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The Primary Drivers and Consequences of Brain Drain in Italy, and the Effectiveness of Existing Policies in Addressing It

Prof. Lorenzo Carbonari

SUPERVISOR

Aurora Manfredini ID: 105692

CANDIDATE

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Abstract

The thesis is a study of the phenomenon of Italian brain drain. The aim is to examine its causes and consequences while evaluating the effectiveness of current policies. The research is based on economic analysis and public policy evaluation, drawing on data, reports, and international policy comparisons. The primary findings show that the emigration of Italian talent is caused by internal push factors such as underemployment, low wages, lack of investment in research and development, and institutional weaknesses, notably the absence of meritocracy. These are compounded by pull factors like offering better career prospects and more transparent professional systems abroad. Unlike temporary "brain circulation," the emigration of highly skilled Italians tends to be permanent, with statistics showing a net loss of young graduates. The consequences are fiscal losses for the government, sectoral disruptions such as STEM, healthcare, and higher education, a reduced capacity for innovation, growing regional disparities, and long-term economic stagnation accompanied by civic disengagement. However, the thesis identifies potential structural policy reform opportunities, like managing global talent mobility, human capital development, and monetary policymaking.

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Introduction

Italy has a long emigration history, with past waves primarily driven by poverty and necessity, largely involving peasant farmers and manual labourers packing themselves onto steamships bound for New York City (Scotto 2014). Today, the country faces a significantly different, yet equally critical, challenge: a modern exodus of its "best and brightest," highly skilled professionals in science, technology, engineering, mathematics (STEM), healthcare, and academia. This outflow is not primarily a response to absolute poverty but a consequence of a decade of economic stagnation, a frozen labour market, and structural issues such as patronage and nepotism (Scotto 2014).

This phenomenon is called brain drain, referring to the large-scale emigration of highly skilled individuals from one country to another, leading to a significant loss of human capital for the source country (Docquier & Rapoport 2012). Unlike general migration, which encompasses movement for various reasons, including economic opportunities or social factors, brain drain focuses explicitly on the departure of professionals with specialised skills (Czaika & Parsons 2017). Brain drain can manifest in two forms: permanent emigration, where individuals settle abroad indefinitely, or temporary migration, where they return after gaining experience or education overseas, effectively a brain circulation. However, much of the existing literature considers this mobility temporary (OECD 2018).

However, the Italian experience diverges significantly from this prevailing view, as Italian migration of high-skilled individuals appears predominantly permanent, with a very low propensity for return. Over the decade spanning 2013 to 2022, Italy recorded a consistently negative net balance between the emigration and return of young graduates aged 25-34, resulting in a cumulative loss exceeding 87,000 highly educated individuals. In 2022 alone, approximately 18,000 young graduates left the country, while only about 6,000 returned. The trend of young Italians moving their residency abroad has consistently increased over the last 10 years, with returns being significantly fewer. The high rate of emigration, combined with a low return propensity, means Italy is experiencing a sustained depletion of its skilled workforce (ISTAT 2024).

Due to structural inefficiencies and limited investment, the brain drain disproportionately affects critical sectors in retaining talent, including STEM disciplines, healthcare, and academia. Losing skilled or unskilled labour is often seen as more harmful to long-term economic development and institutional strength than the emigration of less-educated workers. Italy's demographic trends, such as low birth rates and an ageing population, intensify the strain on the labour market (Monteleone & Torrisi 2010).

Brain drain is a global phenomenon affecting both developing and developed nations. However, Italy faces a particular challenge because, despite significant public investment in training young professionals through its education system, it struggles to retain them. This difficulty is linked to economic stagnation, limited career progression opportunities, and underfunded sectors (*EDJNet* 2023).

This thesis investigates the structural drivers and economic consequences of brain drain in Italy and the effectiveness of the country's policy responses. Italy is widely recognised as a country facing significant migration challenges. However, while much public and policy discourse has historically concentrated on issues like low-skilled labour, asylum seekers, or irregular migration, this thesis focuses on a critical yet often overlooked dimension of Italy's contemporary migration challenge: the systemic loss of highly skilled professionals. A thorough understanding of the Italian brain drain is essential to inform domestic economic policymaking and participate in international discussions on global talent mobility and human capital development (Czaika & Parsons 2017). The research question guiding this study is: What are the primary drivers and economic consequences of brain drain in Italy, and how effective are existing policies in addressing this issue?

The thesis is structured to address this research question by pursuing three key objectives: causation, impact, and policy response, each corresponding to a dedicated chapter. The first chapter analyses the causes of brain drain, using the push-pull model to identify factors driving talents, such as low wages, limited research funding, and bureaucratic career obstacles, as well as pull factors, including higher salaries abroad and better-equipped institutions. The second chapter assesses the economic consequences of brain drain by examining its impact on productivity, innovation, and

fiscal sustainability through indicators such as productivity losses, declines in patent filings, and the economic costs of investing in education without retaining talent. The third chapter assesses the instruments Italy uses, from fiscal incentives to regional development programs, and evaluates their effectiveness and structural shortcomings in reversing or mitigating the brain drain. These chapters build a comprehensive analysis of Italy's brain drain challenge, with a conclusion synthesising the thesis findings.

The thesis writing methodology uses a mixed-methods approach, using economic analysis and policy evaluation. The quantitative component examines economic indicators, labour market statistics, migration data, and government spending. Simultaneously, the qualitative dimension includes case studies of skilled Italian emigrants, policy reports, and expert interviews to understand individual motivations and structural challenges. Examining successful brain drain mitigation strategies that other countries have adopted will provide a comparative policy review. Primary sources, such as government reports, scholarly journals, and data from international organisations like the Organisation for Economic Co-operation and Development (OECD), Eurostat, and the Italian National Institute of Statistics (ISTAT), provide evidence for arguments and analysis, making up a large portion of the thesis. Care cross-referencing was done to minimise biases and gaps and guarantee data validity and reliability. It is imperative to acknowledge the difficulties in estimating long-term productivity losses and the limitations when reporting research on the availability of migration statistics. However, by integrating different perspectives and data sources, this thesis offers a comprehensive and policy-relevant analysis of Italy's brain drain challenge.

Chapter 1: Why Italian Talent Migrates

This chapter investigates the complex drivers behind the emigration of highly skilled individuals from Italy, using the widely accepted *push-pull* model, a core framework in international migration studies. According to this model, migration results from adverse conditions in the country of origin that *push* individuals to leave, and attractive opportunities abroad that *pull* them in (Stark & Bloom 1985).

Section 1.1 focuses on Italy's push factors, offering a microeconomic analysis of structural inefficiencies in the domestic labour market and institutional constraints that reduce the expected utility of remaining. It explores challenges, including underemployment, skill mismatch, regulatory and bureaucratic burdens, underinvestment in research, systemic weaknesses in academia, low productivity growth, regional disparities, and broader socio-cultural and governance issues.

Section 1.2 shifts to the pull factors, the favourable conditions in destination countries that attract Italian talent. These include broader and better-matched employment opportunities, environments that support skill development and research, transparent and meritocratic career systems, higher wages, improved living standards, and the institutional openness of international labour markets, especially within the European Union.

Chapter 1 establishes the foundation for assessing the economic consequences of brain drain and the effectiveness of policies to mitigate it, topics addressed in the subsequent chapters.

1.1 Push Factors Driving Italian Brain Drain

1.1.1 Underemployment and Underpayment

The inability of the domestic labour market to absorb and adequately remunerate highly skilled workers is a major factor in the emigration of Italian talent, resulting in a mismatch of skills.

Despite a growing supply of graduates, Italy's labour market exhibits a low capacity for human capital absorption, leading to significant difficulties for individuals seeking employment matching their qualifications. Italy consistently ranks among the European countries with the highest rates of "intellectual unemployment," a phenomenon where graduates either remain unemployed or are *underemployed* in positions unrelated to their fields of study (Caroleo & Pastore 2015). According to ISTAT, the number of youth unemployed up to March 2025 amounts to around 20%, and Figure 1 provides an unemployment trend from 2013 to 2024 (ISTAT 2025). Efficient labour markets allocate workers to positions that fully utilise their skills and

maximise productivity. Underemployment represents a critical market failure, indicating a misallocation of human capital. It results in welfare loss, as public investment in education yields insufficient economic returns, alongside negative externalities like reduced job satisfaction and lower lifetime earnings (Caroleo & Pastore 2015). Theoretical explanations for this mismatch include imperfect information, signalling failures, where employers struggle to assess graduate capabilities, and labour market rigidities hindering adjustment (Spence 1973). Moreover, Italian degrees, despite being formally recognised, lose signalling power in a market where firm-level human resource practices fail to reward merit and skills adequately. It exacerbates allocative inefficiencies across the economy when graduates from top universities do not find themselves in positions that neither utilise their training nor offer prospects for advancement (Spence 1973).

The graph below illustrates the trend of the youth unemployment rate in Italy from 2004 to 2024. It is characterised by sharp increases during economic crises, a slow recovery, and a recent decline, though remaining high by European standards (Statista 2024).

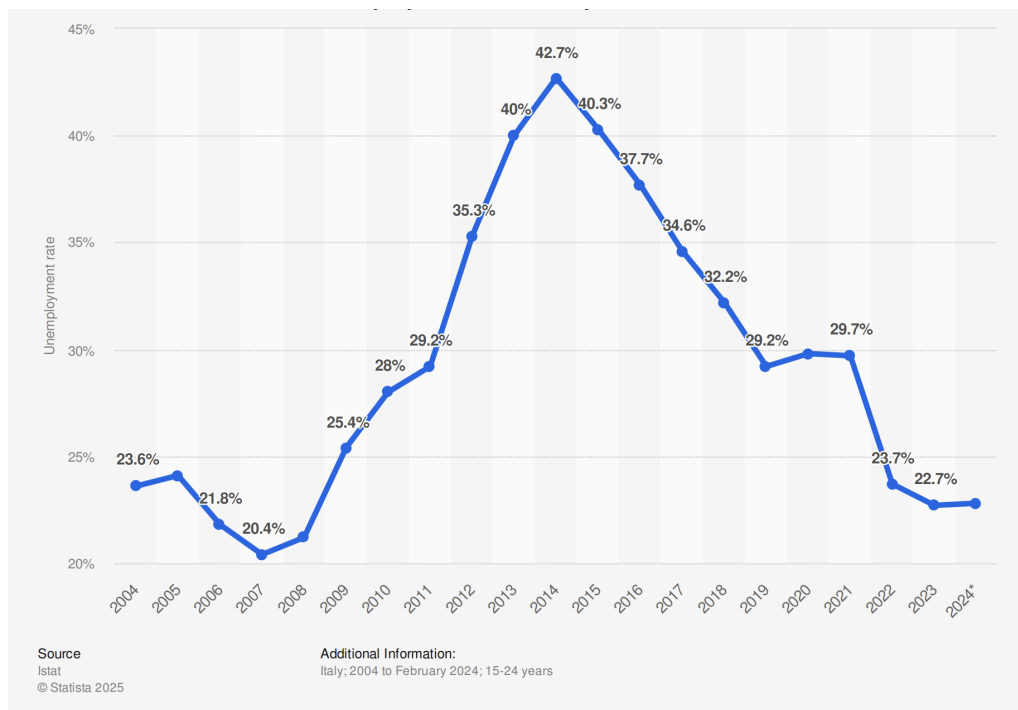


Figure 1: Youth unemployment rate in Italy from 2004 to 2024

Source: Statista 2024

Research analysing Italian labour market dynamics between 2014 and 2017 found "true state dependence" for low-pay employment, meaning past low-paid jobs significantly increase the likelihood of remaining in that state. The authors explain that past unemployment raises the probability of subsequently entering low-paid work, creating a persistent "low-pay tunnel," described as "two different traps", making upward mobility challenging. This evidence supports the notion of structural inefficiencies contributing to underemployment. While the study did not focus directly on brain drain, it shows labour market mechanisms that can persistently trap workers in low-pay situations, potentially impacting those with higher qualifications who might accept underpaid roles due to limited alternatives, thereby contributing to underemployment (Bavaro et al. 2024).

The structural characteristics of the Italian labour market significantly shape this underemployment issue. The market is dominated by small and medium-sized enterprises (SMEs) and rigid employment protection legislation (EPL). According to ISTAT, SMEs constitute over 99% of firms in Italy, with 95% being micro-enterprises employing fewer than 10 people, a structure relatively rare compared to other advanced economies such as Germany, France, or the United States (ISTAT 2023). Lower demand for highly qualified personnel and a preference for generalist profiles happen when there is a prevalence of small firms, as it limits their capacity for investment in research, innovation, and human capital development (Berton et al. 2011). Consequently, employment practices often involve temporary or precarious contracts, offering limited prospects for stable, high-quality jobs. Compounding these issues are Italy's rigid labour laws, particularly its EPL, which contributes to labour market dualism, where workers with permanent contracts ("insiders") coexist alongside those in temporary, precarious employment ("outsiders") (Leonardi & Pica 2006). Firms, facing high dismissal costs associated with permanent contracts, are often reluctant to hire full-time employees, further restricting opportunities for young and highly qualified individuals. This structural segmentation discourages firms from investing in the training of temporary workers and career development, accentuates the skills imbalance and encourages emigration among ambitious graduates with limited long-term prospects (Caroleo & Pastore 2015). The predominance of SMEs and the rigidities created by

EPL combine to form systemic barriers that lead to a large skills-work gap, diminish the professional aspirations of graduates, and undermine Italy's overall economic productivity by not fully leveraging its educated workforce (Berton et al. 2011). OECD reports link this enterprise structure to Italy's low productivity growth and weak ability to absorb skilled labour (OECD 2023).

Beyond underemployment, the phenomenon of *underpayment* further intensifies the incentive for emigration. Despite the high educational attainment of many young Italians, wage levels often do not adequately compensate for their skills and qualifications. Recent data show that the average gross annual salary for Italian graduates aged 25–34 is approximately €27,000, compared to €39,000 in Germany and €42,000 in the Netherlands (European Commission 2023). In many sectors, particularly academia, healthcare, and STEM, wage structures remain stagnant and non-competitive by international standards. Underpayment reflects both supply-side and demand-side distortions. On the supply side, labour market monopsony, where a few employers exercise disproportionate wage-setting power, limits salary growth opportunities for skilled workers (Manning 2003). On the demand side, weak productivity growth and limited firm size further constrain the employers' ability to offer competitive remuneration (Manning 2003). High-skilled individuals often perform a comparative wage analysis, weighing the expected returns of working abroad against their reservation wage, the minimum acceptable salary required to justify remaining in Italy. When foreign opportunities offer higher expected earnings, better career advancement, and superior working conditions, emigration becomes the rational choice (Constant & D'Agosto 2010). The low returns on education further exacerbate the incentive to emigrate. Given the minimal public and private investment in human capital, the opportunity cost of remaining in Italy, measured in terms of foregone earnings, career advancement, and personal development, is perceived as increasingly high (Bavaro et al. 2024). The labour market selection in this context is adverse selection. The selection of the most talented individuals for immigration results in a workforce that is, on average, less productive and innovative (Spence 1973).

In addition, the high tax burden on labour income worsens the problem of underpaid workers. In 2022, Italy's total tax on labour was 45.9%, compared to 40% of

the EU average (OECD 2023). This significantly reduces net earnings at source, further reducing the financial attractiveness of domestic work. In addition, the Italian pension system, which absorbs approximately 16% of Gross Domestic Product (GDP), crowds out public investment in youth employment initiatives and professional development programmes, reinforcing the structural stagnation of salaries for professionals at the beginning of their career (Eurostat 2025).

Overall, substantial structural drivers of brain drain that weaken the economy's potential are labour market inefficiencies in Italy, including intellectual unemployment, skill mismatches, low returns on education, underpayment, and adverse selection.

1.1.2 Institutional and Administrative Frictions

Widespread regulatory and bureaucratic inefficiencies curb skilled professionals' optimal use and retention. Theoretically, institutional economics highlights how formal rules, informal norms, and enforcement mechanisms shape economic performance (North 1990). Discouraging entrepreneurial activities and limiting labour market flexibility are the intricate web of regulations and decentralised administrative processes, which are classified as an institutional constraint. These inefficiencies manifest acutely in critical areas for skilled individuals.

Starting a business in Italy exemplifies the weight of bureaucratic obstacles. The World Bank's Doing Business reports consistently rank Italy lower than most OECD economies in areas such as ease of starting a business, obtaining construction permits, and enforcing contracts. High entry barriers and bureaucratic costs discourage entrepreneurial initiatives, particularly among younger individuals who often possess higher levels of education but face daunting obstacles when attempting to establish new enterprises (Bank of Italy 2012).

The system also presents specific and frustrating barriers for those seeking to stay or return. Bureaucratic complications are a noteworthy deterrent, even for those who want to return to Italy after obtaining degrees abroad. Relocation procedures, such as registration with the INPS, change of tax residence and obtaining basic services, are lengthy and dispersed between several agencies. Italy lacks a specialised organisation or one-stop platform to facilitate return migration, which deters highly qualified

professionals from returning, unlike nations like Portugal or Ireland (Italian Visa 2025). Potential returnees suffer enormous opportunity costs as a result of this administrative fragmentation. The recognition of foreign qualifications presents an additional bureaucratic hurdle. Despite Italy signing international agreements such as the Lisbon Recognition Convention, the national process for validating foreign academic and professional credentials, notably through the *dichiarazione di valore* (value declaration), remains opaque, slow, and decentralised (CIMEA n.d.). These difficulties are particularly pronounced for non-EU professionals and Italians who have trained abroad and seek reintegration into regulated professions such as medicine, engineering, and education. Further complicating matters, Italy does not offer a fast-track residency or integration pathway for high-skilled professionals, unlike countries such as Germany, which grants permanent residency after 33 months, or 21 months with B1-level language proficiency (Italian Visa 2024). The EU Long-Term Residence Permit, regulated under Article 9 of the *Testo Unico sull'Immigrazione* (Unified Immigration Text, TUI), requires five years of legal residence, providing no accelerated route for talent Italy would otherwise benefit from retaining or attracting (Normattiva 2025). The absence of streamlined mechanisms further alienates high-skilled workers and reinforces outward migration tendencies.

The concept of regulatory capture may explain why these inefficiencies continue to exist. According to this view, interests rooted in the Italian administrative structure could oppose changes that would improve market access and transparency in favour of maintaining the status quo. This would disadvantage foreigners and new competitors. This dynamic suppresses the Italian economy's innovation potential, limits competition, and maintains inefficiency (Stigler 1971).

Finally, these regulatory and bureaucratic inefficiencies collectively create a hostile environment for skilled professionals, which increases the costs of staying or returning to Italy. The cumulative effect is a structural push factor that weakens Italy's ability to retain talent and undermines its economic competitiveness in an increasingly globalised labour market.

1.1.3 Underinvestment and Firm Constraints on Innovation and Productivity

Chronic *underinvestment* in crucial sectors and the inherent limitations of the Italian firm landscape reduce the incentives for skilled workers to stay in or return to Italy. These interconnected issues constrain opportunities and diminish the expected utility of building a career in Italy.

Critical areas, namely research and development (R&D), innovation, and higher education, are underinvested. Hence, Italian professionals, researchers, and scientists often work in environments lacking financial resources for pioneering projects and/or advanced work. According to OECD data, the average gross domestic expenditure on R&D (GERD) is 2.7%. Countries like Germany spend 3.1% and the United States 3.5% of GERD and are far ahead of Italy with only 1.5% of GERD in 2022, notably below the OECD average (OECD 2023). This underinvestment weakens the national innovation system and limits the international competitiveness of Italian universities and research centres.

Furthermore, private sector investment in R&D accounts for a smaller share in Italy (52%) than in most advanced economies (over 65%), indicating a fragile culture of industry-driven innovation. In 2023, private sector R&D investment stood at 0.80% of GDP, with forecasts predicting a slight decline to 0.76% by 2028 (ReportLinker n.d.). The business sector's lack of commitment to innovation is evidenced by the trend restricting opportunities for highly skilled researchers and professionals.

Theoretically, Italy's situation exemplifies a classic case of public good under-provision. Innovation and scientific research produce significant positive externalities. These benefits spill over to society, but private firms typically underinvest in these activities because they cannot capture all the resulting gains (Arrow 2015). Without sufficient public funding to correct this market failure, socially valuable research remains underfunded, limiting the generation of new knowledge and technological advancement.

Financial underinvestment has consequences that go beyond institutional inefficiencies. The brain drain phenomenon entails a profound loss of human capital externalities. The work of highly skilled individuals directly contributes to creating knowledge spin-offs, mentoring young workers, and fueling broader productivity gains

within their sectors. As many educated Italians emigrate, over 300,000 highly educated individuals between 2012 and 2021, Italy loses immediate labour contributions and the dynamic, cumulative benefits of innovation-driven growth (ISTAT 2023).

Compounding these structural issues is the limited availability of advanced research facilities and cutting-edge technology within Italy compared to international competitors. Scholars and scientists increasingly migrate to destinations with access to better laboratories, more generous research grants, and more vibrant professional networks. Comparative studies reveal that countries such as Germany and France allocate nearly double the per-researcher funding compared to Italy, making foreign research environments considerably more attractive (European Commission 2023).

Besides the direct underinvestment, the reallocation of resources towards innovation and education is hampered by the wider fiscal structures. Italy's public finances are under considerable strain due to its ageing population; pension spending accounts for around 16% of GDP, among Europe's highest (Eurostat 2024). Public spending on future-oriented sectors such as higher education, research funding, and youth employment initiatives is crowded out by the demographic burden. Italy's fiscal priorities perpetuate intergenerational imbalances, directing resources away from investments in young talent that could otherwise stimulate long-term economic renewal.

In the end, the financial and resource constraints of Italian institutions and professionals create a systemic environment that reduces incentives for highly qualified individuals to build their careers in the country (Acemoglu et al. 2005). Without adequate public investment, private sector engagement, and strategic reallocation of resources towards innovation ecosystems, Italy risks reinforcing a vicious cycle of underdevelopment, stagnation, and the continued emigration of its most capable citizens.

1.1.4 Structural and Systemic Deficiencies in Academia and Research

Despite the Italian academic and research ecosystem having a historical academic excellence, it suffers from structural and systemic deficiencies that act as influential push factors for skilled individuals, particularly scientists, researchers, and academics. The system's inefficiencies contribute to a mismatch between the skills produced and

the opportunities available, besides this sector's importance in innovation and human capital development (Caroleo & Pastore 2015).

The structural characteristics of Italian universities are a primary issue. The majority are large public institutions subject to excessive public control (Acemoglu et al. 2005). Their flexibility in selecting students, developing curricula, and hiring the faculty is restricted by insufficient funding, low autonomy, and rigid governance structures (OECD 2023). Compared to their international counterparts, they are less sensitive to changing labour market demands and less effective in stimulating domestic innovation. According to the performance indicators, Italian universities have poor performance in technology transfer, collaboration between academia and industry and patent production. Under-funded research sectors contribute specifically to the push factor (OECD 2023).

In addition, bureaucratic inefficiencies are deeply rooted in the academic and research landscape. Cumbersome administrative processes, fragmented research governance, and centralised decision-making structures create significant barriers for researchers seeking research grants, launching international collaborations, or advancing in the academic ranks (OECD 2023). The difficulties associated with scholars and PhD candidates pursuing an academic career domestically and a scarcity of postdoctoral and tenure-track opportunities often compel young researchers to seek more supportive environments abroad. This contrasts with environments abroad that offer better research infrastructure and funding opportunities (European Commission 2023).

One particularly well-established problem is the general lack of meritocracy in the Italian academic world. Hiring and promotion practices are often influenced by clientelism, cronyism, and nepotism, which are typically associated with the informal power of full professors known as "*baroni*" (senior academic power brokers). This dynamic can be understood through the lens of Principal-Agent Theory, where inefficiency arises as agents (hiring committees) may prioritise personal networks or loyalty over merit-based performance, undermining essential incentive structures (Eisenhardt 1989). Studies, such as Sergio Nava's work "*La Fuga dei Talenti*" (the flight of talents) and research on Italian migration to London, highlight that many young Italian talents perceive their career prospects as being blocked by systemic favouritism

and closed networks rather than a lack of ability (Scotto 2014). Adrian Favell describes such individuals as "eurostars" who are driven to seek more meritocratic systems abroad due to their absence at home. Empirical evidence from surveys of Italian professionals abroad supports this, with a high percentage citing merit-based career progression as a key motivation for emigration (Scotto 2014).

The cumulative result of these structural and systemic deficiencies is a research environment that struggles to retain or effectively utilise the human capital it produces. This contributes to skill shortages in critical sectors and reflects persistent structural unemployment where systemic frictions hinder the efficient matching of skills to opportunities (Caroleo & Pastore 2015). The difficulties in establishing start-ups or securing independent research funding within Italy further underscore the lack of support for entrepreneurship and innovation in this environment. For instance, Figure 2 is built on data from European Centre for the Development of Vocational Training (CEDEFOP) and Programme for the International Assessment of Adult Competencies (PIAAC) and shows the average intensive-margin skill shortage, weighted by occupation shares, for Nomenclature of Territorial Units for Statistics – Level 2 (NUTS 2) in Europe. The map shows considerable variation in the average extent of skill shortage across European regions. In Northern Europe, such as Sweden, the trend is lower than in many areas in Southern Europe, including Italy, which is characterised by skill shortages (Vella 2024).

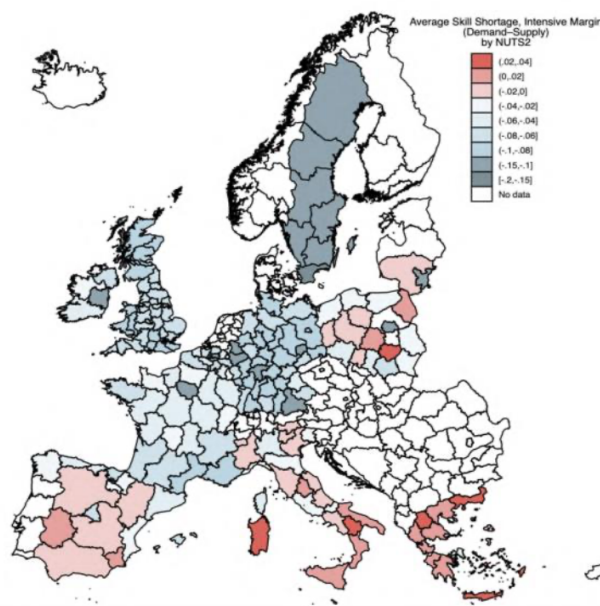


Figure 2: Skill Shortage across European Regions

Source: Vella 2024

In summary, Italy's systemic governance failures, underfunded university structure, clientelism, and lack of meritocracy undermine its ability to retain skilled workers, driving ongoing brain drain, especially among academics and researchers.

1.1.6 Regional Economic Disparities

A defining characteristic of the Italian brain drain is that internal regional economic disparities within Italy are a decisive structural push factor contributing to it. This phenomenon is most prominently characterised by the persistent economic gap between the more industrialised North and the less developed South, *Mezzogiorno*.

The North-South divide can be effectively analysed through the lens of new economic geography, which explains how economic activity tends to cluster in regions that already benefit from agglomeration effects, infrastructure, and skilled labour pools (Krugman 1991). In Italy, this has led to a self-reinforcing cycle: while Northern regions such as Lombardy and Emilia-Romagna concentrate the majority of high-value industries, southern regions struggle with limited diversification, weaker infrastructure, and chronically high youth unemployment. The result is a two-tier economy in which the South consistently underperforms key economic indicators. Historically, national and EU structural funds have disproportionately benefited the North, further entrenching its advantages in infrastructure, innovation ecosystems, and job creation (Centofanti 2024). Although the EU's Recovery and Resilience Facility has earmarked resources for bridging regional gaps, the implementation of large-scale projects, such as the high-speed rail line between Naples and Bari, remains slow and administratively fragmented (Segreti 2025). Meanwhile, venture capital flows, business incubators, and digital infrastructure are overwhelmingly concentrated in metropolitan areas of the North, depriving the South of the conditions necessary to support high-skilled entrepreneurship and innovation.

Between 2012 and 2022, more than 330,000 young people left the South for either Northern Italy or other European countries (Reuters 2024). This “internal brain drain” is often a precursor to international migration, as Southern graduates seek

advanced education or employment in Milan, Bologna, or Rome before relocating abroad. The economic costs of this exodus are considerable, not only in terms of lost productivity and tax revenue, but also in the worsening of regional inequality and demographic decline. Municipalities in the south are increasingly confronted with an ageing population and labour shortages, while the North continues to attract and concentrate talent.

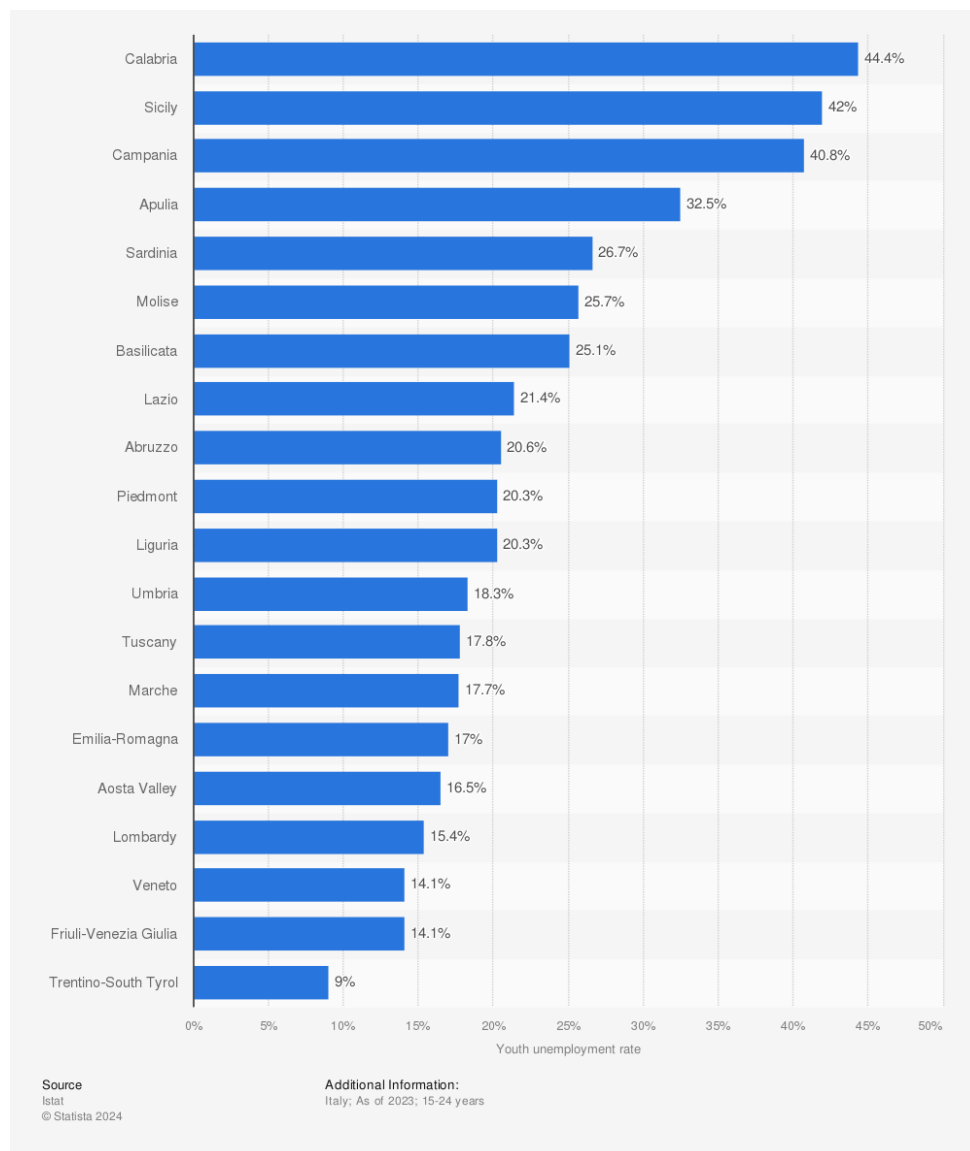


Figure 3: Youth unemployment rate in Italy in 2023, by region

Source: Statista 2024

In 2023, as shown in Figure 3, youth unemployment in the southern regions of Calabria and Sicily remained high at 30%, compared with less than 15% in Northern

regions such as Trentino-Alto Adige (Statista 2024). School results reveal a significant regional variation; the drop-out rate in Sicily and Campania exceeds 16%, while the national average is 13.8% (Fondazione Pirelli 2023). These educational disadvantages are compounded by limited access to high-quality tertiary institutions and research centres, reducing the South's ability to retain its most talented students.

Regional inequality disproportionately affects women with female labour force participation in regions like Calabria remaining below 40%, compared to over 60% in many northern provinces (ISTAT 2023). Faced with limited opportunities, rigid gender norms, and a lack of professional role models, many skilled women see emigration as the only viable path to career advancement and gender equity.

Italy's regional disparities, therefore, act as a deep structural push factor in its brain drain phenomenon. As the South fails to offer viable pathways for high-skilled labour, due to poor employment prospects, underfunded education, and limited investment in innovation, its most promising minds are incentivised to relocate, first within the country, and ultimately beyond its borders. Without sustained and targeted policies to correct this imbalance, internal inequalities will continue to fuel external migration, draining the South of its future and undermining national cohesion.

1.1.7 Socio-Cultural and Governance Issues

Sociocultural and governance-related barriers influence the emigration of skilled Italians. These elements influence people's expectations regarding long-term life satisfaction, fairness, and career advancement at the micro level. The value of investing human capital in Italy declines when institutions are viewed as opaque or ineffective, and meritocracy is weak (Acemoglu et al. 2005).

A major contributor is Italy's persistently low level of social mobility. Intergenerational income mobility remains among the lowest in Western Europe, meaning parental background heavily influences life outcomes (OECD 2018). This entrenched immobility sends a clear signal for those from non-privileged backgrounds: effort and talent alone may not be enough to succeed. This perception, reinforced by widespread nepotism and clientelism, especially in hiring within academia and public administration, deters investment in long-term careers at home (Acemoglu et al. 2005).

These dynamics contribute to what economists describe as a time-inconsistency problem. While many young Italians feel emotionally connected to their country, they often discount the value of remaining when faced with a stagnant system. From a rational choice perspective, emigration becomes an intertemporal optimisation strategy; the short-term costs of leaving outweigh the long-term gains of merit-based advancement abroad (Becker 1975).

The lack of institutional trust pushes this behaviour even further. Italy consistently ranks below the EU average in Transparency International's Corruption Perception Index, with governance performance weakened by procedural opacity and inconsistent implementation of reforms (Transparency International 2023). These conditions raise the perceived "transaction costs" of building a fair and stable career within the country. This is particularly pronounced among young professionals in academia, research, and the civil service, where transparent processes and merit-based evaluations are essential.

Cultural norms also reinforce emigration. In many regions, emigration is normalised as a rite of passage, with family structures often encouraging rather than resisting departure. Sociologist Favell describes this "exit culture," which creates a feedback loop in which leaving becomes acceptable and expected among the most ambitious (Meeus 2009).

Together, these socio-cultural and governance issues act as influential push factors. Even without acute economic hardship, many high-skilled Italians perceive the domestic system as fundamentally hostile to merit, prompting them to seek environments where talent is more likely to be recognised and rewarded.

1.2 Pull Factors Attracting Italian Brains

1.2.1 Better Employment Opportunities

A primary pull factor attracting highly skilled Italians abroad is the availability of broader and better-matched employment opportunities in destination countries. International labour markets offer more positions aligning effectively with individuals'

educational backgrounds and expertise, reflecting stronger labour absorption capacity and a more diversified demand for advanced skills.

Monteleone and Torrì's survey of Italian graduates, doctoral students, and researchers working abroad found that 95.7% of respondents cited better employment opportunities as a key reason for migration. This goes beyond the simple availability of jobs, with respondents pointing out that foreign markets better match their qualifications, allowing them to engage in specialised work that uses their training more effectively (Monteleone and Torrì 2010).

Furthermore, the institutional reputation of prospective employers, such as host universities and research centres, significantly amplifies this appeal. According to Monteleone and Torrì, 82.7% of respondents were drawn by the prestige of these institutions, which signal excellence and provide gateways to well-resourced professional networks, international collaboration, and long-term stability (Monteleone & Torrì 2010).

From the human capital theory perspective, individuals are motivated to maximise the returns on their educational investment by locating where their competencies are most valued and productively employed (Becker 1975). Consequently, global labour markets serve as powerful magnets for skilled Italian workers, not simply because they offer more jobs, but because they provide better-matched, more rewarding careers, often within institutions that enhance both individual and professional value (Acemoglu et al. 2005).

1.2.2 Skill Enhancement and Research Support

An important factor in attracting highly qualified Italians abroad is the possibility of continuously developing their skills and providing solid support for research in the destination countries. These environments are often dynamic and innovation-driven, actively investing in human capital through access to advanced training, modern infrastructure and well-funded research ecosystems. This aligns with endogenous growth theory, which suggests that sustained economic growth is driven by knowledge accumulation and technological advancement (Romer 1990). Skilled workers are most

productive where their abilities can evolve through exposure to new ideas, methods, and technologies.

Monteleone and Torrisi's survey found that 78.3% of Italian graduates abroad were motivated to improve their competencies, and 75.5% by the opportunity to extend them (Monteleone & Torrisi 2010). This highlights that professional development opportunities are nearly as crucial as initial employment. Constant and D'Agosto also note that Italian researchers are drawn to countries with better research infrastructure and funding, facilitating higher productivity and career advancement. Access to scientific equipment and technology is a primary factor influencing researcher mobility and subsequent brain drain (Constant & D'Agosto 2010).

Destination countries provide better laboratories and equipment and higher success rates in securing competitive research grants, enhancing researchers' international visibility and long-term career prospects. Supportive research environments, including robust intellectual property frameworks and interdisciplinary centres, further increase the appeal of these locations. In addition to academia, the private sector in innovation-intensive economies frequently offers professional development pathways, enhancing the long-term utility of migration for workers in fields such as STEM and high-tech. Ultimately, the prospect of improving and expanding skills in well-supported environments abroad is a central pull factor, reflecting a strategic decision by skilled individuals to remain competitive in global labour markets (Franzoni et al. 2014).

1.2.3 Structural and Systemic Advantages

Another decisive pull factor attracting highly skilled Italians abroad is the presence of transparent, meritocratic systems and well-functioning institutions in destination countries (Acemoglu et al. 2005).. For many professionals, especially in academia, research, and the public sector, the assurance that performance will be objectively evaluated and rewarded is crucial. High institutional quality, defined by organisations' efficiency, transparency, and accountability, is linked to attracting and retaining human capital (North 1990).

According to Monteleone and Torrasi, 93.5% of surveyed Italian professionals abroad cited merit-based career progression as a key reason for migration. Constant and D'Agosto (2010) similarly found that the perception of transparency and fairness in hiring and funding systems is a significant magnet, particularly for researchers and academics (Constant and D'Agosto 2010). Recruitment, evaluation, and promotion processes in these countries are often based on published criteria and peer review, fostering trust.

Countries receiving high numbers of Italian emigrants, such as Germany and the Netherlands, consistently score high on governance indicators for the rule of law, government effectiveness, and control of corruption. These indicators signal that work will be evaluated fairly and procedures are reliable, with minimal clientelism. Efficient administrative processes, like streamlined access to funding or visa procedures, also reduce the "transaction costs" of professional life. Ultimately, the opportunity to work in systems where effort and excellence are recognised provides a sense of career legitimacy and is a decisive pull factor (Transparency 2023).

1.2.4 Economic and Quality of Life Considerations

Beyond professional opportunities and institutional factors, the emigration of highly skilled Italians is significantly influenced by the destination countries' superior economic incentives and quality of life. These encompass higher salaries, better work-life balance, stronger social protection systems, and enhanced well-being.

Theoretically, the migration decision can be understood through the utility-maximisation model and comparative wage analysis. Individuals weigh their expected earnings abroad against their reservation wage in Italy, opting for migration when foreign opportunities offer higher expected returns, including non-monetary benefits (Stark & Bloom 1985).

Empirical findings by Monteleone and Torrasi confirm that 72.8% of surveyed Italian professionals abroad cited higher earnings as a key motivation for emigration. This included base salaries and comprehensive compensation packages (Monteleone & Torrasi 2010).

Crucially, quality of life considerations are also significant. Factors such as shorter working hours, predictable schedules, safer workplaces, and efficient public services are consistently highlighted by skilled emigrants. Countries in Northern and Western Europe, known for their work-life balance regimes, are beautiful, supporting career advancement and family stability. Studies confirm that countries such as Germany, Sweden, and the Netherlands outperform Italy in various quality-of-life metrics, including life satisfaction and job security (Burke 2020). High-skilled migrants also value societies with efficient public administration and low corruption, which foster social trust and predictability (Rothstein & Uslaner 2005).

In sum, the combined effect of higher economic returns and superior living conditions constitutes a decision to leave and not return.

1.2.5 Destination Choice

A fundamental pull factor attracting highly skilled Italians abroad is the structural openness of international labour markets, particularly within the European Union. Globalisation, digital platforms, academic exchange programmes, and legal frameworks significantly lower the barriers and costs associated with migration. For educated Italians, especially younger individuals, these elements do not just facilitate emigration but actively shape career planning towards international pathways (OECD 2023).

Theoretically, this dynamic is understood through the New Economics of Labour Migration, which views migration as part of household strategies to diversify income and manage risk, where institutional facilitation (like open borders and mutual credential recognition) lowers the cost of skilled movement (Stark & Bloom 1985).

The European Union's freedom of movement for Italian citizens, enshrined in Article 45 of the Treaty on the Functioning of the EU, provides unrestricted access to labour markets and systems in other member states, making countries like Germany, France, Belgium, the Netherlands, and Ireland especially attractive. These destinations benefit from established research infrastructures, higher R&D investment, and pro-innovation policies, enabling them to absorb Italian talent readily (European Commission n.d.).

Labour market structures and innovation ecosystems in host countries also shape destination preference. Countries like Germany and the Netherlands are particularly appealing due to their high R&D intensity, transparent labour policies, and strong demand for skilled workers in fields such as engineering and IT. Countries outside the EU, such as Canada and the UK, also remain attractive due to their strong academic networks and targeted visa schemes for skilled migrants (OECD 2023).

Furthermore, the expansion of the foreign market through digital globalisation allowed Italian professionals to access international job listings and collaborate with foreign researchers online, making transitions increasingly frictionless (Lehmann & Kluve 2010).

Moreover, EU programs such as Erasmus+ actively facilitate mobility by funding international study, research, and collaboration. These programs foster transnational academic careers and provide structural incentives for early-stage researchers to establish long-term professional roots abroad. According to the European Research Council (ERC), a substantial share of grantees from Southern Europe, including Italy, take up positions in Northern and Western Europe after completing their funded projects (ERC 2022).

Finally, essential pull factors include institutional openness, supportive policies, and digital connectivity. These factors lower barriers and increase the visibility of foreign opportunities, making international mobility a typical and increasingly expected trajectory for Italy's qualified professionals.

Conclusion

In conclusion, Chapter 1 analysed Italy's brain drain drivers using the *push-pull* model. Talents leave due to the main push factors, namely labour market inefficiency, underpayment, underinvestment in R&D, and institutional weaknesses, which compel talent to leave. Meanwhile, talents are attracted abroad by pull factors such as superior job opportunities, meritocracy, and higher earnings. This modern exodus of highly skilled talent frequently leads to permanent emigration. Identifying the main drivers is essential in explaining why Italian talent migrates and is crucial for economic

policymaking. Chapter 1 sets the stage for the following chapter, which deals with the economic and societal consequences of the ongoing loss of skilled human capital.

Chapter 2: Consequences of Brain Drain on Italy's Economy and Society

This chapter aims to explain the far-reaching consequences of Italy's brain drain on its economy and society. The chapter is divided as follows.

Section 2.1 details the short-run economic burden, focusing on human capital flight and its manifestations in three areas: direct fiscal losses from invested human capital, sectoral disruptions within critical economic regions, and weakening national innovation and global competitiveness.

Section 2.2 examines the societal ripple effects of the demographic structure. The acceleration of population ageing and the shrinking young labour pool exacerbate regional disparities by widening the North-South divide and affecting more regions.

Section 2.3 explores the main long-run systemic risks posed by persistent brain drain, which contributes to economic stagnation and fosters civic disengagement.

Conversely, section 2.4 offers a comparative perspective. It highlights how Italy's loss constitutes a brain gain for different nations and discusses the structural redistribution of human capital at a global level.

Chapter 2's sections comprehensively analyse how brain drain undermines Italy's future prosperity and resilience, setting the stage for the final chapter's policy assessment.

2.1 Human Capital Flight: A Loss Across Three Fronts

2.1.1 Fiscal Losses

One of the most impactful economic burdens caused by the emigration of highly educated individuals is the direct fiscal cost. From a public finance perspective, each emigrant represents a significant sunk cost for the Italian state. This cost is incurred through public investment in their education, from primary school to university.

According to 2018 estimates, brain drain costs approximately €14 billion annually, equivalent to 1% of Italy's GDP (9Colonne 2022). This figure reflects the unrecovered public expenditure on education for graduates who subsequently emigrate. On average, this investment totals approximately €120,000 – €150,000 per university graduate. By emigrating, these individuals mean the Italian state effectively finances human capital accumulation for other economies without receiving a return on its investment.

Beyond education costs, brain drain depletes Italy's future tax base. In microeconomic terms, each emigrated graduate represents a stream of forgone fiscal revenue. Emigrated professionals pay taxes elsewhere, such as income tax, social contributions, and Value Added Tax (VAT) through consumption, leading to a direct loss of tax revenue for Italy. This loss accumulates over the years, mainly because many emigrants are in their highest earning years, corresponding to the late 20s to 40s (Monteleone & Torrisi 2010).

High-income earners are a significant source of revenue for Italy's tax system, which consists of a progressive income tax (IRPEF) that ranges from 23% to 43% in addition to regional and municipal surcharges. Individuals earning between €29,000 and €75,000 annually, roughly 21% of taxpayers, contribute over 40% of total income tax revenues. An average Italian graduate would contribute approximately €600,000–€800,000 in income taxes, pension contributions, and indirect taxation over their lifetime (ISTAT 2023). Italy loses an estimated €1.2 billion annually in unrealised tax revenues when tens of thousands of emigrants are aggregated annually, creating a persistent fiscal gap that strains public finance sustainability. This loss of contributions from high-income earners directly exacerbates existing budgetary pressures on the pension system and public services (EDJNet 2023).

2.1.2 Sectoral Disruptions

Another severe economic burden of the phenomenon is the talent losses across STEM, healthcare, and academia sectors. Overall, approximately 19% of Italy's tertiary-educated workforce has emigrated. The consequences are visible in the labour market through prolonged high-skill job vacancies, which take 7.2 months to fill in

Italian tech sectors compared to the EU average of 4.1 months, and distorted wage structures (Constant & D'Agosto 2010).

In STEM fields, persistent issues include chronic underinvestment in R&D, which accounts for just 1.5% of Italian GDP compared to the EU average of 2.2%; non-competitive salaries and the lack of a dynamic startup ecosystem compound this. As a result, 40% of AI/robotics graduates emigrate, contributing to an 18% reduction in patent filings since 2015. Regional disparities mean southern regions like Sicily suffer particularly high losses, such as 30% of software engineers, while northern hubs like Milan retain more talent (Constant & D'Agosto 2010).

The healthcare sector faces an equally severe crisis. Italian doctors earn 40% less than their EU counterparts, leading to 15% emigrating and draining significant public investment. The most affected regions are in the South, where they struggle with shortages exacerbated by outdated infrastructure. Calabria, for example, has one doctor per 1,200 residents, which is half the ratio of Lombardy (Constant & D'Agosto 2010).

Academia is likewise weakened. A key issue is the prevalence of temporary contracts, affecting 60% of researchers. Funding per scholar is significantly lower in Italy (€9,000) than in countries like Germany (€22,000). Bureaucratic hurdles and a perceived lack of meritocracy further discourage professionals. Consequently, two-thirds of Italian universities are now ranked outside the global top 200, 33% of PhD holders leave within five years, and there has been a 12% decline in securing EU Horizon funding since 2015 (Constant & D'Agosto 2010).

These sectoral losses undermine Italy's ability to compete in the global knowledge economy.

2.1.3 Innovation & Global Competitiveness

Italy's persistent brain drain diminishes its capacity for innovation and weakens its standing in the global knowledge economy. The departure of highly skilled individuals represents a loss of potential contributions to R&D and innovation.

This talent loss is reflected in measurable declines in key economic indicators. Brain drain accounts for approximately -0.4% of Italy's annual Total Factor Productivity

(TFP) growth, a critical measure of efficiency and technological progress. Innovation capacity is further reduced, evidenced by an 18% drop in patent filings since 2014 (Colombo 2014).

Brain drain weakens Italian representation and voice in international academic, scientific, and policy communities, effectively losing soft power and cultural capital. The country is experiencing a "veritable diaspora of scientifically and technologically-skilled personnel", making attracting talent and eroding national competitiveness difficult (Coppola et al. 2012). Compared to countries like Germany, which sees a net brain gain in researchers and engineers, Italy is uniquely positioned in a "talent development trap". As noted in a 2012 report compiled by Italian professionals working abroad, Italy's challenges are twofold. The first is an alarming increase in skilled human capital exiting the country's economic system, and the second is the inability of the Italian system to attract foreign-trained professionals. The combination creates a perfect storm that erodes national competitiveness in key sectors (Coppola et al. 2012).

Consequently, Italy has a comparative disadvantage and bears the negative externalities of this imbalance.

2.2 Societal Ripple Effects

2.2.1 Demographic

Italy's brain drain impacts its demographic structure by fostering an ageing workforce and shrinking the young labour pool. A key concern is the departure of individuals in their prime working years. For instance, nearly three-quarters, 72%, of Italian citizens who emigrated in 2018 were 25 years or older, with almost one-third, 32%, holding at least a university degree. This represents a substantial loss of productive human capital when they could contribute most significantly to the economy, potentially start families in Italy (ISTAT 2024).

Conversely, during the same period, approximately 104,000 young individuals in the same age group returned to Italy, of whom over 45,000 held a university degree. Over the past decade, the net balance has resulted in a net loss of over 87,000 young

graduates. Significantly, in 2022, there was an increase in the emigration of young graduates aged 25 to 34 years (18,000, a 23.2% rise from the previous year), while the number of returning young graduates decreased (6,000, an 18.9% drop from 2021). This dynamic leads to a negative migration balance, translating into a loss of 12,000 young, qualified individuals, aligning with pre-pandemic levels (ISTAT 2023).

The phenomenon includes a gender dimension. Between 2009 and 2018, the percentage of female emigrants aged 25 and over with university degrees rose by 10 percentage points, compared to a seven percentage point increase for males. This may indicate increasing educational attainment among women and potentially greater obstacles for highly educated women in the Italian labour market (ISTAT 2025).

Demographically, these challenges are compounded by regional variations. Thirteen of Italy's twenty-one regions are experiencing demographic decline. Reversing the demographic crisis will be challenging, especially when dealing with the loss concentrated in certain areas and potentially locking them into population ageing and economic stagnation cycles. The trend of youth emigration and rural depopulation is evident in the South (EDJNet 2023).

2.2.2 Regional Disparity

Italy's brain drain exacerbates the long-standing economic and social gap between the industrialised North and the *Mezzogiorno*. This structural push factor drives thousands of highly educated Italians, from southern regions, towards northern cities and, ultimately, abroad. The constant emigration of skilled individuals contributes to a widening north-south economic performance and opportunities divide. For example, Southern Italy's GDP per capita has fallen to just 55% of the North's output (EDJNet 2023).

While the South has historically been the primary source of outward migration, exacerbating youth emigration and rural depopulation, the problem of brain drain and the struggle to retain young people through third-level education are no longer confined to the traditionally disadvantaged South. The European Commission's analysis indicates that thirteen of Italy's twenty-one regions are experiencing demographic decline and difficulties retaining young graduates. This geographic expansion now includes regions

in the northwest (Piedmont, Liguria, Valle d'Aosta), northeast (Friuli Venezia Giulia), and central Italy (Marche, Umbria, Abruzzo) (EDJNet 2023).

The European Commission identifies six of Italy's seven "least developed" regions as trapped in a "talent development trap": Sardinia, Sicily, Calabria, Apulia, Basilicata, and Molise. Only Campania among the southern regions shows slightly better graduate retention, though its situation remains precarious (EDJNet 2023).

Research analysing migration patterns also suggests that even internal migration of human capital from the South to the North can increase unemployment rates in Southern regions without producing significant positive effects in Northern areas, potentially worsening regional disparities (ISTAT 2023).

A concentration of human capital in the North or abroad reinforces cycles of decline and disparity in weaker regions.

2.3 Long-Term Systemic Risks

2.3.1 Economic Stagnation

The steady exodus contributed to the cumulative snowball of economic stagnation, characterised by diminished innovation, declining productivity growth, and weakening labour market dynamics. An analysis from a microeconomic standpoint reveals the structural mechanisms by which the emigration of high-skilled individuals induces a negative feedback loop that constrains Italy's economic potential (OECD 2023).

At the microeconomic level, human capital is a fundamental driver of firm-level productivity and innovation. In a competitive market economy, firms invest in R&D activities to enhance product offerings, improve production processes, and maintain or expand market share. The availability of high-skilled labour is essential to these innovation processes. However, as Italy experiences a net outflow of highly educated young workers, firms face a scarcity of the specialised skills necessary to sustain innovative activities. This contraction of adequate human capital reduces the marginal productivity of remaining workers. It increases the opportunity cost of investing in innovation, leading to a decline in aggregate innovative output across sectors (Arrow 2015).

Lower rates of innovation manifest in stagnating TFP, which is critical for long-term economic growth beyond simple capital accumulation. In the absence of technological progress and efficiency gains, firms experience diminishing returns to scale. Consequently, firm growth slows, market competition weakens, and wages stagnate due to the declining marginal product of labour. These dynamics depress domestic aggregate demand and diminish the incentives for domestic investment, particularly in high-value-added industries (Romer 1990).

The structural stagnation in firm-level performance and labour markets further aggravates the emigration decision. According to standard human capital theory, individuals seek to maximise the return on their education and skills. In an environment where wage premiums for education are low, career progression is limited, and firms underinvest in human capital development, emigration becomes a rational economic choice. The exodus of young professionals thus depletes the domestic economy of its most dynamic labour force segment, reinforcing the low innovation and growth cycle (Becker 1975).

Moreover, network externalities amplify this cycle. The departure of key individuals from professional, academic, and industrial networks reduces the knowledge spillovers essential for regional innovation systems. As more talented individuals leave, local economies suffer from a breakdown of collaborative environments critical to entrepreneurship, start-up formation, and R&D clustering, particularly in already fragile regions of Southern Italy (Arrow 2015).

Italy's brain drain leads to a Pareto-inferior equilibrium. Without coordinated systemic reforms, the situation cannot improve. Therefore, no actor, firm, or institution can unilaterally implement changes.

2.3.2 Civic Disengagement

Brain drain in Italy has notable political and social consequences, including civic disengagement, where emigration serves as a political protest, and a decline in trust in the meritocratic system.

From a microeconomic standpoint, individuals assess their labour market outcomes and the institutional environment that shapes their long-term prospects. When domestic institutions are perceived as inefficient, corrupt, or incapable of rewarding merit, the perceived utility of remaining in the country declines relative to the expected utility abroad. Thus, emigration becomes not merely an economic decision but a political act of disengagement, a silent yet powerful protest against a failing system (Acemoglu et al. 2005).

Empirical research shows that countries experiencing significant youth emigration often face a depletion of civic capital. Young, educated individuals are disproportionately likely to participate in political processes, advocate for institutional reforms, and contribute to the vibrancy of democratic life (Docquier & Rapoport 2012). Their departure weakens the systems of democratic accountability and social innovation by reducing the number of engaged, reform-minded citizens in the country. This decline in civic participation worsens governance inefficiencies, resulting in a vicious cycle whereby bad governance drives out talent and bad governance is sustained by a lack of talent.

Younger generations are further disillusioned by the pervasive belief that meritocracy is impossible because of ingrained nepotism, clientelism, and inflexible hierarchical structures. Studies on Italy's youth indicate that perceptions of unfairness in labour markets and politics significantly increase the likelihood of emigration (Azzolini & Barone 2013). When personal success appears decoupled from individual effort or talent, the incentive to invest in civic and political participation diminishes. Individuals rationally redirect their aspirations toward systems where merit is more consistently rewarded, such as Northern Europe or North America.

In Italy, selective emigration leads to bias affecting the remaining population. Those who choose to stay often have limited opportunities for advancement or are more accepting of the existing inefficiencies in the system. Over time, selective migration changes the social and political landscape, resulting in deep-seated mistrust in institutions and a lack of pressure for necessary reforms. This situation creates structural problems that persist. From a welfare economics viewpoint, it would be better for society if talented individuals stayed and contributed to national development instead of

leaving due to dissatisfaction with the system. Additionally, civic disengagement negatively impacts Italy's social contract, which can have lasting effects on political stability and the quality of institutions (Rothstein & Uslaner 2005).

2.4 Comparative consequence

Italy's brain drain leads to the loss of domestic talent while benefiting countries that attract these skilled professionals. This redistribution of human capital affects global competitiveness, innovation, and national welfare.

The departure of Italian talent, notably in academia, healthcare, and high-technology sectors, has fortified the host countries' economic and intellectual assets. When benchmarked against countries like Germany, which enjoys a net brain gain of -1.2%, or Spain, with more stable skilled emigration patterns, Italy's predicament appears particularly acute due to its combination of high outflows and failure to implement effective retention or repatriation policies. Countries such as Canada, Germany, and France have actively benefited from Italy's human capital flight. According to AnnaLee Saxenian's publication of 2006, the migration of trained professionals can foster "global technological competition" and create transnational networks that have the potential to benefit both sending and receiving nations; Italian expatriates often enhance host institutions' research output, diversify intellectual environments, and increase international collaboration (Gertler 2008).

Quantitatively, the impact is substantial. Recent data show that nearly 40% of Italy's AI and robotics graduates emigrate within five years of graduation, significantly boosting their host countries' research and development capacities (OECD 2023). Furthermore, Italy supplies a notable share of foreign-trained medical professionals abroad: approximately 15% of Italian-trained doctors work in other national healthcare systems, strengthening capacities where domestic shortages exist. For example, Italian medical graduates in the United Kingdom's National Health Service (NHS) represent around 25% of consultants with foreign qualifications (EDJNet 2023).

The innovation dimension is equally pronounced. Studies have shown that Italian STEM emigrants file 18% more patents when working abroad than those remaining in Italy, indicating a higher productivity environment abroad that nurtures

their inventive capacities (Franzoni et al. 2014). Moreover, academic prestige is enhanced through the integration of Italian researchers: approximately 67% of Italian academics working abroad are employed by top-200-ranked universities, in contrast to just 33% who attain comparable positions within Italy (Franzoni et al. 2014).

However, the possibility of Italy harnessing the positive externalities of this transnationalism remains largely unrealised. Research by Alejandro Portes and Patricia Celaya (2013) underscores that "unaided free markets work no magic in this field"; that is, the spontaneous return of expatriate knowledge and investment does not occur without deliberate, state-led coordination, targeted incentive structures, and robust institutional frameworks (Portes & Celaya 2013). Without mechanisms to facilitate circular migration, diaspora engagement, or remote contribution schemes, Italy continues to experience a structural deficit of highly skilled labour that undermines its domestic innovation system and exacerbates long-term economic divergence with more dynamic economies.

Hence, while Italian talent enriches host countries through direct contributions in research, innovation, and service sectors, Italy bears the negative externalities of the imbalance.

Conclusion

Thus, Chapter 2 has explained the main consequences of brain drain on the Italian economy and society, laying the grounds for Chapter 3's assessment of policy effectiveness. Brain drain is an economic burden, involving direct fiscal costs from public investment in education and substantial forgone tax revenues. Also, it causes sectoral disruptions in critical fields like STEM, healthcare, and academia, undermining innovation and global competitiveness. Societally, brain drain amplifies the problem of demographic decline and exacerbates the North-South divide. In the long run, it contributes to economic stagnation and fosters widespread civic disengagement. While a loss for Italy, this migration is a gain for destination countries. Italy has largely failed to harness positive externalities from its diaspora.

Chapter 3: Policy Analysis

Chapter 3's central aim is to assess how effectively existing policies mitigate the drivers of emigration and counterbalance their detrimental effects.

Section 3.1 overviews existing policy instruments currently in force or under development, including fiscal incentives, regional development programs, investments funded by the EU, and frameworks for non-EU high-skilled workers.

Section 3.2 critically assesses the effectiveness of these policy instruments in addressing the structural impediments and market failures discussed in previous chapters.

Building on this assessment, Section 3.3 examines the structural flaws that compromise policy success. Hence, it is the fundamental misalignment between Italy's primarily demand-driven migration policy logic and the increasingly supply-driven nature of global high-skilled mobility.

Finally, Section 3.4 outlines potential directions towards a new talent attraction and retention policy framework.

Through this structured analysis, Chapter 3 aims to provide a comprehensive understanding of why Italy's current policy toolkit has yielded limited results in stemming the brain drain and to lay the groundwork for developing more effective strategies.

3.1 Overview of existing policies

3.1.1 Fiscal incentives

Italy's fiscal approach to brain drain mitigation has primarily focused on offering tax incentives or tax relief policies to attract back Italian nationals who reside and work abroad by reducing their opportunity cost of coming back, particularly those in high-skilled sectors.

The earliest fiscal provision dates back to *Decreto-Legge* (law decree) n. 269, enacted on 30 September 2003, introduced specific tax exemptions for researchers

returning to Italy after a defined period abroad (Gazzetta Ufficiale 2003). This initial scheme was narrow in scope and targeted a small academic diaspora segment. However, the framework began to expand with *Decreto-Legge* n. 78 of 31 May 2010, which extended the benefits to university professors and researchers under article 44, particularly those willing to relocate to the *Mezzogiorno*. In this context, income tax exemptions could reach 90 per cent for those returning to southern regions, offering a substantial financial incentive aligned with regional development priorities (Gazzetta Ufficiale 2010).

A significant turning point occurred with the implementation of *Decreto Legislativo* (legislative decree) n. 147 of 14 September 2015. This law introduced the *Regime Speciale per Lavoratori Impatriati* (Special Regime for Workers Returning to Italy), aimed at a broader category of returning workers with either high academic qualifications or managerial experience. The regime under article 16 offered income tax reductions of 50 per cent, later increased to 70 per cent by subsequent reforms, and was initially applicable for five years, with extensions of up to ten years in cases of dependent children, home ownership, or relocation to the South (Gazzetta Ufficiale 2015).

The 2017 *Legge di Bilancio* (budget law) 2017 consolidated and simplified these provisions by making the regime more accessible to self-employed individuals and entrepreneurs. By 2019, the *Decreto Crescita* (growth decree) (D.L. n. 34) art. five further enhanced the scheme, raising the tax exemption from 50 to 7 per cent and again to 90 per cent for those moving to southern Italy (Gazzetta Ufficiale 2019). At the same time, the minimum required period of residency abroad was reduced, and other bureaucratic barriers were relaxed (Bassetto & Ippedico 2023). Data from the Italian Revenue Agency and ISTAT show that from 2017 to 2021, the regime supported the return of approximately 24,000 individuals, with a disproportionate number choosing to settle in northern regions despite the greater fiscal advantages offered in the South (ISTAT 2025).

In the wake of growing concerns over cost-effectiveness and tax equity, *Decreto Legislativo* n. 209, published in the *Gazzetta Ufficiale* (Official Journal of the Italian Republic) on December 29 2023, restructured the regime beginning with the 2024 fiscal

year (Gazzetta Ufficiale 2023). Under the revised framework, eligibility was restricted to individuals with demonstrable “high specialisation” in strategic sectors, including STEM disciplines and research. The tax exemption was lowered to 50 per cent for five years, extendable to seven years under specific conditions, with the 90 per cent rate reserved exclusively for university professors and researchers. The reform was explicitly motivated by fiscal sustainability concerns, as the previous version of the regime was estimated to cost the state approximately €1.3 billion annually (Portale Agenzia Entrate 2025).

At the time of writing, *Proposta di Legge* (legislative proposal)n. 1439, submitted on 29 September 2023, is under review by the *I Commissione Affari Costituzionali* (First Committee on Constitutional Affairs). This legislative proposal aims to extend and simplify the current regime by reducing bureaucratic hurdles and broadening eligibility for young professionals and so-called “*Italici*,” persons of Italian descent living abroad (Camera dei deputati 2023). The proposal explicitly links talent attraction policies to demographic decline and the need to revitalise depopulated territories, particularly in southern and inner areas of the country.

These legislative tools represent Italy’s primary strategy to reverse the loss of human capital. However, criticisms remain about their selective scope and long-term impact on actual reintegration into the Italian labour market.

3.1.2 Regional development

In addition to fiscal tools, the second pillar of policy focuses on tackling the geographic push factors, particularly the socio-economic imbalance between northern and southern Italy. Italy has introduced territorial development policies to address the regional imbalances closely linked to brain drain patterns.

A defining example of this strategy is the *Resto al Sud* (Stay in the South) program, launched in 2017 and managed by Invitalia, the national development agency. Invitalia and Italiacamp conducted an impact evaluation of the program covering 2018–2021. The program was designed to support the creation and development of entrepreneurial initiatives to promote economic and social growth in areas of the country characterised by significant youth unemployment, demographic decline, a high

rate of emigration, and scarce development of innovative economic sectors (Invitalia 2021).

The incentive targets individuals aged between 18 and 55 who intend to start a new business or have already established one after 21 June 2017. Its geographical scope involves the eight regions of the *Mezzogiorno* (Abruzzo, Basilicata, Campania, Calabria, Molise, Puglia, Sardinia, and Sicily), the earthquake-affected areas of Central Italy (Lazio, Marche, and Umbria), and the minor islands. The program provides grants and subsidised loans to cover up to 100% of eligible costs, including investments and working capital. Applications are submitted exclusively online and are evaluated based on chronological order, without ranking. The program also guarantees free consultation and assistance for refining business projects through a network of accredited entities. Invitalia, as the managing body, handles the technical and administrative tasks related to application review, grant disbursement, and monitoring. Subsidised loans are provided by banks adhering to an agreement with Invitalia (Invitalia 2021).

Complementing this effort, the Development and *Fondo Sviluppo e Coesione* (Development and Cohesion Fund, FSC) allocates long-term capital to underdeveloped regions for strategic investments in transport, education, digital infrastructure, and health. For the 2021–2027 period, €32.4 billion has been earmarked, with a majority dedicated to Southern Italy to address long-term disparities (Gazzetta Ufficiale 2023).

The government established Special Economic Zones (ZES) across the South to further stimulate private investment and regional competitiveness. These zones provide firms with streamlined administrative processes, infrastructure investments, and tax incentives. In 2023, €630 million was allocated to support ZES infrastructure through the EU Recovery Fund (Intelligence fDi 2023). These areas are particularly aimed at attracting foreign and domestic investment in logistics, manufacturing, and innovation.

On a more localised scale, the *Strategia Nazionale per le Aree Interne* (National Strategy for Inner Areas, SNAI) supports fragile and remote territories through integrated development plans. These plans focus on improving access to education, healthcare, and mobility while encouraging sustainable local economies and small-scale entrepreneurship (OECD 2023).

In parallel, infrastructure improvements, such as the €6 billion high-speed rail line between Naples and Bari, are expected to significantly reduce travel time and increase interregional connectivity, fostering labour market integration and investment flows between the South and more industrialised areas (Segreti 2025).

During the COVID-19 pandemic, the grassroots initiative South Working emerged as a complementary policy vision (Bisello & Litardi 2024). It promotes remote work as a means of redistributing human capital geographically, encouraging professionals, especially those originally from the South, to continue working for northern or international employers while living in southern Italy. While South Working is not institutionalised as a state program, it has influenced several legislative proposals between 2021 and 2023, including draft laws suggesting tax deductions for companies hiring remote workers based in the South and subsidies for establishing co-working spaces and digital hubs in depopulated municipalities (Burke 2020). Despite its limited formal status, South Working has contributed to broader political discourse on reversing “south-north” migration patterns and leveraging digital technologies to reduce regional economic disparities (Bisello & Litardi 2024).

These initiatives represent Italy’s efforts to use regional development and flexible work models to counter migration from the South.

3.1.3 The PNRR funded by the EU Strategic Investments

Italy's most substantial structural policy framework is the *Piano Nazionale di Ripresa e Resilienza* (National Recovery and Resilience Plan, PNRR), financed through the European Union’s NextGenerationEU instrument (MEF, n.d.). From a human capital perspective, structural investments in education and labour systems aim to increase the expected returns to remaining in the domestic economy, particularly for young, high-skilled workers vulnerable to emigration (Governo 2023).

The PNRR allocates €191.5 billion for economic recovery and modernisation, with two of its six core missions directly relevant to brain drain mitigation. Mission 4, titled “Education and Research,” dedicates approximately €19.44 billion to expanding early childhood education in underserved areas, renovating 20% of school infrastructure, promoting STEM education, and internationalising higher education

(MUR 2024). Competitive doctoral scholarships and universities complement these actions, such as enterprise collaborations to increase domestic research capacity and innovation retention (MEF n.d.).

Mission 5, “Inclusion and Cohesion,” channels €8.63 billion toward active labour market policies, family services, and social infrastructure, particularly targeting not in Education, Employment, or Training (NEETs) and peripheral populations (European Commission n.d.). Approximately 40.8% of PNRR funds have been allocated to Southern regions, explicitly addressing the geographic inequalities that amplify skilled emigration (We Build Value 2024).

Although the PNRR does not directly frame brain drain as a target metric, its design touches on many root causes, including labour market segmentation, underinvestment in public services, and regional disparities. However, successful implementation remains a critical challenge. As of late 2024, project execution faces delays and administrative fragmentation, especially at the municipal level (MUR 2024).

3.1.4 Non-EU High Skilled Workers’ migration

In the context of broader European labour mobility, Italy is subject to several supranational legal instruments designed to facilitate the entry of third-country nationals with high qualifications. Chief among these is the EU Blue Card Directive, established under Directive 2009/50/EC and updated by Directive (EU) 2021/1883, which was transposed into Italian law through *Decreto Legislativo* n. 108/2012 (European Commission n.d.). The Blue Card is intended to attract highly qualified third-country nationals by granting them residence and work permits, provided they hold a valid job offer for at least one year and a salary no less than 1.5 times the national average (Vialto Partners 2024).

Despite these favourable legal conditions, Italy remains among the lowest issuers of EU Blue Cards in the European Union. Eurostat data shows Italy issued only 1,394 Blue Cards in 2021, starkly contrasting Germany, which issued over 30,000 in the same year (European Commission n.d.). This discrepancy underscores persistent structural barriers within Italy’s labour and immigration framework.

The limited uptake is attributed to several interlocking factors. First, Italy's bureaucratic process for Blue Card issuance is often fragmented and slow, with no centralised digital platform for streamlined processing (Italian Visa 2025). Additionally, recognising foreign qualifications and credentials remains a lengthy and inconsistent process, deterring many skilled workers from completing applications (CIMEA n.d.). The rigid application requirements and lack of employer support also contribute to Italy's relative unattractiveness compared to other EU states, which offer faster pathways and better integration services.

Consequently, while the EU Blue Card represents a supranational opportunity to counteract skill shortages and boost innovation capacity, Italy's current institutional design limits its effectiveness. Without substantial administrative reform and greater alignment between immigration, labour, and education policies, the Blue Card scheme in Italy will likely remain underutilised as a tool to attract foreign talent (Italian Visa, 2025).

3.2 Assessment of policy instruments in place

3.2.1 Fiscal incentive

Italy's fiscal incentive regime for return migration, presented in section 3.1.1, notably the Special Regime for Workers Returning to Italy, has offered substantial nominal benefits, particularly to higher-income individuals. However, its capacity to meaningfully alter migration behaviour among the broader pool of skilled Italians abroad remains limited. While significant in financial terms, initially offering up to 90% tax exemptions for returnees to the South, the scheme has failed to address deeper structural disincentives such as job insecurity, wage stagnation, and limited career progression. These persistent frictions undermine the utility of returning and reduce the scheme's marginal effectiveness across the broader population of expatriated professionals (Bassetto & Ippedico 2023).

Between 2020 and 2022, administrative data indicate that only 5,620 individuals utilised the regime in Southern Italy, compared to over 17,000 in the North and Centre, highlighting a regional imbalance (Agenzia delle Entrate 2023). Additionally, approximately 40% of applicants who initiated the return process between 2019 and

2022 did not complete it, often due to barriers like job matching difficulties, delays in recognising professional qualifications, and instability in public sector hiring (Bassetto & Ippedico 2023).

A key empirical evaluation of Italy's fiscal strategy comes from Bassetto and Ippedico (2023), who assess the 2010 *Controesodo* (reverse exodus) scheme, the forerunner of the *Regime degli Impatriati* (Inbound Workers Regime), using administrative microdata and robust econometric methods, including Difference-in-Differences and Triple Differences (Bassetto & Ippedico 2023). Their analysis finds that the scheme increased return migration by 27% among eligible young, high-skilled Italians abroad, especially those in nearby countries like Germany, the UK, and Switzerland. The effect was not limited to the top of the earnings distribution. Still, it was visible across various wage tiers, suggesting that the incentive attracted a broader cross-section of expatriate talent. Bassetto and Ippedico also estimated the elasticity of return migration to the net-of-tax rate at 0.7, a notably high responsiveness. Significantly, the individuals induced to return were positively selected, meaning they tended to come from the upper half of the wage distribution abroad, which enhances the long-term fiscal viability of the policy. Their cost-benefit analysis concluded that the scheme was fiscally neutral, i.e., future tax revenues from returnees offset the initial foregone taxes, primarily because the program targeted young, economically productive individuals with high lifetime contribution potential. Bassetto and Ippedico also quantify a multiplier effect associated with the returnees. For every €1 in foregone tax revenue under the scheme, the Italian state recovered approximately €1.05 in fiscal returns within the first five years through direct income taxation alone, excluding broader indirect effects such as increased consumption, productivity spillovers, and regional investment. When including potential spillover, such as firm creation, academic collaboration, and family reunification, the total multiplier is estimated to be as high as 1.3, indicating a meaningful aggregate return on public investment in the program (Bassetto and Ippedico 2023).

These findings underline that well-targeted fiscal incentives can be economically viable tools for selective talent reallocation (Lehmann & Kluve 2010).

However, subsequent expansions of the regime in 2015 and 2019 broadened eligibility, potentially compromising fiscal sustainability (Bassetto & Ippedico 2023). The 2023 revision *Decreto Legislativo* 209/2023 introduced more selective criteria, targeting workers with "specific skills of economic interest" and reducing tax exemptions to a flat 50%, or 60% in the South. While this improved fiscal sustainability, cutting projected annual costs from over €1.3 billion to approximately €600 million, it narrowed the scheme's appeal, excluding groups such as early-career researchers and self-employed digital workers (Agenzia delle Entrate 2023).

Importantly, fiscal incentives alone are poorly equipped to internalise the non-monetary barriers that define the return decision. As discussed in Chapter 1, these include bureaucratic inefficiency, occupational downgrading, and professional mismatch. Many expatriates, particularly those who emigrated in their twenties or early thirties, now “concretise” life abroad, developing durable career networks, accumulating institutional trust, and often establishing binational families or property assets. These sunk investments increase the opportunity cost of return and reinforce behavioural lock-in effects. Even when the net monetary benefit of return is positive, the psychological and institutional risks involved in reintegration, especially into rigid, informal, or non-meritocratic labour markets, remain deterrents (Lehmann & Kluge 2010).

Thus, while the regime addresses one side of the utility equation, income, it does not alter the structural environment that underpins labour mobility decisions. From a microeconomic evaluation standpoint, it acts as a second-best correction to a deeper market failure: the inefficient allocation of skilled labour across borders due to persistent institutional and regional frictions. Ultimately, the regime is constrained by two key externalities it cannot internalise: first, the institutional disillusionment that often motivates emigration in the first place, and second, the embeddedness and life-stage stability expatriates have achieved abroad (Bassetto and Ippedico 2023). Without coordinated reforms in academic recruitment, labour market flexibility, and regional development, the behavioural effects of these fiscal tools will remain marginal, benefiting only a narrow segment of returnees with the highest international optionality.

3.2.2 Regional development

The assessment of Italy's regional development policies, such as those described in section 3.1.2, indicates that while they generate local economic activity, their impact on significantly reversing high-skilled brain drain remains limited.

Analysing the effectiveness of the *Resto al Sud* program, drawing on the 2018-2021 impact evaluation, reveals both positive outcomes and key limitations regarding highly skilled emigration. Key results highlight the financing of 7,589 businesses, with 7,366 new creations, and the creation of more than 28,166 jobs. It activated 525.6 million euros in investments, including 313.8 million euros in bank financing spurred by 390.5 million euros in public contributions. Businesses financed by *Resto al Sud* show a high survival rate of 97% at four years, significantly higher than the national average. The program generated a total economic impact of 993 million euros, with a multiplier effect of 2.54 euros generated per euro of public investment. Notably, the evaluation stated these results were achieved at "cost zero" for the state budget as of the evaluation period, as the public investment was repaid through fiscal revenue and reduced unemployment spending, amounting to a payback of 407.7 million euros or 104% of the public investment. The program is also credited with "favouring the return and permanence in the territories of origin", with survey data showing 83.5% of beneficiaries remained in their region, 9% returned from another Italian region, and 2.1% returned from abroad to benefit from the incentive (Invitalia 2021).

However, a critical analysis of the program's impact on high-skilled brain drain points to significant limitations. Empirical data from 2023 indicates that most projects funded under *Resto al Sud* are concentrated in low-capital, low-skill sectors such as hospitality, local services, and retail. Invitalia reports suggest that less than 7% of funded proposals between 2018 and 2022 involved technology, scientific services, or innovation-related activities (Invitalia 2023). This sectoral composition reflects a mismatch between the program's impact and the professional trajectories of internationally mobile, highly skilled graduates. While *Resto al Sud* successfully stimulates microenterprise growth among local youth with limited labour mobility, its direct contribution to anchoring or reabsorbing high-skilled individuals in knowledge-intensive sectors appears marginal. From a microeconomic perspective, the

interventions reduce entry costs for local entrepreneurship but do not significantly influence the deeper wage-productivity equilibrium or long-term professional development incentives crucial for attracting and retaining high-skilled talent (Invitalia 2023).

While an informal movement, the South Working initiative has contributed to raising awareness about geographic labour imbalances and the potential of remote work. It has influenced political discourse and several legislative proposals between 2021 and 2023 (Bisello & Litardi 2024). However, its structural impact as a solution to brain drain remains limited. This is primarily due to the lack of coordinated public investment in digital infrastructure, particularly the significant lag in broadband penetration in the South, below 70% in several regions, and the absence of national legislation to formally support it (Burke 2020). As a result, its effects are confined mainly to middle-class professionals already employed by northern or foreign firms who can work remotely.

From a broader microeconomic and allocative efficiency perspective, these regional policies alter the short-run utility of location choices, but do not fundamentally change their long-run labour market value for highly skilled individuals. High-skilled individuals, especially those with global mobility, optimise based on expected career returns, sectoral alignment, and institutional trust. In the absence of dynamic clusters in research, advanced services, or tech in the South, the opportunity cost of returning or remaining remains high. Evaluated on allocative efficiency grounds, the current regional programs generate local welfare gains but do not correct the broader misallocation of human capital across regions. Without a parallel industrial strategy to raise productivity and demand for skilled labour in the South, these programs risk becoming a palliative rather than a transformative (OECD 2023).

In sum, while regional development initiatives like *Resto al Sud* have demonstrated significant positive results in terms of job creation, business survival, economic return, and have favoured permanence and some return, their contribution to reversing high-skilled emigration remains marginal. Their limited targeting of innovation sectors, the absence of sustained institutional backing for mobility initiatives like South Working, and the failure to integrate with broader labour market reforms

constrain their long-term impact on anchoring highly mobile talent (Bisello & Litardi 2024).

3.2.3 Attracting High-Skilled Non-EU Workers

An assessment of Italy's policies aimed at attracting high-skilled non-EU workers, as described in Section 3.1.4, reveals that despite legal frameworks such as the EU Blue Card, Single Permit, and Long-Term Residence directives, their effectiveness remains significantly limited. Italy's uptake of these instruments is notably low compared to other European nations.

Empirical data highlights this underutilisation: in 2021, Italy issued fewer than 2,000 Blue Cards, a stark contrast to the over 30,000 issued by Germany in the same year. This disparity persists despite Italy facing similar demographic pressures and sectoral labour shortages (European Commission n.d.).

Several structural and administrative factors contribute to this limited success. Italy's system largely remains employer-driven, requiring specific job offers that meet stringent salary and contract duration thresholds. This design systematically excludes categories of high-skilled professionals, such as freelancers, entrepreneurs, and researchers, who may not have a pre-arranged, long-term employment contract upon arrival.

Furthermore, the bureaucratic burden of obtaining permits, having foreign credentials recognised, and registering residency remains a significant barrier. The process for validating foreign academic and professional qualifications, known as the declaration of value - *dichiarazione di valore*, is often perceived as opaque, slow, and decentralised. Italy also lacks streamlined mechanisms for non-EU professionals seeking to integrate into regulated professions such as medicine, engineering, or education. These frictions raise the transaction costs of migrating to Italy and can lower the expected utility compared to destinations with more accessible systems. (Italian Visa 2025).

From an efficiency perspective, this operational model fails to effectively allocate global talent to high-productivity sectors facing chronic shortages within Italy,

such as ICT, engineering, and biomedical research. The legal frameworks exist on paper, but the practical implementation creates an allocative inefficiency in the labour market. In economic terms, Italy has established an access regime. Still, it has not sufficiently reduced the real "price" (in terms of time, effort, and uncertainty) of entry, thus deterring many of the high-skilled migrants it theoretically seeks to attract (Italian Visa, 2025).

These issues are interconnected with the broader problem of Italy's demand-driven migration framework, which will be discussed in section 3.3.1. This framework is fundamentally misaligned with the increasingly supply-driven nature of high-skilled global mobility. While well-suited for regulating certain labour inflows, this rigid system struggles to attract human capital as an investment.

Consequently, despite the formal adoption of EU directives and national legal instruments aimed at high-skilled non-EU migration, Italy remains structurally disadvantaged in the global talent competition. As currently implemented, the policies do not adequately address the practical barriers and the fundamental mismatch between the system's design and the mobility patterns of highly skilled professionals.

3.3 Structural shortcomings undermining policy success

3.3.1 Demand-driven logic

At the core of Italy's policy failure to effectively address brain drain lies a structural mismatch between its migration governance model and the dynamics of high-skilled labour mobility. Italy operates predominantly under a demand-driven migration framework, whereby the admission and legal status of foreign professionals, or the reintegration of returning nationals, hinge primarily on employer sponsorship, sector-specific quotas, and administrative authorisation. This model is embodied in Legislative Decree No. 286/1998 (Testo Unico sull'Immigrazione), which governs labour immigration through mechanisms such as the *Decreto Flussi* (Flussi Decree) and labour market tests as outlined in Article 22, which requires employers to demonstrate that no suitable Italian or EU candidate is available for the role (Normattiva, 2025).

From an economic perspective, demand-driven systems assume that labour markets are sufficiently efficient and flexible for employers to act as gatekeepers of skill needs. As highlighted by Czaika and Parsons, this logic may work in theory for managing seasonal or low-skilled flows in controlled numbers. However, it is inherently misaligned with high-skilled mobility, which is increasingly supply-driven. Globally mobile professionals invest in human capital, often migrate independently of a specific job offer, and choose destinations based on long-term returns to education, professional development, and life-course planning. They are attracted by immediate employment and broader 'immigration packages', including living standards, quality of services, professional networks, and transparent, meritocratic systems (Czaika & Parsons, 2017).

Czaika and Parsons' work provides empirical support for this distinction, finding that points-based systems, which are characteristic of supply-driven models, are significantly more effective in attracting and selecting high-skilled migrants compared to demand-led policies requiring a job offer, labour market tests, or working in shortage-listed occupations. While financial incentives can be effective, particularly in demand-driven systems, the core mechanism of requiring a job offer and conducting labour market assessments can deter the absolute inflow of high-skilled migrants. Shortage lists can similarly reduce the overall selection of skills (Czaika & Parsons, 2017). This research suggests that systems that assess individuals' human capital independently of an immediate employer demand are better suited to attracting many highly skilled workers over the longer term.

Italy's employer-contingent model imposes constraints on domestic returnees and non-EU high-skilled workers. The *Decreto Flussi* allocates a pre-determined number of permits annually, often misaligned with real-time labour shortages, acting as an artificial barrier. In 2023, only 7,000 permits were issued for non-seasonal employment across all sectors, representing less than 0.02% of the national workforce, despite over 110,000 unfilled positions in the information and communication technology (ICT) and engineering sectors alone (Eurostat 2025). While intended to protect domestic labour, the labour market test under Article 22 functions as a frictional cost, delaying recruitment and discouraging hiring high-skilled foreign talent, even in

undersupplied sectors. From a microeconomic standpoint, this introduces a negative externality by distorting employer behaviour.

The economic implications of this rigid, demand-driven model are significant. In a global environment where high-skilled labour mobility is dynamic and competitive, Italy's system is better suited to regulating inflows than actively attracting human capital as an investment. It introduces a negative externality by distorting employer behaviour and discouraging hiring high-skilled foreign talent, even in undersupplied sectors. This results in a negative selection bias, where those most capable of navigating rigid legal pathways are not necessarily those with the highest productivity potential. Meanwhile, highly skilled individuals who might otherwise relocate or return, such as researchers, entrepreneurs, and digital freelancers, are systematically excluded or discouraged by procedural rigidity (Italian Visa 2025).

At the macroeconomic level, this structure prevents Italy from promptly correcting real-time skill shortages, reducing total factor productivity, and weakening sectoral competitiveness. The state forfeits potential positive fiscal externalities from tax contributions, entrepreneurial activity, and consumption by disincentivising return migration and hindering the attraction of skilled non-nationals (OECD 2023). This contributes to a persistent brain drain equilibrium, where highly educated Italians are pushed toward more dynamic labour markets abroad while domestic firms remain constrained by institutional hiring bottlenecks.

Italy's demand-driven migration logic reflects a static conception of labour needs, less suited to a 21st-century knowledge economy than a system that views high-skilled labour as an investment. Even well-funded or generous policies will be structurally undercut if the system prioritises employer sponsorship and numerical quotas over talent recognition and mobility facilitation (Italian Visa 2025). Italy will remain structurally disadvantaged in the global talent competition without shifting toward a more supply-oriented framework that acknowledges labour as an investment rather than merely a cost.

3.4 How to improve talent retention

The analysis so far illustrated how Italy's existing brain drain policies are constrained by a structural misalignment between policy instruments and the institutional and economic conditions in which they operate. As a result, even generous fiscal incentives or regionally targeted programs fail to generate lasting effects. A more coherent policy direction may be found in aligning Italy's approach with international best practices that reflect the realities of high-skilled labour mobility today.

One clear direction, already adopted by several OECD countries, is the transition from demand-driven to supply-driven migration models (Lehmann & Kluve 2010). Countries like Canada and Australia offer points-based entry systems that assess and select migrants based on their individual human capital, education level, work experience, and language skills, independently of employer sponsorship (Czaika & Parsons 2017). This model better reflects the autonomous and strategic nature of high-skilled migration and helps mitigate the inefficiencies created by rigid employer-contingent pathways. A similar approach could broaden Italy's talent pool and reduce selection bias tied to existing labour market networks.

Equally critical is the recognition of qualifications. Streamlining credential recognition procedures for non-EU degrees would facilitate smoother labour market entry for skilled professionals. This could be particularly impactful in regulated professions, such as healthcare, engineering, and education, where bureaucratic delays currently serve as significant barriers to integration. Initiatives such as expanding bilateral agreements for diploma equivalence or adopting EU-wide frameworks more fully could ease this bottleneck (CIMEA n.d.).

Taxation policy also requires closer alignment with mobility goals. While Italy has experimented with income tax exemptions for returnees, further refinement could consider the role of double taxation agreements and the long-term predictability of tax treatment for internationally mobile workers (Bassetto & Ippedico 2023).

From a procedural standpoint, simplifying visa and residency pathways, particularly for high-skilled workers without permanent contracts, would reduce the non-monetary costs of relocation. This includes revisiting the salary thresholds and

employer-based limitations of the EU Blue Card, which has consistently underperformed relative to other member states in Italy (Vialto Partners 2024).

It is worth noting that Italy has already begun to move in this direction. The ISTAT 2023 report emphasises youth empowerment and the need to remove structural vulnerabilities in labour market access, education, and territorial inequality. Though not framed as anti-brain drain policies per se, these priorities represent a shift toward enabling conditions for talent retention (ISTAT 2023).

More broadly, the Italian policy debate must engage with the role of immigration as a demographic necessity and an economic asset. While public discourse often frames migrants as competitors for low-skilled jobs or beneficiaries of welfare systems, empirical research consistently shows that high-skilled migration has negligible effects on native employment and wages. Indeed, when managed efficiently, it contributes positively to fiscal sustainability, innovation capacity, and aggregate demand. A supply-driven migration model would thus not only address the outflow of Italian talent but also Italy's difficulty in attracting skilled non-nationals (OECD 2023).

Ultimately, the path forward does not lie in isolated incentives but in creating the institutional conditions that make Italy a credible destination for long-term career development. Recognising this structural reality may be the first step toward turning mobility from a one-way loss into a circular and productive exchange of knowledge and skills.

Conclusion

Chapter 3 critically assessed Italy's policy responses to brain drain, including fiscal incentives, regional development programs such as *Resto al Sud*, EU-funded PNRR investments, and frameworks for non-EU high-skilled workers. The analysis reveals significant limitations: fiscal schemes have limited broad impact, regional programs primarily benefit low-skill sectors despite creating jobs, PNRR faces implementation delays, and measures for non-EU workers are hindered by slow bureaucracy. A core structural shortcoming is Italy's predominant demand-driven migration framework, which is misaligned with the supply-driven nature of global high-skilled mobility. This rigidity undermines talent attraction and retention efforts.

While some policies signal a necessary direction, effective change requires broader systemic reforms to address institutional trust, meritocracy, and dynamic career pathways.

Conclusion

In conclusion, the thesis has explored the pressing issue of Italy's brain drain, examining its primary drivers and consequences, and evaluating the effectiveness of national policies in mitigating it. The findings underscore the pressing need for action. Italy is experiencing a constant and largely irreversible outflow of highly skilled professionals, primarily from sectors vital to national development, including STEM, healthcare, and academia.

Unlike other forms of temporary mobility or 'brain circulation,' the talent migration in Italy is predominantly permanent, leading to a systemic depletion of human capital.

The first chapter identified the structural push factors that compel young and educated Italians to leave: chronic underemployment, wage stagnation, limited meritocracy, and institutional inefficiencies. These are exacerbated by regional disparities, rigid labour markets, and an academic system undermined by clientelism. In contrast, pull factors such as merit-based career systems, higher wages, better research infrastructure, and quality of life abroad incentivise emigration. The decision to leave Italy is rarely driven by individual ambition alone but rather by a rational evaluation of opportunity structures.

The second chapter detailed the far-reaching consequences of this exodus. Italy faces significant fiscal losses from public investment in education that yields returns abroad. These sectoral disruptions leave critical services understaffed and diminished innovation capacity, evidenced by falling productivity and patent filings. Brain drain also worsens regional inequality, accelerates demographic decline, and fosters civic disengagement, especially among younger generations who perceive national institutions as unresponsive to merit or reform.

The third chapter critically evaluated the policies designed to reverse or mitigate this trend. While measures like tax incentives for returnees, regional development programs, and the EU-funded PNRR provide necessary signals, they are largely insufficient. These policies have structural limitations, including a lack of coordination, demand-driven logic that is poorly suited to today's globalised and supply-driven talent markets, and weak institutional frameworks that fail to support long-term reintegration or competitiveness.

The thesis is relevant for understanding the Italian economy's stagnation and contributing to international debates on talent mobility and economic resilience. Italy's inability to retain or attract talent places its national competitiveness at a distinct disadvantage within the European and global economies and has with long-term implications. As Italy loses its best, the situation worsens because the host countries gain the productivity of the Italian professionals and the soft power of the global mobile-educated diaspora.

The central message of this thesis is clear: brain drain is not just a symptom of economic decline but a structural cause. Short-term incentives are essential but insufficient; long-term change requires embedding them within broader systemic reforms that address the root causes of brain drain. Italy risks becoming trapped in a cycle of demographic contraction and economic insignificance unless it makes a serious effort to restore trust in institutions, reward merit, and invest in future-oriented sectors. Reversing brain drain means making Italy a place worth returning to, not just sentimentally, but rationally.

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