

The demand for foreign high-skilled workers in the high-tech sector: France and Germany in a comparative perspective

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Introduction

This paper investigates the demand for foreign high skilled (HS) workers in the high-tech sector, especially in the ICT (Information and Communication Technology) in the two most performing countries in continental Europe - France and Germany¹ - focusing on the '90s and early 2000s. However, the analysis moves from the '70s, as this decade represented a turning point in migration flows. Yet, the paper does not focus on the shift from labour migration to family reunifications, generally considered as the capital change in international migration. On the contrary, this decade will be analysed as a watershed in employment's features, as the number of employees in the third sector overcame that of people working in the secondary one. This shift resulted by multiple factors, often linked with improvements in the technological sector. The success of technology in different sectors, combining efficiency, high productivity and smaller demand of low-skilled workers, coupled with the economic crisis that followed the 1973 oil shock, affected the nature of mobility schemes and migration policies adopted by immigration countries. Once the issue framed, the paper shows in a comparative perspective the historical reasons of such demand, the immigration policies tailored by France and Germany in the early 2000s and how these policies have influenced the European Union stance towards HS immigration.

Framing the issue

A HS migrant is internationally identified as a foreign-born individual, who is more than 25 years old and holder of an academic or professional degree beyond high school². Although HS migrants are not the main share in international migration, this often-underrated mobility is worth investigating, namely in quality terms. In fact, it impacts the innovation level of receiving countries. Moreover, HS mobility is controversial since it is a "brain drain" for sending countries, losing the most qualified workers and a "brain gain" for receiving countries, trying to attract the best migrant able to enhance their economies and societies.³

The geographical framework of the analysis encompasses France and Germany, both being dynamic economies and important immigration countries in continental Europe. Furthermore, some similarities regarding the technological and innovation sector can be remarked. Firstly, both have a high-tech « sunbelt », precisely on the Southern and Western regions as in the U.S., where a concentration of centres for military research and high-tech development is to be seen⁴. Secondly, important research and education institutions have their headquarters there⁵. Finally, these regions are a magnet for both domestic migration and foreign HS mobility.

An historical overview

HS mobility characterizes a wide spectrum of sectors, yet this paper focuses only on the high-tech one.⁶ This choice is due to the fact that since the '70s it has been an expanding and pervasive sector, with repercussions on different fields (telecommunications, defense systems, transports, research and

¹ In the paper, the word Germany indicates both West Germany (before 1989) and Germany (after 1989)

² Frédéric Docquier, Hillel Rapoport, *Globalization, brain drain, and development* in « Journal of economic literature », 2012, 50.3: (681-730) p. 684. On the controversial definition of HS workers and migrants see Khalid Koser, John Salt, *The geography of highly skilled international migration* in « International Journal of Population Geography » 1997, 3.4: (285-303) p. 287

³ On the historical evolution of studies regarding HS mobility see Khalid Koser, John Salt, cit., pp. 285 - 286

⁴ Both areas developed especially from the '70s, although some important enterprises such as Siemens AG in Munich, Airbus in Toulouse or the Grenoble technopole started attracting HS workers since the late '50s and early '60s. See also Rolf Sternberg, *Reasons for the genesis of high-tech regions—theoretical explanation and empirical evidence* in « Geoforum », 1996, 27.2: 205-223; Erik A. Swyngedouw, *The geography of high-technology production in France and the technology/defense nexus* in « L'Espace géographique », 1988, 269-276

⁵ See Rolf Sternberg, cit., pp. 213-215 and Eric A. Swyngedouw, cit., pp. 272, 273

⁶ High technology is defined as « a scientific technology involving the production or use of advanced or sophisticated devices especially in the fields of electronics and computers » In "High technology" *Merriam-Webster.com Dictionary*, Merriam-Webster, <https://www.merriam-webster.com/dictionary/high%20technology> Accessed 4 May 2021.

development)⁷, it boosts the economic growth and competitiveness of countries and it is the sector in which France and Germany have experienced a chronic labor shortage. Thus, they were forced to look abroad to find the expertise they need⁸.

Albeit the technological sector boomed in the '90s and early 2000s, the research for foreign HS workers in the field started in the mid- '70s, in the aftermath of the economic crisis resulted from the joint effect of the end of the Bretton Woods System and the oil shock of 1973. This crisis is commonly perceived as a turning point in both international labour market and international migration. The former was affected by several shifts such as the rapid transition from the secondary sector to the third sector as the leading one⁹, the increase in investments in technology and a change in the labour force demand from low-skilled workers to HS ones. The latter combined a shift from labour migration to family reunification and governmental attempts to stop low-skilled migration flows while opening the doors and welcoming foreign HS workers.¹⁰ These trends strengthened during the '80s as the neoliberal pattern pushed countries to be more competitive to remain on the globalized and deregulated market¹¹, thus pushing countries to foster investments in R&D and technology to boost their competitiveness. However, the economic factor was not the only responsible of such changes. The declining population in developed countries like France and Germany caused a shortage in the domestic supply of HS workers in the technological sector, encouraging countries to search for foreign experts to match the growing demand of high-tech enterprises. Finally, the idea of appealing foreign HS workers was a highly accepted immigration policy in the political milieu for two reasons: first, few migrants were supposed to enter the country, thus representing an extremely manageable migration; second, HS mobility was perceived as a brain gain, since only the best migrants able to contribute to the enhancement of hosting countries were welcomed¹².

In that new context, migration policies turn to be a heated topic, especially in traditional immigration countries. In the '70s, the main trend in Western European countries was the adoption of restrictive migration policies while trying to regularise and improving living conditions for foreign residents.¹³ In the same period, enterprises began to outsource or to relocate low-skilled labour demanding industries, boosting investments in R&D field and searching for foreign HS labour force¹⁴. Since the '90s, however, foreign work migration regime urged a rethink. Thus, countries like France and Germany made several attempts to attract the "best" migrants, tailoring specific HS immigration policies, mostly taking the 1990 US Immigration Act, namely the H-1B visa as a model.¹⁵

⁷ See Philip H. Abelson, Allen L. Hammond, *The Electronics Revolution* in « Educational Horizons », 1978, 57.1: 31-34

⁸ ICF Consulting services, *Study on the movement of skilled labour*. Publications Office of the European Union, Luxembourg, 2018, p. 286

⁹ See James F. Hollifield, *The emerging migration state* in « International migration review » 2004, 38.3: (885-912) p. 895

¹⁰ Furthermore, improvements in the technological sector fostered migration itself, as it became simpler to get information to decide whether to move or not, while innovation in travel improved mobility chances. See *ibid.*, pp. 892-893

¹¹ According to Hollifield the neoliberalism pattern caused what he identified with the concept of « liberal paradox », the schizophrenic Western governments' behaviour in immigration policies, as they swung between closure and openness. In *ibid.*, p. 885

¹² See *ibid.* p. 902

¹³ During the Valéry Giscard d'Estaing presidencies, initiatives were taken to reduce the chances for entry in France, adopting a closure strategy. The political stance changed during the François Mitterrand presidency as other laws were conceived to manage the phenomenon while granting new rights to foreigners already living in France. See more in Rygiel, Philippe, *Les politiques d'immigration en France des années 1970 aux années 1990* in « Cahiers de l'institut CGT d'histoire sociale » 2013, 22-26. To understand the French tense social climate in the early '70s which influenced the political stance see Yvan Gastaut, *1973, l'année intense* in « Hommes & migrations. Revue française de référence sur les dynamiques migratoires » 2020, 1330: 9-13.

¹⁴ See Olivier Marchand, Claude Minni, *The Major Transformations of the French Labour Market Since the Early 1960s* in « Economie et Statistique », 2019, 510.1: (89-107) p. 95

¹⁵ See Hollifield, *cit.* p. 900

France and Germany: two case studies

To show how France and Germany acted, two immigration policies of the early 2000s designed for foreign HS workers are analysed as follow.¹⁶

The German Green Card Initiative (GGI) of 2000 targeted on the one hand foreign IT-specialists to cover the growing demand by German enterprises and on the other hand foreign students who graduated in German universities to keep qualified and young workers in the hosting country, consequently contributing to the growth of the German economy and society. The importance of such initiative was twofold; it paved the way for similar programs in other European countries, while it reopened a never-ending debate on the general German immigration policy. The *Süßmuth-Commission* was in charge of submitting a report on immigration in Germany with some recommendations. According to it, Germany should consider itself as an immigration country, foster immigration for demographical reasons as well as integration for social ones, speed up the German asylum procedure and simplify the access to labour market for HS migrants, granting them an immediate family reunification. In so doing, the GGI paved the way for the German Immigration Act¹⁷, which came into force in 2005. Looking at the 2003 German Survey on work permissions assured to foreign IT specialists in Germany¹⁸ (see p.6), most of them came from India followed by Baltic States, Rumania and Czech and Slovak Republic. Normally, foreign IT-specialists emigrated from their country, especially if coming from Eastern European Countries. However, in the case of North Africans from Algeria, Morocco and Tunisia, the ratio between foreign IT-specialists immigrated in Germany and foreign IT specialists graduated in Germany is reversed as 65% of North Africans emigrated IT-specialists became holders of Green Card because they graduated in Germany. Despite being an exception, this data well represents the link between higher education and HS employment possibilities.¹⁹

In France, the 1998 Chevènement Law was adopted to grant a specific status for entry and stay for foreign researchers, which then was used for IT-professional permits. Yet, in 2006 a shift in the foreign HS French immigration policy occurred with the Sarkozy Law. Prior to this directive was the distinction between *immigration subie* (migration flows that France must accept, i.e. family reunifications and asylum seekers) and *immigration choisie* (chosen and welcomed migration flows, matching the domestic demand), the latter being a sort of “first class” migration, both in terms of rights and of socio-political acceptance. According to this law, foreign workers whose qualifications met French companies demand were provided with an easier procedure for entry and stay. A set of initiatives has been taken to manage such mobility: the « skills and talent permit », a supply-driven issued for three years renewable, given to foreigners having a project able to contribute to the economic development and the influence of France in his/her country of origin; the *autorisation provisoire de séjour*, conceived in a global win-win perspective, giving foreign students graduated in France a temporary stay permit to look for a first job experience in their study field before coming back to their origin country; a set of bilateral agreements²⁰, mostly signed with former French colonies to manage migratory flows, often based on a list of labour shortages, focusing on the IT or finance sectors.²¹

Both initiatives led the European Union to conceive its own foreign HS mobility scheme to transform the EU in the most competitive and dynamic knowledge-based economy in the world: the EU Blue Card. Active since 2009, the EU Blue Card could be requested by non-EU citizen, holders of an academic degree or

¹⁶ For more details on immigration policies in France and Germany since the '80s see Hilderink H. et al., *Analysis and Forecasting of International Migration by Major Groups (Part III)* in « Population and social conditions » 3/2002/E/n°17, Luxemburg Office for Official Publications of the European Communities (2003) respectively pp. 90-91 and pp. 112-113.

¹⁷ Thomas K. Bauer, Astrid Kunze, *The demand for high-skilled workers and immigration policy*. 2004. p. 12

¹⁸ In *ibid* p.21

¹⁹ Despite the tendency to search for HS workers abroad, some attempts have been made by Germany to reattract emigrated HS workers back home. See ICF Consulting Services, *cit.*, pp. 172-173, 179-180

²⁰ This strategy well underlines how crucial is for France to maintain positive trade and cooperation relationships with former colonies, as well as the weight of historical colonial legacy.

²¹ See Héctor Cebolla Boado et al., *Inventory of programs aimed at attracting High-Skilled migration to the EU*. Proyecto TEMPER, 2016. pp. 44-56

HS professional experiences and with an employment contract in an EU member state. EU Blue Card holders enjoy the same working and salary conditions as nationals, thus preventing social tensions with locals, and are granted free movement in the Schengen Area, the perspective of permanent residence and favourable conditions to family reunifications.²²

Conclusion

Although the success of technology became tangible in the '90s, the phenomenon of foreign HS mobility in the high-tech sector should be dated back to the '70s, when economic and technological transformations changed the international labour market and international migration patterns. These shifts led traditional immigration countries like France and Germany to rethink and create new specific immigration policies in the early 2000s, often tailoring foreign HS mobility as a "first class" one. Finally, research on HS mobility schemes could shed new lights and interpretations on well-known phenomena, such as the 2004 European enlargement, that could have been accelerated by foreign HS workers in the high-tech sector going westwards from Eastern European countries.

²² See https://ec.europa.eu/immigration/blue-card/essential-information_en

Table 7: Work Permissions assured to foreign IT-Specialist by selected Characteristics and Country of Origin, April 2003

Country of Origin	Number of Work Permits		Gender Composition (in %)		Origin (in %)		Qualification (in %)		Firm Size (in %)			Rejected Applications
	Total	in %	Male	Female	Immigrated from a foreign country	Foreign graduate of a German University	University degree	Certificate of annual salary of at least 51,000 Euro	≤100	101 to 500	> 500	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Bulgaria	418	2.96	80.14	19.86	84.45	15.55	90.19	9.81	68.18	10.77	21.05	9
Jugoslavia, Croatia Bosnia-H., Slovenia, Macedonia, Montenegro	719	5.08	82.06	17.94	84.28	15.72	86.79	13.21	56.47	14.33	29.21	15
Rumania	1,017	7.19	84.76	15.24	94.20	5.80	92.43	7.57	60.67	18.19	21.14	20
Hungary	500	3.54	91.40	8.60	92.80	7.20	84.80	15.20	63.60	15.40	21.00	13
Czech and Slovak Republic	961	6.79	94.69	5.31	95.94	4.06	83.04	16.96	67.33	15.09	17.59	10
Russia, Weiss- russland, Ukraine, Baltic States	1,836	12.98	87.85	12.15	90.96	9.04	91.83	8.17	65.85	14.54	19.61	39
India	3,533	24.98	92.33	7.67	94.62	5.38	74.89	25.11	62.24	21.60	16.16	20
Pakistan	201	1.42	98.01	1.99	81.59	18.41	89.55	10.45	63.68	10.45	25.87	7
North Africa (Algeria, Marokko, Tunisia)	424	3.00	92.22	7.78	34.91	65.09	94.10	5.90	52.12	16.98	30.90	18
South America	373	2.64	77.48	22.52	82.04	17.96	77.21	22.79	46.38	17.43	36.19	23
Other countries /regions	4,162	29.43	84.05	15.95	73.38	26.62	82.84	17.16	51.11	16.00	32.89	103
Total	14,144	100.00	87.70	12.30	84.76	15.24	83.50	16.50	58.89	17.03	24.07	277

Source: Bundesanstalt für Arbeit, Nürnberg: Statistik der zugesicherten/abgelehnten Arbeitserlaubnisse nach der IT-ArGV, BA IIIb3; own calculations.

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