

# Chapter 3

## The ‘Virtual Return’ Option of the Highly Educated Immigrants: The Case of Greek PhD Holders



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### 3.1 Introduction

The historical evolution of the debate on mobility and the different policy approaches towards high value individuals to return to their home country are explored. We focus on the Greek case and provide an account of financial and non-financial policy measures developed in recent years. Also, evidence of a new nation-wide survey on a specific sub-population of the global science diaspora is presented. Focusing on Greek PhD holders, we explore their attitudes towards assisting their mother country and the steps that Greece should undertake to lure them back. Specifically, we seek to understand the actual mobility of the Greek highly educated based on new data. Moreover, we seek to contextualise these findings within a pragmatist frame. Making use of ‘diaspora option’/‘virtual return’ strategy, we point to policy directions for harnessing this potential.

Firstly (Sect. 3.2), the importance of the highly skilled personnel is reiterated while exploring the increase in tertiary education globally. The competition between countries to attract the highly educated is revisited. Emphasis is paid to the typology of policies that states develop in order to achieve this. Towards this, the alteration from a physical-based return to a virtual/partial one capitalising upon the globalised trait of these highly educated people is presented. Capitalising on this, herein we make use of transnationalism as an appropriate theoretical concept that can account for the connection between migrants with their communities of origin (Portes, 2001; Vertovec, 2004). While transnationalism considers individuals as carriers of their

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own identity, they belong to several places simultaneously, building up and maintaining networks over borders, which lead to entrepreneurial and academic collaborations (Levitt & Schiller, 2004; Tejada et al., 2013; Vertovec, 2004).

Then, Sect. 3.3 focuses on the Greek case and identifies the root causes of the brain drain. The policy tools developed in recent years to curb the one-dimensional flight as a result of the decade-long economic crisis are described. Greece faced a sovereign debt crisis in the aftermath of the global financial crisis of 2007–08, which reached the populace as a series of painstaking reforms and austerity measures that led to impoverishment, loss of income and property, including the explosion of outward mobility. Concerning methodology, new results of a major nation-wide study are presented (Sect. 3.4). We make our case building on new findings that have been collected through field-based questionnaire answered by Greek PhD scholars that have obtained their doctorate degree from a domestic tertiary education institution or a foreign. Focusing on these new data, we proceed to a descriptive statistical analysis to explore their demographic, geographical and employment mobility as well as their intention to return home.

Based on the literature review and the empirical findings, the chapter concludes (Sect. 3.5) that while a good part of the most educated –more integrated, presumably, than other types of immigrants– would be unwilling to physically return home in the near future, they are open to maintain/initiate economic or research relations with their homeland.

## 3.2 The Brain Drain Phenomenon

In this section, we focus on the economic, social and knowledge importance of the highly educated individuals. Building on this, we further the argument on the grounds of the increase of the tertiary education and the variety of incentives provided by countries to attract this kind of skilled people. We, then, explore the typology of return options. We focus on the theoretical notion of transnational communities and we conclude this section by establishing a dichotomy on the available return options –be that of the ‘diaspora option’ and the ‘virtual return.’

### 3.2.1 *The Economic, Social and Knowledge Importance of Highly Skilled People*

In the last three decades, the importance of knowledge, innovation and human capital on economic development has been recognised (Lundvall & Borras, 1997; Nielsen & Lundvall, 2003). Indeed, their significance on economic development surpasses that of the physical capital (Mathur, 1999; Romp & Haan, 2007). Human capital stands as one resource propelling firms and economies into higher tier of competitiveness (Papademetriou & Sumption, 2013).

The geographic mobility of the Highly Skilled Migrants (hereafter HSM) shapes a key knowledge process that results in the transfer of 'non-codified' knowledge to another country (Williams & Baláz, 2008). While this type of knowledge transfer is multi-formed, a common aspect is one-dimensional mobility from a less developed country to a more developed one. It indicates a zero-sum game that results in draining the originating country of its 'brains.' Hence, 'brain drain,' referring to this one-dimensional mobility (Beine et al., 2001) can severely affect the ability of the originating country to incentivise innovation, resulting in sub-optimal developmental patterns (Hunt & Gauthier-Loiselle, 2010; Nijkamp, 2009). The irony is that those migrating are those most needed to stay since they possess the skills to regenerate an economy (Todaro, 1996, p. 119; Van Gla, 2008). In this process, host countries (developed) are the winners while the home countries (usually less developed) are generally the losers (Williams & Baláz, 2008, pp. 17–46).

### ***3.2.2 Increase in Tertiary Education and Competition Between Countries to Attract HSM***

The growth of 'knowledge-based' industries has put a premium on high-quality education, training, the acquisition and constant honing of skills. Domestic education and workforce training systems try to keep up with employer demands (Papademetriou & Sumption, 2013).

Given this, governments put enormous effort into increasing educational attainment levels. Increase in participation in tertiary education has been significant recently. In OECD (Organisation for Economic Cooperation and Development) countries, the average proportion of 25 to 64-year-olds with tertiary education has been steadily increasing. While in 1998 it was around 21%, in 2008 it rose to 28% and in 2018 it reached 38% (OECD, 2016, 2019).<sup>1</sup> In developed countries, the demand for skilled human capital is greater than the supply while the opposite is usually the case in the less developed ones.

HSM policies are en vogue, leading policymakers worldwide increasingly vie to attract 'the best and brightest.' Developed countries are engaged in a global 'race /war for talents' to attract the HSM (Boeri et al., 2012; Czaika & Parsons, 2017; Kapur & McHale, 2005). Historically, countries of the developed North attract the largest share of HSM (Artuç et al., 2014). Since the 2000s, they have been actively seeking to encourage the admission of highly skilled and business migrants while preventing the entry of low-skilled ones (Castles, 2002; Ozcurumez & Aker, 2016).

As competition for the highly skilled intensifies, European states and companies find themselves in a battle for the 'best and brightest' (Cerna & Czaika, 2016).

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<sup>1</sup> Between 2000 and 2010, OECD countries observed a 70% increase in higher education migrants (Arslan et al., 2014). Also, 64% between 1990 and 2000 (Beine et al., 2001).

Europe 2020 Strategy sets a clear objective to attract highly skilled third-country nationals. The European Union's (EU) Blue Card Directive, adopted in 2009, in addition to recommending ways to improve EU's ability to attract HSM, discusses means to limit the outgoing mobility of Europeans (European Migration Network, 2013). Recently, most EU Member States introduced measures to facilitate the entry of highly skilled third-country nationals resulting in the following inter-European situation: European authorities seek to curb the outward mobility of Europe, while European countries engage in a zero-sum game with each other aiming at attracting highly-prized individuals. Thus, the asymmetrical 'global race for talent' between the Global North and South is mirrored between Northern and Southern European member states.

Despite the concurrent rise in the number of HSM worldwide and the proliferation of policies targeting them, the effectiveness of such policies remains contested (Bhagwati & Hanson, 2009; Czaika & Parsons, 2017) because, as Doornik et al. (2009) argue, attracting HSMs depends upon a range of economic and social factors,<sup>2</sup> what Papademetriou et al. (2008) coined as 'immigration package' (p. 25). These broader-than-purely-financial-parameters have also been identified in Wei et al. (2019).

### ***3.2.3 Return Policies for Highly Skilled – Transnational Communities***

The return of HSMs to their originating countries, after a period of employment abroad, creates multiple benefits. For example, Indian return migrants in the field of Research and Development (R&D) helped promote technology diffusion in India (Choudhury (2015). Ximena et al. (2016) argue returning HSM may lead to considerable economic benefits. According to Dustmann and Kirchkamp (2002) and Dos Santos and Postel-Vinay (2003) return migrants transfer skills and knowledge to their country of origin.

Encouraging return migration as a policy tool for origin countries to ameliorate the negative effects of brain drain and even benefit from global labor mobility, is not without its limitations. Indeed, in only a few cases this repatriation policy succeeded. Cases include newly industrialised countries such as Singapore and the Republic of Korea. Large countries such as China and India, where large-scale return programmes were accompanied by a set of parallel policy initiatives enabling the creation of R&D infrastructures and high economic growth rates.

Governments play a central role in facilitating the flow of human talent through providing higher salaries, better housing, dual passports or long-term residence

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<sup>2</sup>E.g. research labs, professional growth opportunities, working environments, generous social model, lifestyle and environment factors, tolerant and safe society, transparent residency/citizenship rules, recognition of foreign credentials and licensing facilities, opportunities for family members.

cards. Also, overseas scientists are offered leading roles in domestic laboratories and access to cutting-edge equipment. Importantly, the state can play a role in curbing vested interests and biases against the returnees. Such biases are found at the national, institutional or individual level –including less talented individuals/professionals who feel threatened and may present obstacles to the returnees.

South Korea, Taiwan, Hong Kong and India have witnessed a significant return of HSM due to the growth of domestic economies and the creation of new jobs and opportunities (Zweig & Wang, 2013). This virtuous cycle creates demand for skilled people and by becoming wealthier, these states can offer further rewards and incentives making returning home a serious option.

However, this approach has limits. Even in China, return policies did not fully work despite the Chinese government aggressively introducing such policies (Zweig & Wang, 2013). This is attributed to wider socio-political parameters (such as vested interests, extant power structures, non-transparent decision making and a relatively stifling bureaucracy), keeping expatriates at bay. As a result, few of the talented Chinese leave their secure posts abroad and return. Policies to encourage their return failed because they were focused on offering higher wages and lower taxes. Other considerations, such as provision of better research conditions, political and institutional reforms, greater transparency, more democracy, overall improvement of the country's economy, possibility for dual citizenship, etc., were neglected (Gibson & McKenzie, 2010). This is in line with Papademetriou et al. (2008), Doornik et al. (2009); Gibson & McKenzie, 2010; Wei et al. (2019).

### ***3.2.4 Return Policies for Highly Skilled – The 'Diaspora Option' and 'Virtual Return'***

There are two ways (Meyer & Brown, 1999) for a country to benefit from its expatriate graduates: aim for their physical return (return option) or engage this human capital while physically present in the hosting country (diaspora option).

Since then, an increasing interest in initiatives designed to attract a country's professional diaspora (Ximena et al., 2016)<sup>3</sup> recognised merit in both options. Examples, include, the Indian and Chinese governments offering special financial and non-financial incentives to recruit from the expatriated and enable partial return<sup>4</sup> (Wei et al., 2019). In the case of China, multiple initiatives aimed to lure for short

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<sup>3</sup>E.g. the Millennium Science Initiative (Chile), One Thousand Talent Programme (China), Presidential Fund for Retention in Mexico and the Raices programme (Argentina) provided supplementary income and research funds. The UN Tokten programme, attracting high-skilled diaspora members for short durations to provide training, was implemented in 15+ countries over the last 30 years.

<sup>4</sup>In 1992, China encouraged students abroad to short returns. In 2001, it adopted a new policy, encouraging professionals working abroad to contribute to China's economy while staying abroad (Zweig et al., 2008).

periods of stay those unwilling to return for longer periods of stay or even permanently. Examples of such initiatives include the ‘National Specially Invited Expert’ and the ‘Innovative Talents (Short Term) Project.’ Similarly, in 2008 India launched the ‘Outstanding Scientist-Technologists of Indian origin’ and ‘Innovation in Science Pursuit for Inspired Research’ programmes (Inspire, n.d.).

For those countries not having the resources to match the salary and work environments offered by Global North countries, effectively engaging highly skilled members of diaspora in collaborative research and exchange schemes with their country of origin is a good step forward (Wei et al., 2019). Partial return has been adopted by a number of countries seeking to benefit from temporary returns and circular migration schemes (Mendoza & Newland, 2007; Wickramasekara, 2011).

The highly educated workforce abroad can help upgrade the domestic science and knowledge base by establishing bilateral links without the precondition of having to permanently return to the country of origin. This led to Scientific Diasporas being identified as a new development actor (Barré et al., 2003; Karampekios, 2020; Labrianidis et al., 2019; Tejada & Bolay, 2010).

The above approaches share a trait to what Saxenian (2002) argues. Highly educated individuals are willing to work in both the originating and hosting country. The highly skilled engineers in Silicon Valley established companies in their home countries (India and China, respectively) and traveled back and forth (Saxenian, 2006). These were the *new Argonauts*.

These engineers and professionals significantly contribute to their home countries through knowledge, investment and technology transfers (Saxenian, 2005, 2006). They form a transnational technical community providing an alternative and often more flexible mechanism for skill and know-how transfer. By becoming transnational entrepreneurs, they combined important contacts, information and cultural know-how. Closely associated, Yang and Welch (2010) have coined the term ‘knowledge diasporas.’ This notion seeks to explain contemporary global highly-skilled mobility which is ‘sustained by both increases in global migration flows and the rise and increasing ubiquity and density of information and communication technologies’ (p. 594).

The policy problem of whether to establish a permanent versus partial return state-led initiative is based on recognising that the probability of returning home is associated with one’s profile. The elite hesitate to return (Sbalchiero & Tuzzi, 2017). Specifically, the probability of Italian HSM returning was highest (77%) for professionals on fixed-term employment contracts whereas it dropped to 18% for scientists with permanent posts. Full professors were the least likely to return. Potential reasons are older age, being abroad for extended period, good working conditions and probably family obligations, indicating a ‘settled down’ *mentalité*.

This flexibility between the physical and the ‘virtual return’ has created the conditions where returning to the originating country has become a reversible choice (Saxenian, 2005). This is particularly so for those with scarce technical skills, while the increase in IT (Information Technologies) infrastructure adds to this, making it possible to collaborate over great distances. This ‘dual presence’ acts as a ‘bridge’

between home and host countries, promoting ideas, skills and knowledge transfer. For example, Indian and Chinese professionals living in the USA in the 1990s strengthened their countries' scientific and technological capacities through knowledge and technology transfers as well as investment linkages (Saxenian, 2005, 2006; Tejada et al., 2013).

Recently, a new phenomenon has been observed according to which the highly educated while physically present (i.e. staying) in their home country work for firms/employers located in another country. They make use of online outsourcing platforms (e.g. Freelancer, Upwork, Appen, Fiverr and Peopleperhour) that act as intermediaries between employers and employees on an international scale connecting supply and demand of employment. The nature of the relevant labor entailed is usually of high quality and concerns complex projects that are pursued by multinational groups. These online platforms allow the division of the project in a number of smaller sub-projects and are assigned to members of the group (e.g. Graham & Anwar, 2019). This new form of work assignment leads to a new type of 'brain drain,' which we could call 'de facto brain drain.'<sup>5</sup>

Studying the evolution of the academic debate on skilled migration in particular, indicates that the pessimistic and skeptical brain drain option of the 1970s and 1980s underwent a significant change from the 1990s. Since then, a more balanced approach focuses on migrant transnationalism and the creation of networks with home countries. This led to proposals promoting the use of skilled migrants through knowledge transfer and circulation strategies for the benefit of their home and host countries (Meyer, 2001; Tejada et al., 2013). In sum, brain drain is a more complex phenomenon, both in terms of its socio-economic and political preconditions and implications and in terms of the policies needed to deal with it, than once was thought.

From 2000, transnationalism became a popular theoretical framework in migration and development studies praising the transnational ties of migrants with their originating communities (Portes, 2001; Vertovec, 2004). Transnationalism considers individuals as carriers of their own identity. While belonging to several places simultaneously, they build and maintain links over borders (Levitt & Schiller, 2004; Tejada et al., 2013; Vertovec, 2004). This has been enabled by the capability to be digitally employed. The dominance of the digital economy, in our context, has further evolved the concept of 'brain drain.' Thus, countries recognising that capable individuals 'embody' knowledge, skills and networks, and as such are highly attractive, have been formulating policies based on the 'virtual return' approach. This 'virtual return' policy is becoming the dominant theoretical paradigm for engaging the highly educated. Under the title of the 'highly educated,' a range of associated genres can be found. The commuters, while a small percentile, indicate highly adept professionals and career people continuously on the move. The majority of the

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<sup>5</sup> It is a brain drain in the sense that highly skilled workers offer their jobs in foreign countries while they live in their homeland. Thus, they spend and save resources at their location due to their physical presence. Also, they may be more available to use their high knowledge capital for the domestic labor market through synergies, work assignments and research partnerships.

emigrated individuals fall under a different genre –in want of stability and predictability, they choose their location on a range of criteria rather than solely their career trajectory. As such, it seems more realistic for a comprehensive ‘virtual return’ approach to target the second population group. Herein, we analyse the brain drain phenomenon for Greece. Arguing in favor of a diaspora/‘virtual return’ policy.

### 3.3 Brain Drain from Greece

In this section, we explore the actual brain drain patterns in Greece. Specifically, we provide secondary evidence of this one-dimensional mobility. We, then, explore the availability of implemented policy options to reverse this type of pattern.

#### 3.3.1 *Setting the Tone*

During the decade-long sovereign debt crisis, as a result of the global financial crisis of 2007–08, Greece suffered the longest recession of any advanced mixed economy to date. This led to a series of painstaking reforms and austerity measures that led to impoverishment, loss of income and property, including hundreds of thousands of well-educated Greeks having left the country. Indeed, the combined effects of recession, extreme austerity and a concomitant generalised mistrust of institutions and the political system led to a resurgence of large-scale emigration from Greece of skilled as well as less skilled people. The type of skilled emigration received extensive media coverage (often to the expense of the less skilled type who also moved abroad in large numbers) – an emigration which was presented as a one-way option for them (Chap. 2 in Pratsinakis, [this volume](#)).

The brain-drain phenomenon is a recurring theme in Greece, yet since the 90s it has grown in momentum. The latest instance of this took place within the context of the decade-long 2009 economic crisis. More than 250,000 professionals were abroad in 2017, with some 200,000 leaving the country after 2010 (Labrianidis, 2011, 2014; Labrianidis et al., 2019; Labrianidis & Pratsinakis, 2016; Labrianidis & Vogiatzis, 2013). Outward flight of these individuals who are of high caliber<sup>6</sup> significantly hinders the developmental potential of the Greek economy, in addition to placing significant stress on the societal, cultural and national fabric.

It would be beneficial for the individuals and the country to develop policies breaking the vicious cycle where the highly educated depart because a sustainable demand for their services is lacking because the country is less developed - an economic situation continuously prolonged due to their emigration. Thus, it goes

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<sup>6</sup>E.g. Yuret (2018) showed Greek scholars populate a disproportionately high share in leading US academic institutions.



without saying that excluding those individuals from the return option undermines the very transition to a knowledge-based economy. Combined with the severe demographic problem, formulating a policy initiative for these individuals should be based on the realisation that the expatriated communities are essential for vital socio-cultural changes. Of course, not all those who have left constitute a homogeneous community or group, nor are they all exceptional scientists or enjoy enviable professional, financial and social status in the countries where they work; and, undoubtedly, it is not the case that all the 'best minds' have gone and the worst have remained!

While the brain-drain problem was certainly there before the economic crisis, it worsened as a result of its intensity. The discrepancy between supply and demand of skilled human resources is not due to the excess supply of graduates,<sup>7</sup> as claimed in the national press, but to the limited demand of such employability characteristics by Greek companies. Until recently, Greek companies remained hesitant in committing resources towards the production of complex products or knowledge intensive services that required the employment of highly skilled human resources (Labrianidis, 2011, 2014). While this trend has started to change,<sup>8</sup> this discrepancy has been the main cause for the high levels of unemployment, underemployment and employment in jobs not making the full use of an employee's qualifications ('brain waste'). In addition to economic reasons, the lack of political and institutional reforms, transparency, etc. contribute to brain-drain (Gibson & McKenzie, 2010). Thus, policies for addressing or putting a stop to this one-dimensional mobility require a systemic approach touching on a number of societal, institutional and political parameters. Policy makers should eliminate the very reasons that led to it in the first place.

### 3.3.2 *Policies to Reverse the Brain Drain*

Facing the (various) difficulties to incentivise an economic rebound, prompted the government, during the 2015–2019 period, to examine ways to slow down brain drain. Policy tools in this direction were developed on at least three levels:

Firstly, the strategy titled 'Greece: A Growth Strategy for the Future' officially launched in 2018, as well as other preceding legislation (such as the Development Law and the reorientation of the National Strategic Reference Framework), set the overarching context in which the shift towards the 'knowledge economy' was named as the central developmental policy in the twenty-first century. To achieve that, skilled human resources were named as the

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<sup>7</sup> During 2006–2016, 25.4% of people aged 25–64 in Greece had a higher education degree, while the EU28 average was 26.8%. In 2017, the respective shares were 41% and 38.2%.

<sup>8</sup> Indicatively, from 0.24% in 2011, firm R&D spending as % of GDP, has risen to 0.69 in 2020. Also, the share of Greek innovative enterprises has been steadily increasing - from 51.0% in 2012–2014 to 60.3% in 2016–2018). On R&D, see TSC00001 data code of Eurostat (n.d.) and data from EKT (2021, p. 9). On innovation, see Community Innovation Survey 2016–2018 (EKT, 2020).

prime enabler. Further developing the domestic skilled human resources as well as attracting the expatriated skilled human resources were central to this end.

Secondly, a set of financial incentives targeting the young researchers were developed providing direct financial assistance through scholarships aimed (also) at curbing brain drain. These scholarships stand as prime incentives supporting the domestic academic and research excellence for the 2017–2020 period by way of enhancing academic performance and employment as well as nurturing R&D-led entrepreneurship and innovation (Sachini et al., 2020a, b).

Finally, the ‘Knowledge and Partnership Bridges’<sup>9</sup> initiative. It was conceived with the aim of ‘connecting’ Greek experts and professionals, regardless of the country of current location, and create an e-community. Capitalising on the ‘diaspora option,’ the initiative is indifferent to whether the individuals wish to continue work abroad or are interested in re-settling in Greece. Instead, it aims to incentivise academic and entrepreneurial linkages and connections that may lead to the knowledge transfer and professional experience within the country (Labrianidis et al., 2019). With an expatriated community amounting to approximately eight million, establishing ‘bridges’ will allow Greeks abroad to reconnect with Greece. Given that science and technology is a collaborative arrangement, networks are central avenues for knowledge acquisition, especially since many Greek scientists abroad hold important academic and business positions.

This triple set of strategies and policies was devised in view of an outward flight of the skilled human capital that had become a kind of ‘trend,’ an obvious course of action, so to speak. Thus, while many undeniably left because of the discrepancy in labor supply and demand, others followed convinced by a dual-pillared conventional wisdom: Overall opportunities were elsewhere whereas unemployment, nepotism etc. ruled in Greece. While instances of truth can be found herein, these stereotypical views exaggerated existing dysfunctions in Greece whilst promising work-paradises abroad.

### 3.4 A Study of Geographic Mobility of Greek PhD Holders

In such matters, the issue of official and robust data indicating the mobility of the highly educated is of primary importance. Such data allows making evidence-based claims. Given that there are no official records of Greek professionals abroad, it is impossible to design a sample reflecting the characteristics of the total population. This lack of official data constitutes a significant caveat to the study of brain drain. In the remainder of this chapter, we will present the provisional data of a recent Greek-wide survey. This dataset is being presented for the first time.

In this study we focus solely on PhD scholars. Following the International Standard Classification of Education (ISCED) standardisation (ISCED-8), it concerns those individuals who have been awarded the highest educational degree (i.e.

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<sup>9</sup>See *yefires gnosis ke sinergasias* (n.d.)

a doctorate degree). To be exact, the focus has been on the PhD scholars that have obtained their doctorate from a Greek tertiary institution or one such institution abroad. This was made possible by making use of a completely new database, that of the National Archive of PhD Theses (NAPhD). NAPhD is the national registry collecting PhD theses from all Higher Education Institutions in Greece as well as those PhD degrees awarded to Greeks by foreign universities and certified by the Hellenic National Academic Recognition and Information Centre (Hellenic NARIC). It spans a period of more than 30 years (1985–2020). In addition, an open-ended announcement made through social media called for the registration of Greek PhD holders that had acquired their PhD from non-Greek institutions and have not certified it through Hellenic NARIC.

Between May and July 2020, an electronic survey was conducted by the Greek EKT [*Ethniko Kentro Tekmiriosis* (National Documentation Centre)] which is the organisation responsible, by law, for the collection, development and maintenance of NAPhD and the Regional Development and Planning Research Unit of the University of Macedonia. The survey was conducted on individuals that obtained their PhD during the 1985–2018 period and were included in NAPhD. The number of the doctorates contained in NAPhD amounted to 39,207. After application of multiple data cleansing techniques, an electronic questionnaire was sent to 22,349 individuals. The survey contained a range of multi-variate questions ranging from demographics, geographical and employment mobility to social and career satisfaction. In addition, it was appropriately customised to cater for different employment statuses of the PhD holders (employed, unemployed, retired etc.).

A combination of established taxonomic schemas, such as the ISCED fields of education, the occupation classes of ISCED, the employment categories of the Hellenic Statistical Authority, as well as open questions examining age range, sex, professional degrees and certificates, quality of life and the quality of work conditions were adopted. This was the case in order to cater for the complex geographical, educational and employment realities of such a large population group. The survey was initiated on the 25/05/2020 and concluded by 24/9/2020. It was successfully submitted by 10,295 individuals (46%). The remainder of this analysis will offer a first account of the submitted answers.<sup>10</sup>

According to the following table (Table 3.1), the respondents' gender is broken down between males (54.5%) and females (45.3%), while the age distribution is as follows: the majority are between 40 and 49 years old (43.6%) while one third of the respondents lie within the 30–39 years range (31.5%). In terms of tertiary education degrees and the respective countries of origin, concerning bachelor degrees, 92.0% obtained their undergraduate degrees in Greece, followed by studies in the UK, Italy and Romania. Concerning the master's degree, for 77.6% it was obtained from Greek institutions, followed by UK institutions (13.7%), French institutions and US institutions (2.2%, respectively). In terms of PhD's, these were almost comprehensively attained from a Greek tertiary institution (97.2%), followed by the UK (1.3%).

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<sup>10</sup>The results of the survey are presented in Labrianidis et al. (2022a, b).

**Table 3.1** Overall demographic characteristics of PhD Holders (%)

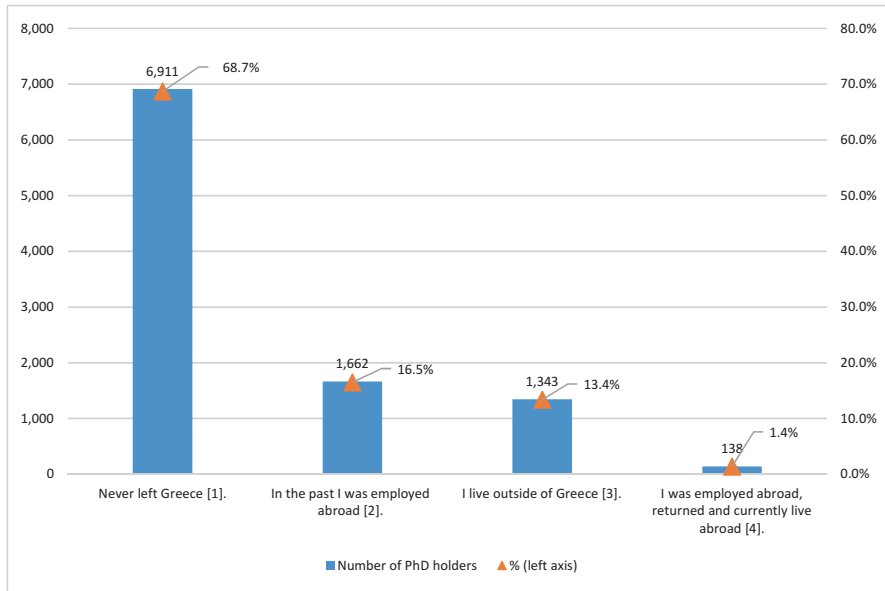
Sex	Male	Female	do not wish to answer				
	54.5	45.3	0.2				
Age groups	>29	30–39	40–49	50–59	60–69	>70	
	0.3	31.5	43.6	19.2	5.0	0.4	
Top 4 countries in which tertiary education degrees were obtained	<i>Bachelor</i>	Greece	UK	Italy	Romania	Other countries	( <sup>a</sup> )
		92	2	1.5	0.8	3.7	10,295
	<i>Masters</i>	Greece	UK	France	USA	Other countries	
		77.6	13.7	2.2	2.2	4.3	7663
	<i>PhD</i>	Greece	UK	France	USA	Other countries	
		97.2	1.3	0.4	0.3	0.8	10,295
Top 4 countries in which PhD holders are currently living in	#1	#2	#3	#4			
	Greece	UK	USA	Cyprus			
	84.1	3.8	2.2	1.6			
Are you currently employed/working?	Affirmative	Negative	Unemployed	Pensioner	Other		
	95.5	2.7	1	0.6	0.2		
In which sector?	Public sector	Private sector	Other				
	62.1	29.8	8.0				

<sup>a</sup>absolute number of total population  
Labrianidis et al. (2022a)

Seeking to identify the mobility pattern of the doctorate holders, four major patterns emerged (see Fig. 3.1):

- Individuals who have never worked outside Greece (68.7%) [1]
- Individuals who have worked in the past outside Greece (16.5%) [2]
- Individuals who live outside Greece (13.4%) [3]
- Individuals who were active abroad, returned to Greece and have left again (1.4%) [4]

These four [1–4] mobility categories account for the 97.7% of the total number of responses (10,054 out of 10,295). The remainder 2.3% concerns individuals that submitted foreign citizenship in the relevant question and as a result were not taken into consideration in the analysis. Importantly, categories [2] to [4] concern individuals who all have worked abroad. Analysis of the data indicates that 31.3% of the individuals have been employed either in the past and/or currently in another country and 14.8% are still employed outside of Greece.



**Fig. 3.1** Number and % of PhD Holders according to their mobility pattern. (Labrianidis et al., 2022a)

Henceforth, the focus will be on the specific population group that identified themselves as ‘individuals who currently live’ [3], i.e.  $N = 1343$  individuals and ‘individuals who were active abroad, returned to Greece and have left again,’ i.e.  $N = 138$  [4]. Thus, herein total  $N = 1343 + 138 = 1481$ . Given that the overwhelming majority of these individuals indicated that at the time of the survey they were employed, they largely fit the description of the HSM bibliography as those individuals whose originating countries develop policies to lure back and/or establish a partial presence there. As such, it would be informative to present their opinions in terms of the public incentives that should be put in place to consider this option. Tables 3.2 and 3.3 present the combined results of the two sub-populations [pattern 3 and pattern 4].

In terms of demographic and professional characteristics (see Table 3.2), most were males (62.5%). Their age profile mostly belonged to the 30–39 age group (52.3%) and the 40–49 group (40.4%). Only a relatively small percentage received their bachelor’s (8%) and doctoral degrees (2.8%) from Greece, this percentage is very high for those who received their master’s degree (22.4%). Being a globalised workforce, these individuals have worked in multiple foreign countries. Among these countries, most have worked in the UK (25.7%), the US (15.8%), Germany (11.0%) and France (6.6%). Assessing their employment position, the great majority of them (95.5%) were employed, 65.1% were employed in the public sector, of whom 65.8% claimed that their position was of high status. This was followed by 21.6% of the individuals thinking of the positions as of medium

**Table 3.2** Demographic and professional characteristics of individuals of patterns 3 & 4 (%)

	Male	Female	do not wish to answer			
Sex	62.5	37	0.5			
Age groups	<29	30–39	40–49	50–59	60–69	>70
	0.6	52.3	40.4	6.1	0.6	0.1
Top 4 countries in which they have worked (first country of choice)	UK	USA	Germany	France	(*)	
	25.7	15.8	11.0	6.6	1481	
Personal assessment of current employment position	Not of high status	Of medium status	Of high status			
	12.6	21.6	65.8			
Professional occupation	Chief executives and senior officials	Professionals	Academic and teaching personnel in tertiary education	Other		
	9.5	26.7	42.8	21.0		
Average salary (€)	Up to 1000	1001–2000	2001–3000	3001–4500	4501+	
	1.8	5.7	16.6	28.4	47.5	

\*absolute number of total population  
Labrianidis et al. (2022a)

status. Only 12.6% thought of themselves as working in a low status position. This indicates that those individuals perceived themselves as having achieved a high professional status. Taken together with the finding that 47.5% of those individuals had an average monthly salary of, over 4500 euros and 28.4% between 3000 and 4500 euros, the above argument is further enhanced. For comparison, the average monthly salary of a fully employed individual in Greece amounts to 1202 euros (EFKA, 2020, p. 3).

In terms of professional employment, most individuals indicate a high-profile employment position either as university personnel or as professionals and managers. Approximately half of those individuals (42.8%) work as academic personnel in tertiary education institutions. This is followed by HSM being employed as professionals (26.7%), such as foreign language teachers, administration analysts, and data and network engineers. Lastly, 9.5% of those individuals indicate that they are employed as chief executives and senior officials. The large majority enjoy a high professional status. In hindsight, one can only try to appreciate the very significant potential these individuals could provide their home country, if not for their flight.

In order to understand their perception of the incentives that should be developed for those individuals to consider the physical/partial return option, one should examine links and connections already developed (Table 3.3). Being highly educated and employed in high-profile positions, they were asked whether



they would be willing to provide mentoring and/or fundraising services to the domestic science and entrepreneurial base. More than half (56.0%) would either be willing to do so or are already providing such services from abroad, thus enabling an invaluable knowledge-transfer mechanism. On a more personal basis, the doctorate holders were asked for the conditions that should be fulfilled before they would consider their return. First among them is the issue of finding employment compatible with their qualifications (69.9%). Taken together with the conceptually affiliated question of finding a financially satisfactory employment (34.7%), it indicates that almost all of the respondents put a premium on landing a well-rounded employment position as a key factor for returning. Indeed, 25.3% selected both answers. A second cluster of responses revolved around family and the raising of children. Indeed, 42.6% of the respondents indicated family reasons as a condition for their return, followed by 14.6% responding that they would be returning so that they could raise their children. 5% of them selected both answers. A third option for returning was nostalgia. Missing home was a parameter pointed out by 43.4% of the respondents.

How can the state enable their return? On this, it should be mentioned beforehand, that this group maintained very strong links to their homeland in as much as they communicated with their families back home on a daily basis (48.9%) or quite often (23.2%). Additionally, they visited Greece once or twice per year (61.9%) or even more than three times per year (33.1%). Also, some (8.0%) have invested in Greece in the form of acquiring houses and estates. It is only 8.9% that seemed unwilling even to consider returning. As such, according to the respondents, the range of the relevant actions that could be taken by the authorities is as follows: first, the state should open up new positions in tertiary education institutions (60.5%) – most of those currently employed in tertiary education institutions abroad sought similar career opportunities in their originating country. This was followed by an answer on the need for the broader socio-economic conditions (59.5%), pointing to the much-needed improvements in public administration, rule of law, corruption cases, etc. A third factor was the need for a better collaboration/communication on behalf of the state with those professionals working abroad. That is, to increase opportunities for collaboration with Greek tertiary institutions and/or the private sector (38.6%). In close connection with the first option (see above), it indicated the untapped highly educated personnel that the lifting of the respective burden would help capitalise. Also, 30.1% selected the need for a transparent and direct communication on the opportunities available to this kind of diaspora, while 23.2% the legislative arrangements allowing them to work part-time while retaining their employment abroad. Finally, only 10.1% thought that financial incentives for repatriation were return enablers.

These findings are consistent with Doomernik et al. (2009) and Wei et al. (2019). Financial incentives, beyond higher wages, appeared to have no major impact on persuading HSMs to repatriate. Factors such as a better communication by the state could facilitate strong links with the Greek economy while they still continue to work abroad.



### 3.5 Concluding Remarks

Making use of transnationalism as the theoretical concept upon which to account for the connection between migrants with their communities of origin (Portes, 2001; Vertovec, 2004), in this chapter we built upon the premise that highly educated human capital is crucial for the development of an economy. Developed countries offer incentives so as to attract highly skilled individuals from other countries. The ensuing one-dimensional mobility represents a loss of growth potential for the originating country. Recently, originating countries have been initiating policies to contain or curb this phenomenon. The nature and orientation of these policies is relative to domestic priorities. Overall, return policies provide various incentives and can be categorised between those placing emphasis on the 'physical' and the partial/ 'virtual return'/ 'diaspora option.' Recognising that such individuals are highly prized as well as understanding that being part of a network is extremely important, countries have been formulating policies based on/and the 'virtual return' approach.

Greece is a country suffering from this one-dimensional mobility. At large numbers, this mobility has been undermining the country's potential. To curb this, there is a need for policies to face the very reasons that led the country's highly educated human capital to leave in the first place, i.e. primarily the discrepancy between supply and demand of professionals. This relates to the need to change the pattern of economic development of the country, something that has begun to be put into effect in recent years. Policies aimed at directly keeping young professionals in the country have been implemented. As already shown, most of this diaspora was fond of their home country and, as such, was willing to offer their services – even in a digital and virtual manner. A range of policies on enhancing academic and research excellence and on supporting employment, entrepreneurship and innovation have been initialised. However, one has to be realistic and understand that most of those abroad are not going to return in the immediate future. The advantages of the hosting countries may potentially be too great to miss and Greece, being a small economy with structural problems, may not be able to provide what is asked by all of them. This pragmatism is important in formulating policies aspiring to make the most of expatriates while they remain abroad ('virtual return' option). 'Knowledge and Partnership Bridges' seeks to create 'bridges' to allow Greeks living and working abroad to reconnect with the country through co-operation with Greek professionals whether they are in business or in academia.

Herein, data from a recent, novel, nation-wide survey on Greek PhD holders was presented. Methodologically, this chapter was built on a new data set that was collected through a questionnaire-based survey sent to Greek PhD scholars. Having obtained their doctorate degree from a domestic tertiary education institution or a foreign, we proceeded to a first descriptive statistical analysis to explore their demographics, geographical and employment mobility as well as their intention to return home. The evidence points to a situation where those highly educated individuals that were situated abroad wished to sustain their own identity, belonged to several places simultaneously while they had managed to build and maintain academic,

entrepreneurial, or other such networks over borders. This is in accordance to the theoretical premises of transnationalism (Levitt & Schiller, 2004; Tejada et al., 2013; Vertovec, 2004) and could lead to academic and entrepreneurial collaborations.

According to the findings, most Greek doctorate holders were based in Greece and were employed in the public sector. Importantly, 31.3% of all Greek doctorate holders had worked and/or were, at the time of the survey, employed abroad. Of those currently based (14.8%) abroad, most would consider themselves as being employed in high status positions (e.g. working in academia, as professionals and senior officials). These findings could steer policy proposals. Understanding their mobility patterns and their points of view in relation to the most appropriate list of incentives are two such tokens that could be fed into the policy making loop. Regarding policy considerations it is important to note that while the respondents left in search of better career options, they maintained strong bonds with Greece, their family in particular, and were willing to support Greece through mentoring domestic individuals. To return they would have to find an employment compatible with their qualifications. This was often translated into new positions in tertiary education institutions. Closely affiliated is the finding that financial incentives alone were not sufficient return enablers. Of importance to HSM were wider socio-economic considerations. They pointed out the need for arrangements that would facilitate their engagement with the Greek economy while they still resided abroad. Significantly, the above findings appear compatible with the findings that have been identified in the existing bibliography, which fall in the lines of the ‘diaspora option’/‘virtual return’ strategy. In our case, also, the ‘diaspora option’/ ‘virtual return’ stood as the most combinatorial of strategies. Thus, one might conclude that countries losing highly skilled personnel, depending on the socio-economic and political juncture they are at, must develop different policy mixes, i.e. policies to persuade highly skilled nationals not to leave, to return or to follow a ‘virtual return’ option.

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