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Sustainable Development in the EU: Ageing Population and Migration

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Abstract

This thesis explores how the EU can promote sustainable economic and social development amid an aging population. The research focuses on three main issues: labor shortages, pension pressures, and the increased demand for public services. The thesis posits that, while there are limitations, migration can alleviate these problems to some extent. A comparison of Germany and Italy reveals significant differences in their immigrant integration policies. Germany encourages highly skilled immigrants and has a more comprehensive integration system that is more effective. Conversely, Italy's policies are more fragmented, and many immigrants are short-term laborers who have difficulty integrating into local society. This has a limited effect on alleviating the impacts of an aging society. Based on this comparison, and to maximize immigration's role in mitigating the impacts of an aging society, the thesis offers policy recommendations applicable at the EU level. It is hoped that these recommendations will help establish a more forward-looking, coordinated strategy to promote the EU's long-term sustainable development in the context of aging. Finally, the study emphasizes that, while migration is an important tool for addressing aging, it should be integrated into broader demographic strategies and structural reforms. These strategies should be implemented in conjunction with measures such as delaying retirement and increasing female labor force participation.

Key Word: the EU; Population ageing; Sustainable development; Migration policy; Germany and Italy comparison

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1. Introduction

The EU is facing a huge change in its demographic structure, mainly due to the aging of the population. According to Eurostat's demographic report, from 2019 to 2050, the number of elderly people in the 27 EU countries is expected to more than double, an increase of 113.9%. The main changes in the future will be a decline in birth rates and an increase in life expectancy, which also means that the proportion of the EU's working-age population is decreasing. This pattern will continue in the coming decades as the post-war baby boomers fully reach retirement age (Eurostat, 2020). Population aging is generally believed to weaken economic growth potential: a decrease in labor supply and a lack of improvement in labor productivity may drag down overall economic growth and innovation momentum in the long run (Bodnár & Nerlich, 2022). Due to the relative reduction in the working-age workforce, the dependency ratio has risen sharply, meaning that fewer workers have to support more retirees, and the pension and social security systems are facing heavy pressure (Pinkus & Ruer, 2025). On the other hand, medical and long-term care expenses in an aging society are also rising rapidly. The increase in chronic diseases and co-existence of multiple diseases in the elderly population has increased the financial burden on the medical system. The demand for professional nursing and care services has surged, but it is difficult to meet due to labor shortages. Studies predict that the manpower gap in the EU medical and nursing fields will expand from 1.6 million in 2013 to about 4.1 million in 2030 (Michel, J. P., & Ecartot, F., 2020). This also reflects that the shortage of nursing staff has become a problem that needs to be solved urgently in the context of aging.

In this context, “migration”¹ is seen as a possible intervention mechanism to mitigate the effects of aging (Marois, Bélanger, & Lutz, 2020). Due to a long period of low fertility and weak natural population growth, Europe's population growth in recent years has been highly dependent on migrant inflows. Data show that migrants will represent about 80% of the EU's population between 2000 and 2018, compared to only 32% in North America during the same period. It can be said that maintaining a certain level of net migration can compensate for the shrinking of the labor force size in Europe. At the same time, immigrant groups tend to be younger and have a higher percentage of the population of working age than the native population. Therefore, the influx of new immigrants directly expands the labor force, largely offsetting the natural decline of the native labor force (Peri, 2020). More importantly, after entering the labor market, these working-age migrants generate output and pay taxes and social security contributions through their employment, injecting a new source of revenue into pension funds and public finances and alleviating to some extent the financial pressure on the pension system (Peri, 2011). This positive effect of young migrants

¹ In this paper, “migration” refers specifically to immigration from non-EU countries into EU member states, understood as the movement of people across borders with the intention of settling, working, or residing long-term. This definition aligns with the concept of “immigration” as a demographic and policy tool to address the challenges of population ageing.

can be seen as a "demographic dividend" for Europe to address the challenges of aging, in other words, migrants provide an opportunity for Europe to mitigate the negative effects of aging - imported migrants can slow down the rate of population aging and provide the labor and services needed by an aging society (Peri, 2011). However, migration is not a panacea. Research suggests that the number of immigrants needed to fully offset the effects of population aging on the dependency ratio in Europe is unattainably high, meaning that immigration alone cannot fundamentally reverse aging trends (Marois, Bélanger, & Lutz, 2020). Moreover, over-reliance on high levels of immigration is not a long-term solution, and immigration is not a substitute for domestic policies such as increasing the participation rate of natives and delaying the retirement age. Therefore, from a policy perspective, immigration should be integrated into a comprehensive population and labor strategy: moderate inflows and integration of migrants, combined with measures to promote fuller participation of the native workforce and to increase productivity, can be an important way to mitigate the impact of ageing in the EU and to maintain sustainable economic development (Pinkus & Ruer, 2025). To address the challenges posed by an aging population, immigrant integration is increasingly seen as a key strategy that offers the potential to alleviate labor shortages and support economic growth (OECD, 2021). However, the effectiveness of immigrant integration policies varies significantly across EU Member States, largely due to differences in policy design, implementation approaches, and socio-economic contexts (Migrant Integration Policy Index, 2020). Against this background, this study focuses on Germany and Italy—two of the largest economies in the EU—as case studies to examine how their migration policies influence labor markets in the context of demographic aging. The paper adopts both a case study and comparative approach to explore in depth the background, achievements, and limitations of immigration policies in Germany and Italy. It reviews existing literature on aging, labor markets, and immigrant integration to provide a theoretical foundation for the analysis. The findings aim to generate valuable insights for optimizing migration policies across EU Member States and offer concrete recommendations for promoting more inclusive and effective integration strategies.

The core research question guiding this study is: How can immigrants effectively contribute to the sustainable development of the EU's response to population ageing? The significance of this study is that it aims to provide actionable recommendations for the EU and its member states to strengthen their policy responses to population ageing through more inclusive and effective immigrant integration strategies.

2. Literature Review

In the face of declining birth rates and longer life expectancy, population aging and imbalanced labor force structure have become challenges that EU countries generally need to deal with. In response to this trend, immigration policy has become a key topic for discussion among governments and academia. Scholars have formed two

main views on whether immigration can alleviate the impact of aging on social economy: an optimistic perspective and a critical perspective. This article will sort out the core arguments of the two views and point out the policy direction pointed by the current research consensus, so as to lay a theoretical foundation for the subsequent case analysis of Germany and Italy.

Early studies have confirmed the positive role of immigration in the labor market. Card (2005) found through quasi-natural experiments that systematic immigration policies can expand local employment opportunities, and the competitive pressure generated by them has prompted low-skilled local workers to improve their productivity. This conclusion was extended in the research of Hatton and Tani (2005), who pointed out that the elastic characteristics of labor mobility within the EU make the influx of immigrants and the cross-border migration of local populations form a dynamic complementarity, thereby maintaining regional labor market equilibrium.

In recent years, research has further refined the mechanism of immigration. Börsch-Supan et al. (2014) pointed out that, in conjunction with structural reforms and education investment, immigration can delay the decline in the labor support ratio and reduce the pressure on the pension system. Xia (2016) took Finland as an example and emphasized that immigration policy plays an important role in maintaining the vitality of the urban economy when the labor gap in the capital region is becoming increasingly obvious. Immigration may alleviate the decline in the working-age population caused by aging. If immigrants are fully integrated into the labor market, they can also provide help by creating fiscal revenue (Bodnár & Nerlich, 2022). In the context of southern European countries, Vázquez Grenno (2009) showed that the continued influx of young immigrants helps to delay the aging process of the population and improve the financial situation of pensions. Gómez-Tello and Nicolini (2017) further pointed out that in some industries in Spain, immigrants with certain skills not only fill job vacancies, but also bring positive externalities of technology transfer and improved productivity. This result shows that immigrants are not just "place fillers" but more likely "drivers."

However, there are also many studies that remind us that the positive effects of immigration cannot be over-idealized. Coleman (2008) pointed out that in order to truly reverse the structural problems brought about by aging through immigration, a long-term, large-scale and continuous influx of immigrants is required, which is often difficult to achieve in reality due to political and social pressures. Serrano et al. (2011) studied the Spanish pension system and found that the fiscal contribution of immigrants exists, but it is not enough to support systemic pressure alone, proving that a single policy tool has fundamental flaws. And the policy still needs to be coordinated with measures such as delayed retirement and reform of the payment system.

In addition, the social integration problem of immigrants is equally serious. Critics further emphasize that large-scale immigration brings challenges in social integration, which in turn affects the positive role of immigration in the population economy. If immigrants cannot successfully integrate into the labor market, their potential demographic dividend will be difficult to realize, and may increase the welfare burden

of the host country (Segendorf & Theobald, 2019).

At the same time, Segendorf and Theobald (2019) pointed out that whether immigrants can truly alleviate the pressure of aging depends on the degree of employment integration of the foreign population; if a large number of immigrants fail to find an employment, public finances will not only fail to get the expected relief, but will face additional pressure. Integration challenges also include cultural and social adaptation issues. Intergenerational integration of immigrant families requires time and policy support; if integration is not good, it may cause social tension and xenophobia, thereby limiting the advancement of immigration policies. As some studies have warned, in the scenario of high immigrant inflow but low education level and low integration, the economic dependency ratio will deteriorate, increasing the burden on the original residents (Marois, Bélanger, & Lutz, 2020). This shows that in terms of the effectiveness of immigration policies, "integration" is one of the key factors that determine success or failure. At the same time, Ceobanu and Koropecj-Cox (2013) pointed out based on data analysis of 27 EU countries that public support for "alternative immigration" is not high, and policy makers who ignore this point will lead to governance difficulties. Urteaga (2008) also criticized France's immigration policy for being too short-sighted and failing to formulate comprehensive countermeasures based on the country's long-term labor demand and the stability of the welfare system.

Although the above studies present different positions and perspectives, a gradually formed academic consensus is that immigrants themselves have the potential to alleviate the imbalance of the labor structure, and the key lies in how to formulate and implement effective immigration policies. This means that immigration policies should be more structured and long-term, rather than short-term patches. In order to improve immigration policies, strengthening the human capital assessment mechanism and improving the matching degree between immigrants' skill structure and the domestic industrial structure are also one of the key points.

Therefore, based on the above literature review, this paper emphasizes that immigration is not only a necessary variable to hedge against population aging, but also a key force for sustainable social and economic development. However, this requires EU countries to have a longer-term consideration of immigration, break away from the "crisis response" mentality, and maximize the positive impact of immigration in coping with the challenges of the social labor market under the background of aging by further improving immigration policies. In order to further explore the path of combining policy with reality, this article will select Germany and Italy, two EU countries at the forefront of aging pressure and with very different immigration structures, for case analysis in subsequent chapters, aiming to put forward institutional suggestions with policy operability.

3. Methodology

3.1 Case Study (Germany and Italy)

This study adopts a case study methodology to explore immigrant social integration policies in Germany and Italy and their role in addressing labor market challenges in ageing societies. And the case study methodology is particularly suitable for the topic of this study as it enables in-depth analyses of complex social phenomena in the real world (Yin, 2017). Germany and Italy, as the two largest economies in the EU, were chosen as the case study because of their significant differences in migrant integration policies. Germany is known for its well-established and structured policy system, such as the Integration Act adopted in 2016, which emphasizes language training and labor market access (BAMF, 2021). In contrast, Italy's immigrant integration policies are more fragmented and have significant regional variations, which are closely linked to its geographical location as the main point of entry for migrants into the EU (Colombo, 2020). The case study approach allows for a detailed analysis of policy design, implementation and effectiveness, thus revealing the underlying mechanisms of how immigrant integration mitigates the labor market challenges of an ageing society.

3.2 Data Sources

This study uses a combination of primary and secondary data to analyze migrant integration policies and their labor market effectiveness in Germany and Italy. Primary data include government reports, policy documents and statistical data from national institutions such as the German Federal Office for Migration and Refugees (BAMF). Secondary data come from academic literature and reports from international organizations such as the OECD and Eurostat. For example, Eurostat provides demographic and labor market data, while OECD reports provide comparative analyses of migrant integration policies in EU countries. In addition, peer-reviewed journal articles and books were consulted to ensure the accuracy of the study. By combining these different data sources, the study aims to provide a comprehensive analysis of the research questions and to balance empirical evidence with theoretical insights.

3.3 Comparative Analysis Approach

In order to systematically compare German and Italian immigrant integration policies and their effectiveness in addressing labor market challenges, this study adopts a comparative analysis approach supported by empirical data, concrete evidence, and specific case examples. The analysis is structured around three key dimensions: the design of the policies, the mechanisms of implementation, and their effectiveness. Relevant statistical indicators (e.g., employment rates, labor market participation), policy documents, official government reports, and concrete examples from both

countries are utilized to substantiate the comparative findings.

Policy design is analyzed to compare the legal framework and institutional structure of migrant integration in the two countries. Implementation mechanisms focus on the practicalities of policy implementation. These include language training programmes, labor market access schemes and social integration measures. The effectiveness of implementation will be assessed through a comparison of data on employment rates, wage levels and social integration indicators. This approach provides insights into how different policy approaches produce different outcomes in similar demographic contexts. By comparing similarities and differences, the analysis provides actionable insights for optimizing integration policies in EU countries. The comparative analytical approach is particularly important in this study as it highlights best practice approaches and potential problems, providing policy makers with ideas on how to address labor market challenges in ageing societies.

4. Case Study: Germany and Italy

As two of the most populous countries in the European Union, Germany and Italy face one of the most serious challenges of population aging. According to Eurostat, the median age in 2019 will be 46.0 years in Germany and 46.7 years in Italy, both higher than the EU27 average of 43.7 years. And the old-age dependency ratio is expected to rise further by 2050, with more than two-thirds of EU member states having dependency ratios of more than 50.0%. (Eurostat, 2020).

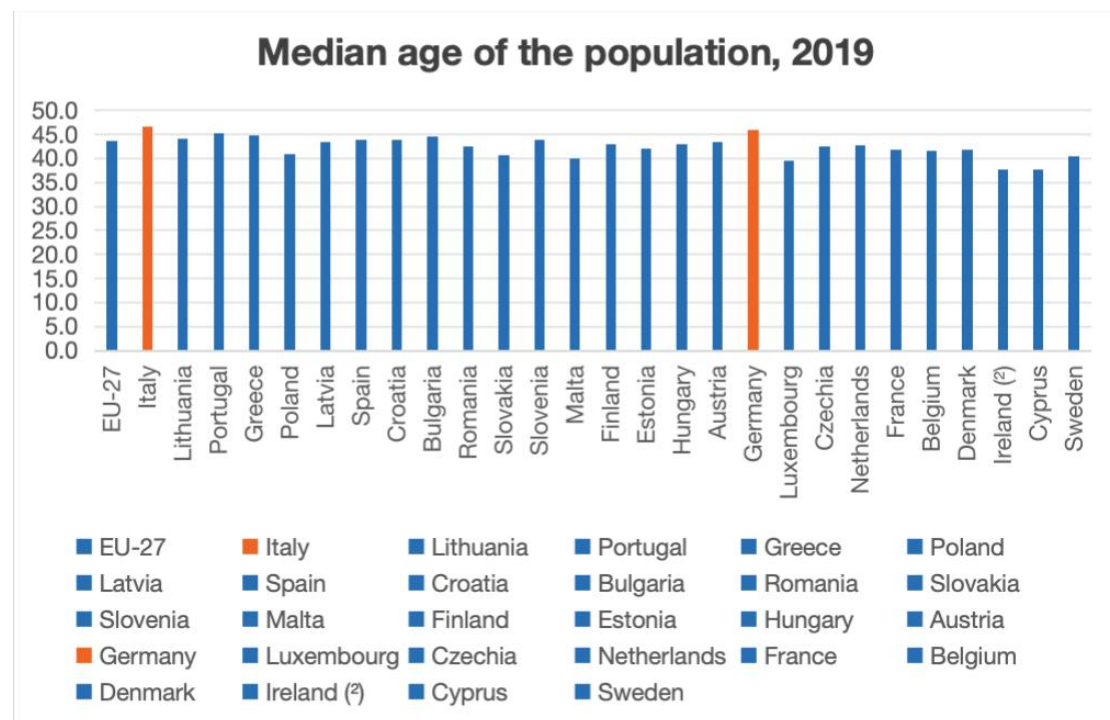


Table.1 Median age of the population in 2019

(Source: Eurostat and United Nations, Department of Economic and Social Affairs, Population Division, World Population Prospects 2019)

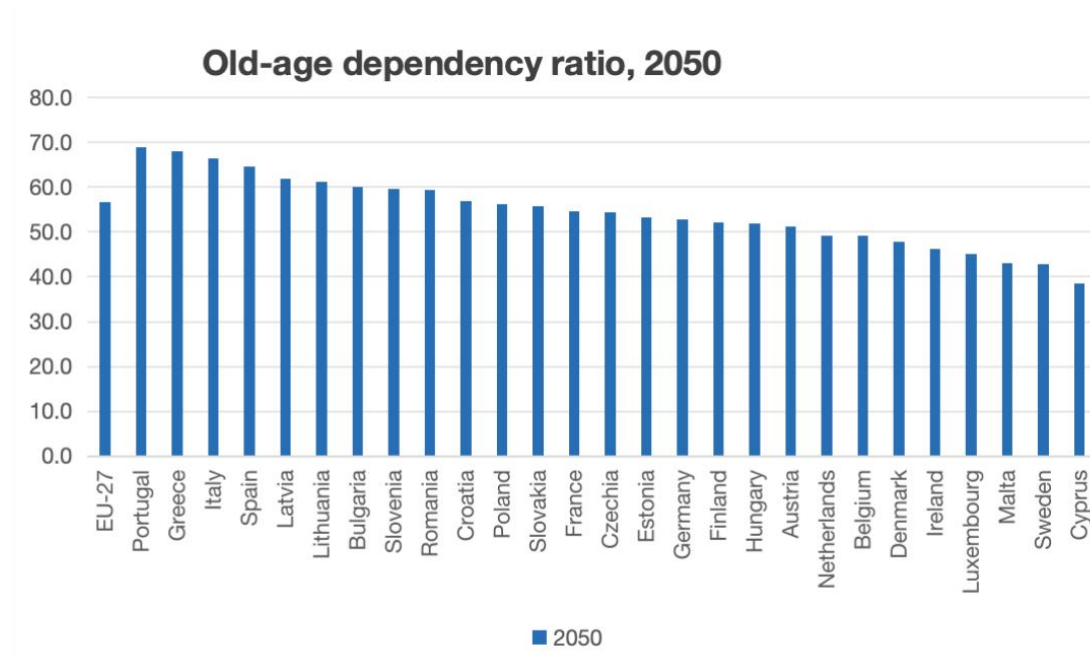


Table.2 Old-age dependency ratio in 2050

(Source: Eurostat and United Nations, Department of Economic and Social Affairs, Population Division, World Population Prospects 2019)

In this context, as the immigrants can supplement the labor force, increase social security contributions, and energize the economy in the short term, immigration is seen as an important strategy to mitigate the effects of aging. Germany and Italy were chosen as case studies because of their representativeness in terms of aging and immigration policies and the differences between their welfare systems, labor market structures, and social integration policies. These differences provide a rich comparative perspective for analyzing the coordination of policy within the EU. Through an in-depth study of these two countries, this paper aims to develop a more coherent and targeted migration policy at the EU level, as well as to provide an empirical basis and policy insights to address the challenges posed by the aging society.

4.1 The Role of Immigrants in the Labor Market

The European Union grapples with the profound consequences of demographic ageing—characterized by a contracting labor force and a mounting old-age dependency ratio—posing existential risks to both economic vitality and the long-term viability of welfare systems. Within this context, immigration emerges not merely as a labor market fix, but as a strategic demographic lever capable of recalibrating population structures and alleviating the social and economic strain associated with ageing.

The steady inflow of younger migrants plays a crucial role in expanding the working-age population, thereby offsetting the proportional growth of the elderly cohort. As evidenced by demographic projections from Australian scholars,

maintaining a net annual immigration rate of approximately 70,000 individuals until 2050 could stabilize the old-age dependency ratio at around 69%, a marked improvement over the projected 75.7% in the absence of continued immigration (Withers, 2002). While this scenario is drawn from the Australian context, its implications resonate across EU member states facing similar demographic trajectories—suggesting that consistent migration inflows may moderate ageing trends and ease structural pressures.

Germany, in particular, has developed a proactive and skill-centered immigration strategy to mitigate labor market imbalances exacerbated by ageing. Through the EU Blue Card scheme—designed to attract highly qualified professionals from non-EU countries—Germany issued 69,353 cards in 2023, constituting nearly 78% of the total issued across the EU (Eurostat, 2024).

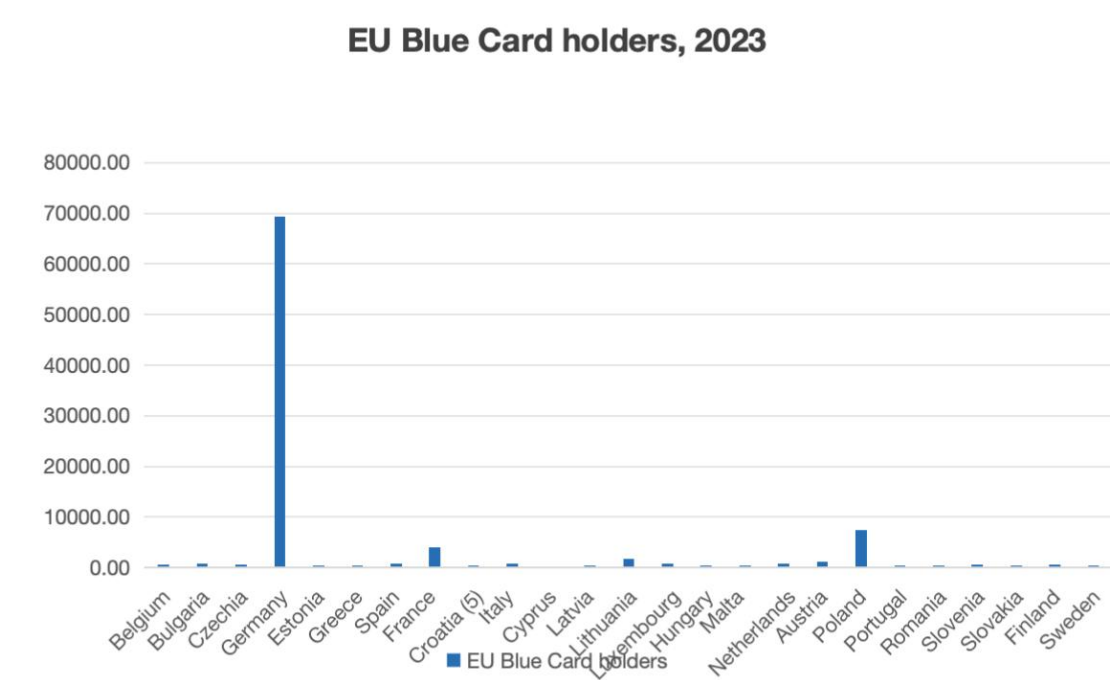


Table.3 EU Blue Card holders in 2023
(Source:Eurostat)

These migrants predominantly contribute to critical sectors such as information technology, engineering, and scientific research. Germany's Federal Employment Agency has also actively signed labor cooperation agreements with other countries to introduce professionals such as nurses, electricians, cooks and gardeners. The specific countries involved include India, Mexico and Colombia. These measures have effectively alleviated the shortage of talents in Germany's medical care, technical jobs and seasonal agricultural employment. Overall, foreign workers have played a key role in the German labor market, especially in the fields of medical care and professional technology. According to data from 2023, the employment rate of foreigners in Germany is 69.8% and the labor participation rate is 73.9%. Although it is slightly lower than that of local people (employment rate 81.0%, labor participation rate 78.9%), it has clearly shown its positive contribution to the German labor market

(OECD, 2022; OECD, 2023).

Conversely, Italy's immigration dynamics reveal a more fragmented and informal picture. Despite facing equally severe ageing pressures, Italy's migrant workforce is disproportionately employed in low-skilled, precarious roles—often outside the formal economy. In the realm of elderly care, around 1.2 million foreign workers, mainly women from Romania, Ukraine, and Latin America, provide indispensable support, compensating for the shortcomings of Italy's underdeveloped public care infrastructure (Facchini, 2020). Similarly, in agriculture, migrants have become the backbone of production amid local labor shortages. Nevertheless, structural informality prevails: an estimated 230,000 migrants were engaged in informal agricultural employment as of 2021 (Guidi & Berti, 2023). While this form of labor addresses immediate supply deficits, it undermines the long-term integrity of the social security and tax systems, perpetuating precariousness and impeding integration. In sum, while migration offers partial relief from the human, financial, and caregiving burdens generated by population ageing, its efficacy is contingent upon the host country's policy design and institutional capacity to integrate migrants. Germany's coordinated, skill-driven model—anchored in formal employment and social security inclusion—presents a viable framework for sustainable demographic adaptation. Italy's reliance on informal, gap-filling roles, while functionally significant in the short term, risks entrenching systemic vulnerabilities. To transform migration into a lasting solution to ageing, EU member states must pursue a dual agenda of demographic realignment and welfare sustainability—through enhanced formalization, targeted skills alignment, and the robust inclusion of migrants within social protection mechanisms.

4.2 Impact of Immigrants on the sustainability of pensions and social security

Population aging not only leads to labor shortages, but also puts severe financial pressure on pension and social security systems. As the old-age dependency ratio continues to rise, the working-age population has to support more and more pensioners, and as a result, public pension expenditures have increased significantly. Italy's old-age dependency ratio (the ratio of the population aged 65 and over to the population aged 20-64) is currently around 41% and is expected to peak at 66% in 2050, meaning that one elderly person will have to be supported for every 1.5 people of working age. Germany's old-age dependency ratio, while slightly lower than Italy's, is also projected to rise from 37 percent in 2022 to about 50 percent in 2050. This demographic change poses a serious challenge to the pension systems of both countries. (European Commission, 2024a& 2023b).

One of the key solutions to ease the pressure on pension systems is seen in young immigrants. In the first place, immigrants make a direct contribution to the pension system through the payment of social security contributions and taxes. As most immigrants are of working age and actively employed, their net contribution to public finances is relatively high, contributing to intergenerational fiscal balance (Sallam & Christl, 2024). For example, the average monthly net fiscal contribution of

first-generation immigrants² in Germany in 2018 was around €116, €94 for second-generation immigrants, and negative (-€106) for natives. These data highlight the positive contribution of immigrant groups to German public finances. This positive effect is mainly due to the younger demographic profile of immigrant groups: after controlling for factors such as age, education, and employment status, the fiscal contribution of second-generation immigrants is close to that of natives, while that of first-generation immigrants is significantly lower. This suggests that it is crucial to increase the long-term fiscal contribution of immigrants through improved education, training and social integration policies (Sallam & Christl, 2024).

Migrants also contribute substantially to the Italian pension system: between 1960 and 2016, migrants contributed approximately 241.2 billion euros net to Italian public finances, providing substantial support for welfare and pension expenditures. In addition, immigrants contributed about 9 percent of Italy's GDP during the same period, demonstrating their important role in supporting the economy and social security funds (IOM, 2017). Research predicts that the Italian pension system would face a fiscal deficit of up to €38 billion by 2040 if the inflow of immigrants were to stop, further highlighting the important role of immigration for the sustainability of the pension system (Boeri et al., 2024). On a large scale, when there are more migrants coming in than going out, the number of people of working age stays the same or increases. This makes the ratio of people to support the elderly go down. In turn, this reduces the pressure on the pension system. According to the Pew Research Center (2024), without immigration, the current old-age dependency ratios in Italy and Germany would be higher and the pension gap problem would be more acute. Migration thus acts as a “shock absorber” in easing demographic pressures, buying valuable time for reforms and adjustments in the pension systems of both countries.

However, migration alone will not solve the long-term challenges of pension systems. Serrano (2011) points out that immigrants' long-term contributions depend on their labor market integration and skill matching. Germany's relatively successful policy of high-skilled immigration has improved the long-term sustainability of its pension system. In contrast, Italy's model of focusing on short-term, low-skilled immigration carries long-term fiscal risks. A fiscal sustainability analysis in Germany shows that a net increase of 200,000 immigrants per year would not fully address the long-term pension system deficit without a significant increase in immigrants' skill levels (Peri, 2011). Italy faces a similar situation where migrants' contributions to the pension system are significantly reduced if they remain in the informal economy long term or if their skills are underutilized. Therefore, both countries must design policies that enhance employment quality and skills matching for migrants to increase their long-term financial contributions. Overall, immigrants positively contribute to the financial stability of the German and Italian pension systems in the short term, slowing the deterioration of old-age dependency ratios and allowing time for system

² First-generation immigrants refer to individuals who were born outside Germany and moved to Germany at a certain age, typically during childhood or adulthood, to live and work. These individuals have experienced international migration firsthand and usually have educational and cultural backgrounds from their countries of origin.

reforms.

4.3 Policy Orientation: Institutional Basis and Orientation

The way immigration policy is set up and the goals of that policy are important in dealing with the issue of population aging. The ability of immigration to fill the labor gap in the short term while optimizing the demographic structure in the long term is often determined by the concepts, implementation methods, and goals behind it. Therefore, clearly distinguishing between and balancing short-term and long-term policy orientations is crucial for achieving sustainable population and labor strategies. The following section compares the institutional foundations and strategic differences between German and Italian immigration policies. It analyzes how well the different policy orientations mitigate aging pressures and provides lessons and insights for demographic sustainability policies at the EU level.

Germany and Italy have distinctive institutional bases and orientations in the design of immigration policy. Germany has explicitly regarded immigration as a strategic tool to compensate for labor shortages and optimize demographic structures. Its policy orientation favors economic skills and orderly immigration. Since the early 2000s, Germany started to consider immigration as a way to bring in skilled workers (SVR, 2014). In 2005, the Immigration Act set up a single system for people from outside the EU. It also created a "one-stop" office and made it easier to get both a residence and a work permit (OECD, 2013). In 2009 and 2012, Germany made the rules easier. In 2012, it added the EU "Blue Card" system. This gave well-educated and well-paid people from outside the EU a quicker and more stable way to move to Germany (Mayer, 2013). In 2023, Germany added the "Opportunity Card." This is a points-based system that lets people without a job offer come to Germany to look for work (Germany Trade & Invest, 2023). Germany's immigration policy is based on what the job market needs. It slowly removed the rule that said local workers must be hired first. It also offers long-term stay permits, easier family reunions, faster approvals, and help with getting foreign qualifications recognized (SVR, 2014; OECD, 2013). Germany's immigration policies oriented toward highly skilled workers (e.g., the Blue Card system) not only alleviate the shortage of skilled labor but also optimize the demographic structure by attracting young immigrants. This indirectly enhances long-term economic productivity (Wright, 2004). This "selective immigration" strategy aligns with the "economic resilience" dimension of the EU's Sustainable Development Goals (SDGs). However, one must be cautious of path dependency caused by overreliance on immigration (Serrano et al., 2011).

On the other hand, Italy's immigration policy is more varied and is impacted by geopolitical elements. As a Mediterranean frontier country, Italy has long been under pressure from a large influx of refugees and illegal immigrants. Its policy orientation has oscillated between humanitarianism and security control (Molnár, 2019).

On the one hand, Italy has long accommodated illegal migrants within the framework of the legal system. There have been several large-scale "amnesties" or regularizations of illegal immigrants. For example, in 2002 and 2012, more than 650,000 undocumented immigrants were legalized (Finotelli & Arango, 2011). On the other

hand, Italy's policy of introducing highly skilled immigrants is weak and lacks the well-developed channels for skilled migration that Germany has. For instance, Italy joined the EU Blue Card program, yet only 747 Blue Cards will be issued in 2023 (European Commission, 2025). However, Italy has approved a large number of seasonal visas for low-skilled and seasonal workers through the annual "Decreto Flussi" (mobility quota). According to Eurostat, Italy issued 79,536 seasonal work permits in 2023, accounting for 41.5% of all such permits in the EU and the highest number in the EU.

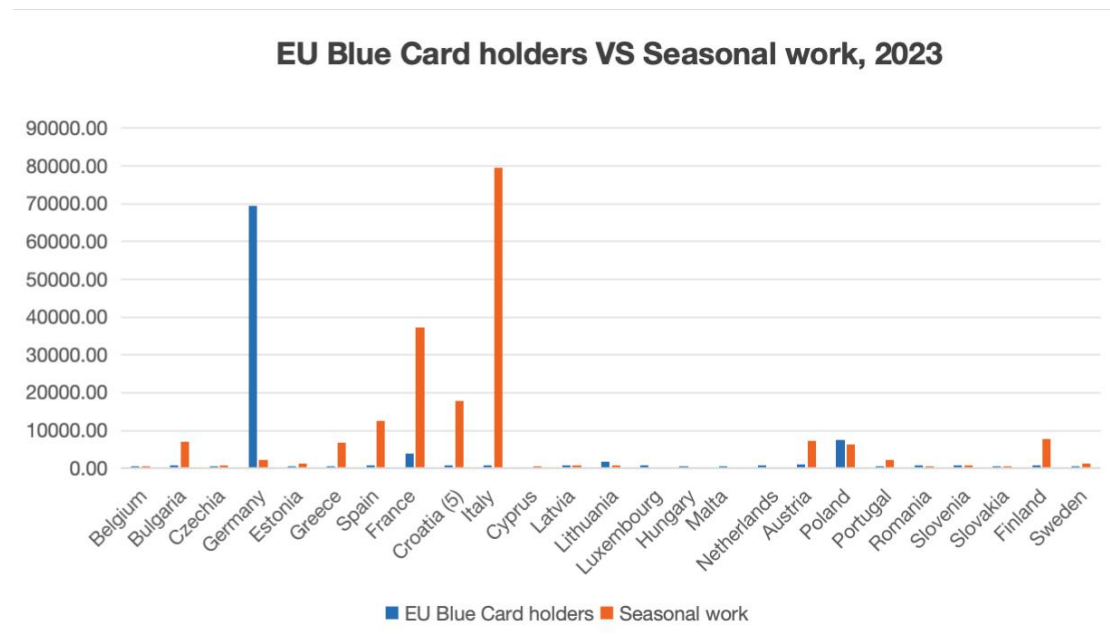


Table.4 EU Blue Card holders VS Seasonal work in 2023
(Source:Eurostat)

This reflects Italy's policy of meeting seasonal labor demands in sectors such as agriculture and tourism by importing short-term foreign workers on a large scale. In sum, Italy's immigration policy is deficient in a long-term, stable planning framework, oscillating as it does between addressing humanitarian needs, family reunification claims, and labor market gaps. Moreover, its implementation is often directly affected by domestic political climate change. In contrast, Germany explicitly focuses on migration as a long-term strategy to mitigate the aging crisis. Its policy design highlights the attraction of highly skilled young migrants, which is more consistent with a long-term orientation. In contrast, Italy's frequent policy shifts have undermined the sustainable role of migration in addressing aging pressures.

4.4 Importance of the integration of immigrants

Migrants not only influence the size and structure of the population in receiving countries, but also provide important support in meeting the economic challenges of an ageing population by complementing the labor market. However, the actual contribution of migrants to the labor market depends to a large extent on their degree of integration and employment status. If migrants are not successfully integrated into

the labor market of the host country, the human capital they possess is difficult to effectively translate into economic contributions. Studies point to the age of migrants upon arrival as a key factor affecting their labor market integration. Specifically, even in high-income countries, while older immigrant groups may gain employment more quickly, immigrants with lower levels of education or a lack of educational information usually take longer to find jobs (Gustafsson et al., 2017).

Germany and Italy show significant differences in the social integration of immigrants. In Germany, effective policy measures such as the 'EU Blue Card' program have significantly increased the cultural participation and life satisfaction of highly skilled non-EU migrants since 2012 (Giovanis et al., 2021). Particularly, participation in cultural activities has been found to enhance the subjective well-being of migrants. In addition, Germany has significantly increased the employment rates and career development opportunities of migrants through a well-developed system of language training and job coaching. Data show that the employment rate of immigrants in Germany reaches 70% in 2022, well above the EU average (European Commission, 2024). High levels of labor market integration enable migrants to access employment opportunities that match their skills, which further promotes their economic and social integration and increases overall life satisfaction.

In contrast, the integration of immigrants in Italy is more difficult, as Panichella et al. (2021) show that, even after controlling for educational background and social origin, immigrant groups in Italy remain systematically concentrated in low-skilled jobs, with limited occupational mobility, and face a significant 'ethnic penalty'. This penalty is not only reflected in the downgrading of grades at the time of initial employment, but also persists and even intensifies over time, especially when immigrants remain engaged in the informal economy for a long period of time. The significant part of this "ethnic penalty" cannot be explained by educational level or social background, implying deep-rooted social discrimination and institutional barriers (Molnár, 2019). In addition, due to the chronic lack of systematic policy support for immigrant integration, especially in terms of language training and job counseling, immigrants in Italy experience lower levels of community participation and social belonging, and perceived discrimination significantly reduces their life satisfaction (Šedovič, 2024; Ambrosetti & Paparusso, 2021).

The very different immigrant integration situations in Germany and Italy highlight the importance of institutional design. In Germany, active policy interventions to create an institutional environment conducive to immigrant integration have significantly increased immigrants' economic development and social integration, thereby enhancing their life satisfaction. On the contrary, in Italy, the lack of institutional support and structural discrimination have resulted in migrants remaining at the bottom of the social ladder for a long time, making it difficult for them to move up the career ladder and seriously affecting their life satisfaction. Effective integration policies, such as the promotion of cultural participation and the provision of systematic employment and language support, contribute to enhancing social inclusion and facilitating the integration of migrants into receiving societies. Conversely, environments that lack institutional support and inclusiveness can

exacerbate the social marginalization of migrants, weakening their integration and overall well-being. Therefore, policymaking needs to focus on the long-term and multidimensional nature of integration and work towards building a more inclusive, equitable and happy social environment.

4.5 Summary of comparisons

Case studies of Germany and Italy demonstrate that migration has the capacity to contribute to the management of aging populations. However, this potential can only be realized if migration is effectively guided by well-designed policies.

The preceding analysis demonstrates a notable correlation between population aging, migratory patterns, and socio-economic sustainability. On the one hand, immigrants, as a replenishment force from outside the country, can mitigate the adverse effects of aging at multiple levels. A moderate inflow of immigrants can optimize the age structure of the population, reduce the old-age dependency ratio, and maintain the size of the labor force. In this way, immigrants can support economic growth and the tax base. At the same time, the taxes and social security funds paid by immigrants can help provide additional financial support for old-age benefits, such as pensions and medical care. In light of the aging trend's irreversible nature, immigrants have been identified as a crucial factor in rejuvenating society. Their integration has been shown to counteract the effects of aging, including the decline in productivity and financial strain, thereby contributing to the maintenance of a youthful demographic. Concurrently, the migrant labor force has become an indispensable pillar in the areas of elderly care and fundamental services, thereby ensuring the security of the daily functioning of an ageing society.

Nevertheless, there are also significant differences in policy practice and effectiveness between the two countries. Germany has historically adopted a proactive stance in the formulation and refinement of its migration policies, with the objective of maximizing the benefits of migration for the purpose of sustainable development. Germany has achieved this by strategically incorporating highly skilled and in-demand tradespeople, enhancing language training and vocational certification, and thereby enhancing the quality of employment and social integration of migrants, enabling them to more fully realize their potential. Meanwhile, Italy's policy response has exhibited a notable delay, characterized by extended periods of limited legal labor migration, resulting in significant numbers of migrants integrating into the economy in an irregular manner. This phenomenon not only diminishes their contribution to the social security system, but also gives rise to concerns regarding labor rights and social governance.

The difference between Germany and Italy demonstrates that the quality and direction of policy design is essential for migrants to contribute meaningfully to sustainable development. The former case study demonstrates that a meticulously planned and inclusive migration policy framework can effectively transform migration into a valuable asset in addressing the challenges posed by the aging population. In contrast, the latter case study highlights the potential negative impact of uncoordinated and visionary policies, which can hinder the full contribution of migrants and even lead to a social dilemma.

The experiences of Germany and Italy provide valuable insights for policymaking at the EU level. Ageing is a common challenge across the EU, and migration is one of the important common solutions. The commonalities and differences between these two countries suggest that the EU needs to tailor its migration policies in a coordinated manner: encouraging member states to open up reasonable migration channels and directing migrants into areas of shortage, while providing support to ensure migrant integration and labor rights, thus achieving a win-win situation. This realization has also laid the groundwork for subsequent policy recommendations at the EU level, emphasizing the need to forge a more coordinated and forward-looking migration and ageing strategy across Europe.

5. Discussion and Policy Recommendations

5.1 Immigration as a Conditional Buffer

Population ageing has led to labor shortages in many EU countries and increased the burden on pension and care systems. Under certain conditions, immigration can act as a buffer to alleviate these pressures. For example, in the 25 OECD countries with available data, immigrants' contributions in taxes and contributions exceeded government spending on social protection, health and education between 2006 and 2018 (OECD, 2021). Immigrants' contributions generally fully cover their share of congestible public goods and help finance pure public goods such as defense and public debt costs. Their influx injects a younger population into the labor force, increases the taxpayer base and, to some extent, supports the pension system. At the same time, the introduction of high-skilled immigrants is particularly helpful in expanding fiscal revenue and promoting innovation, thereby alleviating the long-term economic pressure caused by the aging population (Aydemir, 2020).

In the field of elderly care, foreign workers have become an indispensable force. For example, in Italy, in recent years, a large number of foreign female workers have undertaken family care work, allowing more local women to enter the labor market (Del Boca & Venturini, 2016). However, immigration is not a panacea, and its buffering effect is obviously conditional. The structure of immigrants determines the size of their role. Immigrants introduced through skill-based pathways perform better in terms of employment and income than family reunification or refugee immigrants, and are more likely to fill high-skilled job vacancies (Aydemir, 2020). On the other hand, if most of immigrants are concentrated in the low-skilled or informal sectors, their contribution to pensions and productivity will be limited. In addition, immigrants themselves will age, and without a continuous replenishment of new immigrants, the population age structure will still tend to age. The United Nations population replacement simulation shows that in order to maintain the current EU dependency ratio through immigration alone, the scale of immigration required is as high as hundreds of millions of people, which is extremely unlikely (Castro Martín, 2010).

This shows that immigration can only slow down the aging trend to a limited extent, but cannot fundamentally reverse the demographic transformation. More importantly,

the positive role of immigration depends on effective integration and institutional support. Without a good integration policy, immigrants may face problems such as their skills not being recognized by the host country and language barriers. (Aydemir, 2020). Therefore, the effectiveness of immigration policies depends on supporting measures. Integration mechanisms, including mutual recognition of skills certification, language and vocational training, and prevention of employment discrimination, are necessary conditions for converting the potential labor force of immigrants into actual economic contributions. At the same time, the institutional design of the host country also plays an important role. For example, the flexibility of the labor market, the supervision of illegal employment, and the incentives of the social welfare system for immigrants to participate in the degree of participation all affect the effectiveness of immigration in alleviating the burden of aging.

5.2 Policy recommendations at the EU level

Based on the above discussion and the case study of Germany and Italy, EU-level policies could be improved in several ways to leverage the role of migrants in addressing the impact of an aging population.

First, strengthen the mechanism for introducing high-skilled immigrants. The EU should increase its efforts to introduce and retain high-skilled immigrant talents, improve the existing EU Blue Card system and other policy tools, and increase the attractiveness of third-country technical talents and the efficiency of visa issuance. For example, the implementation of the various measures of the new EU Blue Card Directive (2021/1883) will provide non-EU high-tech talents with a faster path to work permits and long-term residence and even EU citizenship (Osamor, 2024). At the same time, establish a more active talent recruitment mechanism, such as conducting talent cooperation projects with key source countries, simplifying the process of foreign academic qualifications certification, and providing employment matching services, to ensure that the skills of the introduced immigrants match the gaps in the European labor market. The increase in high-skilled immigrants will help fill the talent gap in professional and technical fields, promote innovation and enhance economic competitiveness.

Second, improve the immigrant integration system. While attracting immigrants, more attention should be paid to the degree of integration between immigrants and their environment. Member states and EU institutions need to work together to help immigrants integrate into local society and the job market. This includes providing language training, support for skill certification transfer, and anti-discrimination and multicultural education measures to reduce institutional barriers to employment and social participation. These measures can help new immigrants adapt to local society as quickly as possible and reduce unemployment and low employment rates caused by cultural and language barriers. A good integration mechanism not only benefits immigrants themselves, but also reduces negative impacts such as social tension and cultural conflict. The case of Germany shows that systematic integration policies at the federal level (such as the Integration Act promulgated in 2016 that emphasizes language learning and employment training) have significantly improved the

employment rate of refugees and other new immigrants; in contrast, Italy's immigrant integration policy is more fragmented, with different measures in different regions, which to some extent weakens the overall effectiveness of the national policy. This suggests that the EU should guide and urge member states to learn from successful experiences and improve integration policies in a more comprehensive and consistent direction to maximize the human capital potential of immigrants.

Third, migrants' participation in formal employment should be promoted. In order to avoid wasting migrant labor in the shadow economy, the EU should coordinate with member states to strengthen labor law enforcement and legal employment channels for migrants, and develop measures to encourage and help migrants enter the formal labor market. Specifically, the phenomenon of migrants engaging in the underground economy can be reduced by accelerating the review of migrant status and the issuance of work permits, cracking down on the exploitation of illegal workers, and providing skills training to equip migrants with the qualifications needed for formal employment. Promoting the transformation of temporary labor into permanent labor and formal employment can both protect the basic labor rights of migrants and increase their contribution to the economy. Moving migrants from the gray zone to formal employment through policy interventions not only eases manpower shortages in key sectors, but also strengthens social security coverage and management of migrant groups, creating a win-win situation. The European Union should encourage more of these virtuous practices and, if necessary, provide financial and technical support to help member States regulate the employment of migrants.

Fourth, strengthen policy coordination and responsibility sharing among member states. Given the differences in population structure and immigration needs among member states, the EU needs to promote closer cooperation at the policy level to form a joint force to cope with aging. First, in terms of legal immigration channels, the policy standards of member states should be coordinated to avoid talent competition or imbalanced immigration flows caused by each country doing its own thing. For example, promote countries to recognize each other's skill certificates and qualifications, and reduce institutional barriers to cross-border migration. Second, a more equitable responsibility-sharing mechanism should be explored in terms of immigrant resettlement and welfare burden. At the EU level, through negotiations and budget support, member states can be guided to jointly assume obligations such as refugee resettlement and border management, so as to avoid excessive pressure on a single country, thereby maintaining the sustainability of immigration management throughout the EU. Finally, policy coordination also means a shift in strategic thinking. The EU should encourage member states to abandon the temporary emergency thinking and turn to a long-term population strategy. For example, the immigration issue should be included in the EU's population and development policy framework, and the policy progress of various countries should be regularly evaluated and best practices should be shared. Europe needs to shift from a crisis response mode to a structural and sustainable immigration governance model to adapt to the long-term trend of population change (Osamor, 2024).

Fifth, combine immigration policy with other population policies to enhance synergy.

Immigration policy should be placed in a broader population policy portfolio and coordinated with measures to encourage local labor participation. On the one hand, countries need to continue to promote the "delayed retirement" and "active aging" policies to extend the working years of the elderly population by gradually raising the statutory retirement age, encouraging flexible retirement and re-employment. A longer working life does not only alleviate the pressure of declining labor supply to a certain extent, but also helps to reduce the burden of pensions. On the other hand, measures should be taken to promote women's fuller participation in the labor market, such as improving childcare support and eliminating gender discrimination in the workplace, so as to increase the female labor force participation rate. These local policies will increase the number of active workers in the economy, complementing the role of immigrants in filling the gap. Therefore, the optimal strategy is to introduce a certain scale of immigrants while stimulating the employment potential of the local population, especially women and the elderly, and to improve overall labor productivity through education and skills training. Comprehensive policies can alleviate the multiple challenges brought about by aging to the greatest extent and achieve sustainable economic and social development.

6. Conclusion

This study explores the role and policy impact of immigration in the EU's response to population aging through case studies of Germany and Italy. The results show that immigration does make positive contributions in supplementing the labor force, supporting the pension system and nursing services, but its actual effect is affected by differences in policy design and implementation. Germany introduced high-skilled immigrants earlier and strengthened integration policies, which partially alleviated the labor shortage; while Italy's policies were relatively lagging, mainly focusing on short-term employment needs, limiting the potential of immigrants. This shows that active and systematic immigration policies combined with effective social integration measures are more conducive to releasing immigration dividends.

Nevertheless, migration is not a cure-all for aging. Its effectiveness depends heavily on the institutional design and integration mechanisms of receiving countries. Therefore, migration policies should be incorporated into a broader demographic strategy alongside internal reforms, such as delaying retirement and increasing female labor force participation. This approach enhances a country's capacity to cope with an aging population and maximizes the role of migration in the sustainable development of the European Union.

It should be pointed out that the analysis in this article has certain limitations. On the one hand, this study mainly uses qualitative and descriptive empirical analysis methods, lacks the support of more elaborated quantitative models, and does not simulate and measure the specific scale of the impact of immigration on aging under various policy scenarios. As a result, there is still uncertainty in the quantitative degree of the conclusion, which needs further research to verify and refine through models and data. In addition, this paper focuses on two typical countries, Germany

and Italy, which may not represent the situation of all countries in the EU. In order to improve the robustness and universality of the conclusions, future research can consider introducing cross-national quantitative data analysis and model simulation. Using econometric models on samples of more EU countries to examine the dynamic relationship between immigration policies, labor participation and population aging can verify and deepen the findings of this paper. At the same time, in terms of data samples, expand the scope of research and conduct horizontal comparative analysis. Incorporate more countries with different population structures and immigration policies to examine the differences in the effects of diversified policy combinations. This will help identify best practices and improve the applicability of research conclusions throughout the EU.

In summary, responding to an aging population is a complex, systemic challenge requiring an integrated approach to immigration and other socioeconomic policies. While migration is not the only way to address population aging, scientific, sequenced, and synergistic policy design can provide valuable impetus for the sustainable development of the European Union.

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