**
Slovak Republic	**476**	491	481	466	489	471	497	**490**

	On the scale of total reading	On the reading subscale					Mathe matical Scale	Science Scale
		Access and retrieve in-formation	Integrate and interpret	Reflect and evaluate	Continuous texts	Non-Continuous Texts		
Croatia	**476**	492	472	471	478	472	460	**486**
Israel	**474**	463	473	483	477	467	447	**455**
Luxembourg	**472**	471	475	471	471	472	489	**484**
Austria	**470**	477	471	463	470	472	496	**494**
Lithuania	**468**	476	469	463	470	462	477	**491**
Turkey	**464**	467	459	473	466	461	445	**454**
UAE (Dubai)	**459**	458	457	466	461	460	453	**466**
Russian Federation	**459**	469	467	441	461	452	468	**478**
Chile	**449**	444	452	452	453	444	421	**447**
Serbia	**442**	449	445	430	444	438	442	**443**
Bulgaria	**429**	430	436	417	433	421	428	**439**
Uruguay	**426**	424	423	436	429	421	427	**427**
Mexico	**425**	433	418	432	426	424	419	**416**
Romania	**424**	423	425	426	423	424	414	**428**
Thailand	**421**	431	416	420	423	423	419	**425**
Trinidad and Tobago	**416**	413	419	413	418	417	414	**410**
Colombia	**413**	404	411	422	415	409	381	**402**
Brazil	**412**	407	406	424	414	408	386	**405**
Montenegro	**408**	408	420	483	411	398	403	**401**
Jordan	**405**	394	410	407	417	387	387	**415**
Tunisia	**404**	393	393	427	408	393	371	**401**
Indonesia	**402**	399	397	409	405	399	371	**383**
Argentina	**398**	394	398	402	400	391	388	**401**
Kazakhstan	**390**	397	397	373	399	371	405	**400**
Albania	**385**	380	393	376	392	366	377	**391**
Qatar	**372**	354	379	376	375	361	368	**379**
Panama	**371**	363	372	377	373	359	360	**376**
Peru	**370**	364	371	368	374	356	365	**369**
Azerbaijan	**362**	361	373	355	362	351	431	**373**
Kyrgyzstan	**314**	299	327	300	319	393	331	**330**

Source: Database OECD PISA 2009.

Above the average of OECD countries (at statistically significant level).

No statistically significant difference with the average of OECD countries.

Below the average of OECD countries (at statistically significant level).

TABLE III - COUNTRIES OF ORIGIN FOR FOREIGN WORKERS WITH 17 OR MORE YEARS OF STUDY, BY CATEGORY OF VISA ISSUED (2006-2011)

Countries of Origin	Artistic or Sporting	Diplomats	Employment in Brazilian Multinational	Internship or Training	Executive of Multinational Enterprise	Investor	Professor or Researcher	Family Reunion	Third Sector	Government Work	Maritime Work	Temporary Work	Transfer of Technology	Special Visa	Total
US	20	0	226	4	34	13	24	1	0	0	33	30	112	1	**498**
France	4	0	183	22	22	10	30	1	0	0	9	16	32	7	**336**
Japan	0	0	73	2	30	0	0	0	0	0	73	28	103	0	**309**
China	0	0	128	0	5	1	2	0	0	0	0	15	23	0	**174**
Germany	7	0	58	5	11	7	28	0	1	0	3	19	18	2	**159**
Portugal	1	0	84	1	19	4	19	0	1	0	3	6	9	1	**148**
India	0	0	33	1	0	0	3	0	0	0	14	3	89	0	**143**
Italy	1	0	42	1	5	13	30	1	0	0	0	6	13	0	**112**
Spain	2	0	43	1	10	3	14	1	0	0	3	3	24	0	**104**
Peru	2	0	33	0	1	1	47	1	0	0	1	13	2	1	**102**
Columbia	6	0	28	1	2	0	28	1	0	0	1	9	8	1	**85**
Britain	1	0	36	3	2	1	9	0	0	0	8	7	15	0	**82**
Mexico	0	1	34	0	9	1	2	0	0	0	2	7	26	0	**82**
Canada	13	2	15	1	4	1	4	0	0	1	6	5	22	0	**74**
Norway	4	0	4	0	4	1	2	0	0	0	7	0	47	0	**69**
Holand	0	0	31	0	1	4	3	1	2	0	2	14	6	0	**64**
Belgium	2	0	21	0	1	1	3	0	0	0	10	3	19	0	**60**
Sweden	0	0	14	3	2	1	2	0	0	0	3	5	15	0	**45**
Venezuela	1	0	23	1	2	0	2	0	0	0	0	4	5	1	**39**
Korea	0	0	5	0	16	1	0	0	0	0	1	3	11	0	**37**
Argentina	0	0	3	0	1	0	20	0	0	0	0	3	5	0	**32**
Finland	0	0	10	0	0	0	0	0	0	0	4	7	10	0	**31**
Poland	1	0	5	0	0	0	0	0	0	0	10	1	9	0	**26**
Russia	2	0	5	0	1	0	13	0	0	0	2	0	1	1	**25**
Australia	0	0	6	0	2	1	0	0	0	0	2	1	9	0	**21**
Denmark	1	0	9	0	1	0	1	0	0	0	3	2	4	0	**21**
Switzerland	7	0	6	1	0	1	1	0	0	0	0	2	3	0	**21**
Chile	0	1	2	0	2	0	8	1	0	0	0	3	2	1	**20**
Austria	3	0	6	0	1	1	1	1	0	0	0	1	3	0	**17**
Cuba	0	0	1	0	0	0	13	0	0	0	0	2	0	0	**16**
Equador	0	0	12	0	1	0	1	0	0	0	0	1	0	0	**15**

Countries of Origin	Artistic or Sporting	Diplomats	Employment in Brazilian Multinational	Internship or Training	Executive of Multinational Enterprise	Investor	Professor or Researcher	Family Reunion	Third Sector	Government Work	Maritime Work	Temporary Work	Transfer of Technology	Special Visa	Total
Costa Rica	0	0	7	0	0	0	1	0	0	0	0	3	0	0	11
Uruguay	1	0	1	0	0	1	5	0	1	0	0	1	1	0	11
Taiwan	0	0	8	0	0	0	0	0	0	0	0	1	1	0	10
Ukraine	0	1	1	0	0	0	2	1	0	1	0	2	1	1	10
Ireland	0	0	3	0	1	0	0	0	0	0	1	1	3	0	9
Romania	0	0	2	0	0	0	3	0	0	0	1	0	3	0	9
Bolivia	0	0	2	0	0	0	2	0	0	0	0	3	1	0	8
New Zealand	0	0	1	0	2	0	0	1	0	0	1	0	2	0	7
Panama	0	0	4	0	0	0	0	1	0	0	1	0	1	0	7
Malaysia	0	0	1	0	0	0	0	0	0	0	2	0	3	0	6
Republic of South Africa	0	0	2	0	0	0	0	0	0	0	0	0	4	0	6
Bulgaria	1	0	3	0	0	0	0	0	0	0	1	0	0	0	5
Philippines	0	0	0	0	1	0	0	0	0	0	2	1	1	0	5
Greece	1	0	2	0	0	0	0	0	0	0	2	0	0	0	5
Iran	0	0	1	0	0	0	2	0	0	0	0	0	2	0	5
Israel	2	0	2	0	1	0	0	0	0	0	0	0	0	0	5
Paquistan	0	0	1	0	0	0	0	0	0	0	1	1	2	0	5
Czech Republic	0	0	5	0	0	0	0	0	0	0	0	0	0	0	5
Thailand	0	0	1	0	0	0	0	0	0	0	0	1	3	0	5
Guatemala	0	0	3	0	0	0	0	0	0	0	0	0	1	0	4
Honduras	0	0	1	0	0	0	0	0	0	0	0	0	2	1	4
Hungary	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4
Paraguay	0	0	0	0	0	0	3	0	0	0	1	0	0	0	4
Republic of El Salvador	0	0	3	0	0	0	0	1	0	0	0	0	0	0	4
Turkey	0	0	2	0	0	0	0	0	0	0	0	1	1	0	4
Cameroon	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
Singapore	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
Nigeria	0	0	2	0	0	1	0	0	0	0	0	0	0	0	3
Serbia	0	0	1	0	0	0	1	0	0	0	0	1	0	0	3
Trinidad and Tobago	0	0	2	0	0	0	0	0	0	0	1	0	0	0	3
Armenia	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
Azerbaijan	0	1	0	0	0	0	0	0	0	0	0	0	1	0	2
Croatia	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2

Countries of Origin	Artistic or Sporting	Diplomats	Employment in Brazilian Multinational	Internship or Training	Executive of Multinational Enterprise	Investor	Professor or Researcher	Family Reunion	Third Sector	Government Work	Maritime Work	Temporary Work	Transfer of Technology	Special Visa	Total
Slovakia	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
Nicaragua	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2
Puerto Rico	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2
Albania	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Angola	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Bangladesh	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Barbados	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Cape Verde	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Kazakhstan	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Slovenia	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Gambia	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Ghana	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Indonesia	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Iraq	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Jordan	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Latvia	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Lebanon	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Lithuania	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Morrocco	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Myanmar	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Moldavia	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Namibia	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Others	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Arab Republic of Egypt	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
St. Vincent	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Senegal	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Tunisia	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Vietnam	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
General Total	**85**	**6**	**1251**	**47**	**195**	**68**	**338**	**13**	**5**	**2**	**219**	**237**	**693**	**18**	**3177**

Source: DAPP/FGV based on MTE data.

TABLE IV – DESTINATION UF OF FOREIGN WORKERS WITH 17 YEARS OF STUDY OR MORE, BY TYPE OF VISA (2006-2011)

State of destination	Artistic or sporting	Diplomats	Employed in Brazilian multinational	Internship or Training	Executive of multinational company	Investor	Professor or Researcher	Family Reasons	Third Sector	Government Work	Maritime Work	Temporary Work	Transfer of Technology	Special Visa	General Total
AL	0	0	0	0	0	1	1	0	0	0	0	0	0	0	**2**
AM	0	0	24	1	6	0	10	0	0	1	9	12	13	1	**77**
AP	0	0	5	0	1	0	0	0	0	0	3	2	3	0	**14**
BA	0	0	27	0	1	4	9	0	0	0	0	5	4	0	**50**
CE	0	0	7	0	0	12	9	0	0	0	1	0	11	0	**40**
DF	1	5	25	0	1	0	23	1	2	1	2	6	4	3	**74**
ES	0	0	2	0	0	0	4	0	0	0	1	2	6	0	**15**
GO	0	0	1	0	1	2	2	1	0	0	2	0	2	1	**12**
MA	0	0	2	0	0	1	1	0	0	0	0	0	0	0	**4**
MG	20	0	41	2	7	5	18	1	0	0	1	11	38	1	**145**
MS	0	0	2	0	0	0	1	0	0	0	0	0	1	0	**4**
MT	0	0	2	0	0	0	2	0	0	0	0	1	0	0	**5**
PA	0	0	2	1	2	0	7	0	0	0	0	0	6	0	**18**
PB	0	0	0	0	0	1	3	0	0	0	0	0	0	0	**4**
PE	0	0	9	0	1	0	23	0	0	0	0	3	1	0	**37**
PI	0	0	0	0	0	0	0	0	0	0	0	0	0	1	**1**
PR	4	0	44	1	8	0	18	0	0	0	1	18	10	0	**104**
RJ	16	1	229	7	39	12	96	4	1	0	85	24	207	2	**723**
RN	0	0	1	0	0	2	9	0	0	0	2	1	0	0	**15**
RS	0	0	30	0	2	2	15	0	0	0	0	9	13	0	**71**
SC	0	0	9	0	3	2	10	0	0	0	0	10	7	2	**43**
SE	0	0	0	0	0	0	2	0	0	0	1	0	0	0	**3**
SP	42	0	734	35	115	21	53	6	2	0	109	133	344	4	**1598**
TO	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**1**
Not Stated	2	0	54	0	8	3	22	0	0	0	2	0	23	3	**117**
General Total	**85**	**6**	**1251**	**47**	**195**	**68**	**338**	**13**	**5**	**2**	**219**	**237**	**693**	**18**	**3177**

Source: DAPP/FGV based on MTE data.

TABELA V - COUNTRY OF ORIGIN (TOP 10) AND STATE OF DESTINATION OF FOREIGN WORKERS WITH 17 YEARS OF STUDY OR MORE (2006-2011)

Federative Unit	USA	FRANCE	JAPAN	CHINA	GERMANY	PORTUGAL	INDIA	ITALY	SPAIN	PERU	Total of Top 10	Representativeness of Top 10 (%)
AL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**	**100,00%**
AM	4	6	22	0	3	2	0	1	0	1	39	**50,65%**
AP	0	0	12	0	0	0	2	0	0	0	14	**100,00%**
BA	18	0	0	0	2	4	3	2	0	5	34	**68,00%**
CE	5	3	1	2	2	2	1	3	7	0	26	**65,00%**
DF	19	5	1	1	0	3	5	2	4	2	42	**56,76%**
ES	1	1	0	0	1	0	0	3	0	1	7	**46,67%**
GO	3	0	0	0	0	1	1	0	0	2	7	**58,33%**
MA	1	0	0	0	1	0	0	1	0	0	3	**75,00%**
MG	21	6	20	1	14	5	5	9	5	9	95	**65,52%**
MS	2	0	0	0	0	0	0	0	0	0	2	**50,00%**
MT	0	2	0	0	1	0	0	0	0	1	4	**80,00%**
PA	3	4	0	1	0	1	0	0	0	0	9	**50,00%**
PB	0	2	0	0	0	0	0	0	0	0	2	**50,00%**
PE	5	3	0	0	4	5	1	4	2	0	24	**64,86%**
PI	1	0	0	0	0	0	0	0	0	0	1	**100,00%**
PR	22	23	9	0	6	3	4	0	2	5	74	**71,15%**
RJ	112	101	9	41	18	31	28	31	17	21	409	**56,57%**
RN	2	2	0	0	1	3	1	1	1	0	11	**73,33%**
RS	21	6	0	4	7	4	4	2	1	8	57	**80,28%**
SC	4	4	0	1	5	2	0	1	2	2	21	**48,84%**
SE	0	0	0	0	0	0	0	0	0	2	2	**66,67%**
SP	239	155	223	121	87	72	84	48	61	39	1.129	**70,65%**
TO	1	0	0	0	0	0	0	0	0	0	1	**100,00%**
Not Stated	14	13	12	2	7	10	4	2	2	4	70	**59,83%**
Geraneral Total	**498**	**336**	**309**	**174**	**159**	**148**	**143**	**112**	**104**	**102**	**2.085**	**65,63%**

Source: DAPP/FGV based on MTE data.

APPENDICES 3
LIST OF INDICES

LIST OF ACRONYMS:

UNHCR	United Nations High Commission for Refugees
BRICs	Brazil, Russia, India and China
CGIg	Coordenação-Geral de Imigração (General Coordination for Immigration)
CNIg	Conselho Nacional de Imigração (National Council of Immigration)
CT&I	Ciência, Tecnologia e Inovação (Science, Technology and Innovation)
GFB	Global Financial Board
HDI	Human Development Index
IKE	Index of Knowledge Economy
MERCOSUL	Common Market of the South
MJ	Ministry of Justice
MRE	Ministry of Foreign Relations
MTE	Ministry of Labor and Employment
OCDE	Organization for Economic Cooperation and Development
IOM	International Organization for Migration
WTO	World Trade Organization
UNO	United Nations Organization
PF	Federal Police
PNUD	United Nations Development Programme
RF	Federal Income Tax Service
SELA	Latin American and Caribbean Economic System
SIAPRO	System for Monitoring Processes
SINCRE	Foreigner Registration System
SINTE	International Traffic System
IT	Information Technology
ITC	Information and Communication Technology
UF	Federative Unit
UNFPA	United Nations Fund for Population

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