

ON THE BRAIN COMPETITION POLICIES IN THE UNITED STATES AND THE EUROPEAN UNION¹

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Politiky konkurencie o najlepšie mozgy v Spojených štátoch amerických a v Európskej únii

Abstract: *The knowledge economy has propelled the emergence of a new breed of policy that aims to attract the highly skilled labor in order to secure local growth. The so-called Brain Competition Policy refers to the attraction, education and circulation of talent within and across economies. The policy has arguably its roots in the United States (US) where one of the first laws favoring high skilled workers were passed and where the highest inflows of high skilled labor have been registered for decades now. Scholarly work however proves that the US recipe for success is not universal. The European Union (EU) countries have executed several attempts to copy the principles of the US Brain Competition Policy into their legislation but many of those failed due to cultural and societal differences. The aim of this paper is to assess these differences, and draw up links to the flows of human capital registered for both regions. The paper summarized some key troubles pending for the EU to successfully develop and implement the very own Brain Competition Policy (BCP).*

Keywords: *human capital, USA, European Union, migration, brain drain*

JEL Classification: R 58, O 32

1 Introduction

For the past years, the global hunt for innovation throughout the world has intensified. The global financial and economic crisis revealed the need for bright minds with marketable ideas [2, 13]. The so-called human capital appears to be more valuable than ever for any company's, society's, economy's development [9]. With less barriers put up for top-notch education and compelling reward systems of companies aiming at creative solutions

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for new or existing products, the world has never faced so fierce and massive flows of human capital than the very last years.

The flows, however, are no more just one-way. Not long time ago, majority of studies pointed to the tendency of students to stay in a country of their university studies [1] thanks to the professional ties they create throughout the education and collected experience with the system. The recent years, more and more countries announced reward programs for their nationals or former nationals who gained quality education or work experience abroad for relocation back home. The most observed in this initiative is China since the Chinese students and workforce account for majority of international graduates at the US universities. In addition, the Czech Republic and Slovakia have launched also their programs to attract some of their brains residing abroad back.

The paper draws on these latest developments and attempts to find links between policies in place and high skill migration flows. The emerging efforts of the EU to establish their own brain competition policy are discussed. The policy recommendations are summarized in the final part of the paper and aim to contribute to the discussions foreseen to be held during the Slovak presidency of the EU in the second half of 2016, concerning foremost the halfway achievements of the 2020 EU's Strategy.

2 Concept of Brain Competition Policy

The Brain Competition Policy (BCP) is a relatively new concept in the literature and refers to all policies targeted at retention, attraction, education and circulation of human capital [10]. As such, it surpasses the competencies of local institutions such as universities or public authorities. As a matter of fact, the BCP is often viewed as a multi-level and multi-policy strategy since it relates to the common goals of sustainable development pursued at the supranational level such as at the level of the EU or the World Trade Organization (WTO), but also relates to regional efforts to build innovative networks, especially between education institutions and the business sector. The policies involved extend thus to those regulating labor market, social security, migration, etc. The schooling (formal education) represents just a small part of human capital development. Informal education accompanies most of the activities of individuals and thus is of greater importance. Table 1 summarizes the different levels and policies that the BCP interferes with.

socioeconomic benefits out of that taking, simultaneously, the lead role in innovation and technology production [7].

In comparison, the EU BCP is in its “huggies”. It was anchored in the Innovation Union Commitment 30, where the EU Member States assumed responsibility to “*ensure that the best academics, researchers and innovators reside and work in Europe and to attract a sufficient number of highly skilled third country nationals to stay in Europe*”. Several initiatives followed. Some may not have attained the expected attention (e.g. “blue cards”), but others reported huge success (foremost the mobility programs such as Erasmus or Marie (Sklodowska-)Curie Actions), and there are further promising actions in progress tackling *inter alia* labor market barriers for mobile researchers (pension portability, recognition of diplomas), missing information platforms for scientific job offers, and team-up possibilities EU-wide (EURAXESS, CORDIS), research fragmentation (clusters of excellence, such as the European Institute of Technology), or lack of common EU voice towards transnational research cooperation (Strategic Forum for International Science and Technology Cooperation, SFIC).

Table 2 summarizes the stylized facts and institutional differences between the EU and US systems. It is noteworthy to mention that even though we talk about Anglo-Saxon model, the description fits only the United States. The United Kingdom may cope with some facts like education style and labor market, even in terms of inflows of students, but in terms of inflows of foreign labor it has been flailing in the past couple years.

Table 2

BCP in the US and EU: Stylized facts and institutional differences

	US/ liberal market economy/ Anglo-Saxon model	EU/ coordinated market economy/ Rhine model
Migration and mobility	Small outflows of native talent; large inflow of foreign talent	Large outflows of native talent; small inflows of foreign talent
	Positive lock-in effect in the competition for talent because of a large stock of foreign highly-skilled workers (positive network effects)	Negative lock-in effect in the competition for talent because of a large stock of low-skilled workers (negative network-effects)
	High labor market oriented mobility and flexible labor markets	Low labor-market-oriented mobility and dominance of long-term contracts
	Migration legislation in favour of high-skilled immigration since the 1950s	Policy towards a skill-biased migration regime changed only recently; traditional migration regimes supported the influx of low-skilled workers
	Federal state as the main actor in migration policy	Complex multi-level governance in migration issues
Socioeconomic context and labor market	Weak public sector; low level of public goods and social security	Strong public sector; high level of public goods and social security
	Individualized wage bargaining (Decompression of wage structure); low income taxes; relatively high wages for highly-skilled workers	Centralized wage bargaining (Compression of wage structure); high income taxes; relatively low wages for highly-skilled workers
	One common language: English as global lingua franca	Several, very different languages, seldom taught outside the country or the EU
	Large integrated labor market with common institutions	Fragmented labor market with powerful national borders for third-country nationals
University sector	Concentration of leading world class universities and star scientists	Dominance of mediocre universities
	Private universities offer more discretion in hiring academic scholars and selecting students	Public universities are more restricted in discretion and student selection
	Tenure track and excellence based competition	Insecure career prospects and network based competition
	Strong university industry linkages	Weak university industry linkages

Business sector	High-tech and project oriented industries	Diversified quality production
	Radical innovation, analytical knowledge base, general skills	Incremental innovation, synthetic knowledge base, firm specific skills
	Knowledge spillovers due to inter-company mobility of highly-skilled workers	Knowledge spillovers due to intercompany R&D collaborations
	Globally visible and large industrial clusters, big enterprises	Weak or rather unknown and small clusters, SMEs
	Low barriers for conducting and starting a business	High barriers for conducting and starting a business, lack of venture capital

Source: [10].

In terms of mobility, Table 2 highlights that the EU is struggling with large stock of low skilled workers. The low skilled worker inflows boomed in the past year when more than 1 million people came from Syria, Afghanistan and other political instable countries. The policies in the EU (and especially Germany) enabled them to do so. The generous social benefits for asylum seekers and favorable conditions when applying for visa, however, met the reality when the inflows exceeded the expected volumes and the countries could not handle the masses of immigrants. The escalation of conflicts and riots of unsatisfied and culturally un-integrated people resulted in escalation of public fear and emergence of nationalistic and even extremist parties in national parliaments across the EU. One of the last cases was the election of extreme right-wing party of M. Kotleba to the Slovak national parliament in March 2016. The problem of low skilled workers in the EU is fuelled by slowly moving decision-making process in the EU. The attraction of foreign human capital is replaced by attraction of low skilled what does not match the Strategy 2020 goals of the EU and the related Innovation Union Commitment 30.

In addition, Table 2 points to the fact that even though the relatively low wages for high skilled workers in the EU may be compensated by lower costs of health security and large benefits from social security systems, the high skilled workers in the EU are discouraged by low flexibility of labor market and dominance of mediocre universities. The US universities are flexible to hire people from outside the country and usually love to do so since they value difference and seek inspiration abroad. The EU institutions tend to stick to their own local people and value social ties more than their US counterparts.

Moreover, the new solutions arising at the US universities are immediately trying to find investors while in the EU the universities usually keep their solutions a secret. Many legislative acts do provide only pro-forma solutions to brain drain. For example, the Slovak government launched in 2015 a new

program called “Návrat domov” (Return home). The program is officially targeted to attract successful professionals, researchers and academicians of Slovak origin residing abroad back to Slovakia. The program, however, provides limited compensations for such relocations – 10,000 EUR for a returning researcher under thirty years of age and 50,000 EUR for a returning researcher over 30 [6] and these amounts are just one-time payments. They do not account for costs of relocation of families or compensation for administrative hurdles that the relocating individual faces. They also do not take into account the difference in monthly salaries between Slovakia and the country of residence of the returning professional. So far, only one single professional has accepted to return under the support of this program, namely for a position of a Professor at the Faculty of Mathematics, Physics and Informatics at the Comenius University [4].

Another pending issue of the EU’s BCP is that due to low wages offered to high skilled professionals, the brains leave not just for opportunities offered abroad but leave to positions of no innovative value. The brilliant brains with potential are usually locked down by multinational companies since they offer them wages higher than those offered in the research or academia [3, 8]. The potential of such professionals is then limited and the EU loses in terms of the innovation and growth pace compared to the US even more.

All in all, the success of the US in attracting foreign talent goes far beyond some immigration laws. As Peri [7, p. 44] states: “The very large inflow of scientific talent to the United States, which by all accounts has been a key to sustaining high rates of technological innovation, has largely been powered by the pull of America’s best research institutions – not by its immigration laws”. US managed to build a system of flexibility and positive attitude towards different backgrounds that the foreign labor brings in. This perspective is shared throughout the culture and generations what makes the US a unique melting pot of opportunities for high skilled labor as opposed to the EU market.

4 Current State of Migration into the US Compared to the EU

Looking at the official statistics of the international organizations such as OECD or the World Bank, the US has been clearly ahead in terms of human capital intake (Table 3). The States welcome in the 2000s on average 23.4 millions scientists more than they lost. To the contrary, the EU countries registered negative balance of high skilled labor flows. A special case was United Kingdom that had almost 17% of all the high skilled labor working abroad. The local people got education and then left, letting foreign students take over the local jobs.

Table 3

Migration of brains in the US and selected European Union countries

	Share of foreign population with tertiary education ¹	Percentage of people with tertiary education, living abroad ²	Migration balances for star scientists ³
Canada	38.0	4.9	0.0
United States	26.1	0.5	+23.4
United Kingdom	34.8	16.7	-3.6
France	18.1	3.9	+0.5
Germany	14.9	8.8	-1.7
Italy	12.2	7.0	-1.6

Source: ¹ OECD Stat, ² World Bank Stat, ³ Star scientists are defined according to the ISI HighlyCited.com database, Data: Maier et al. (2007).

Another database for the year 2008 (Table 4) show the alarming numbers that while the US 96.6% of US PhD graduates work further in the US labor market, only 26.7% of the EU PHD's stay in the EU countries and almost 67% work in the USA.

Table 4

Recent PhD graduates' country of origin and country of current employment or residency, 2008

Country or region of origin	Country or region of origin of origin (% distribution)	Country or region of current employment or residency							Return to home country ^a
		United States	Asia	European Union	Canada	Central and South America	Africa	Other	
All	100.0	85.9	6.9	2.9	1.6	1.4	0.4	1.0	65.1
United States	58.7	96.6	0.6	1.5	0.6	0.1	0.2	0.4	96.6
China	10.8	93.1	4.4	0.5	1.7	D	D	0.3	3.7
European Union	4.7	66.9	1.2	26.7	1.3	D	D	3.4	16.6
India	4.2	87.9	5.6	2.5	2.8	D	D	D	5.2
South Korea	3.7	53.9	45.0	D	D	D	D	D	43.5
Turkey	1.6	55.2	37.7	4.5	D	D	D	D	37.3
Taiwan	1.6	51.6	44.9	D	D	D	D	D	42.5
Canada	1.5	66.6	D	D	30.7	D	D	D	30.7
Other Asian countries	5.1	49.6	45.1	1.5	2.5	D	D	1.1	41.6
Former Soviet Union	1.2	83.5	D	4.1	7.0	D	D	5.4	4.1
South America	1.9	47.7	D	5.3	2.4	43.2	D	D	40.2
Central America	0.8	42.4	D	D	3.4	48.2	D	D	48.2
Africa	1.3	74.2	2.9	D	3.6	D	17.9	D	15.9
All other non-United States	3.0	64.7	12.7	6.6	3.9	2.8	D	8.8	6.3

D = suppressed to avoid disclosure of confidential information.

Source: OECD Statistics, 2010.

The most recent studies show that the times have been changing. Using the LinkedIn data on migration of professionals, State et al. [11] show that while 27% of migrating professionals among the sample group chose the U.S. as a destination in 2000, in 2012 just 13% did. The decline was seen across the sample of professionals with all degrees – bachelor's, master's as well as doctoral ones. The biggest drop was however among those in the science, technology, engineering and math (STEM) fields, i.e. from 37% to 15%. Asian countries witnessed the highest increase in incoming professionals, cumulatively by 26% of all migrating professionals worldwide in 2012, compared with just 10% in 2000. Australia, Oceania, Africa and Latin America also saw an uptick in their share of the world's professional migration flows. In another study, Zagheni et al. [14] found that migration rates from Mexico to the U.S. dropped while migration from European countries such as Greece and Ireland that got hit hard by the economic crisis hard stood up.

The reasons for such a shift in high skilled migration might vary. State et al. [11] mention the U.S.'s visa system that gets more complicated over the years, greater demand for professionals in the other countries such as China, fewer opportunities for immigrants due to the dot-com collapse of the early 2000s and the 2008 recession. What they do not mention is the reverse migration. The multicultural society in the States has evolved in the way that does force neither immigrants nor their kin to integrate fully into the American society. They build their own worlds in the United States, and many of them eventually decide to return back to the homeland of their relatives since they do speak language, and see their homeland emerging economically. This phenomenon has been studied for the Chinese student and research community in the US by Wang and Bao [12]. The results show that the human capital that was once off to find greater opportunities abroad is being lured back to their home countries since the economic conditions are improving there. Moreover, there are new programs of support for returning high-skilled professionals launching. In 2006, China issued its Medium- and Long-term Talent Development Plan (2010-2020), which seeks to expand the country's team of innovators and cultural elites in order to transform it into an "innovation society". In line with this overall plan, the Chinese government has successively launched a series of talent programs like the Thousand Talents Program and the Thousand Youth Talents Program, which were launched in 2008 and 2011, respectively. The Thousand Talents Program aims to attract around 2,000 brains under 55 years of age back, who have held professorships or equivalent positions in renowned foreign universities or research institutes over a period of 5-10 years. The Thousand Youth Talents Program aims to attract about 2,000 excellent young overseas scholars, under age 40.

It is thus clear that the pattern of human capital redistribution is changing and the previously dominant position of the US in the human gain is shattering. The US might lose just because the multicultural society they have built does not guarantee the full integration of migrants into the US society; it does not build their national identity and pride as Americans and thus let them easily leave the country when the socio-economic conditions in their home countries change.

Conclusions

Brain Competition Policy represents a new economic concept that enables decision makers to see the complexity of human capital impacts in the economy and teach them how to play around and combine the measures that might be most effective in retention and attraction of high-skilled labor given the circumstances.

Our paper highlights that there are considerable disparities between the models of Brain Competition Policies in the United States and the European Union. While the US has collected much experience in the field and has the benefit of very flexible education and labor markets, the EU is struggling to find the recipe to retain their own human brains at home, not to mention to attract talents from abroad. The EU has been slow in making support programs for return-seeking professionals and more importantly, has been struggling to bring all its members to cooperate and act together. In addition, it has been struggling with the booming low-skilled immigration since 2015 that resulted from the low-skill-labor-favoring acts of Germany. The fact that the acts of just one country inflicted problems of sizeable magnitude for all the EU is just one piece of evidence showing how loose are the ties of cooperation across the EU. As a result, the EU is sentenced to stay in the vicious cycle of low innovation and brain drain.

Nevertheless, the dominant position of the US in the inflows of talent is not set to stone. The position has been shattering since some parts of the world such as China emerged economically and announced several programs favoring return migration of high skilled professionals. That drives many Chinese students and researchers from the US to seek career opportunities back in China. Thus, it might be about the time for the US to reconsider some of their policies towards the human capital, foremost immigration and labor market rules so that the lack on human capital would not harm their economic growth.

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