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An Intergenerational Perspective on Public Finances

Policy Brief



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Portugal faces important intergenerational trade-offs as highlighted in the study “Finanças Públicas: Uma Perspetiva Intergeracional”. The demographic dynamics predicted for the coming decades are incompatible with the current profile of benefits and taxes associated with each cohort - in the future, we will have fewer working age people paying taxes, and increasingly older people receiving support. As a result, if nothing is done, the sustainability of the public finances in Portugal is severely jeopardized, with estimates pointing to a permanent deficit in the public accounts as of 2030 (Franco, Morais, Bernardino, & Jalles 2021).

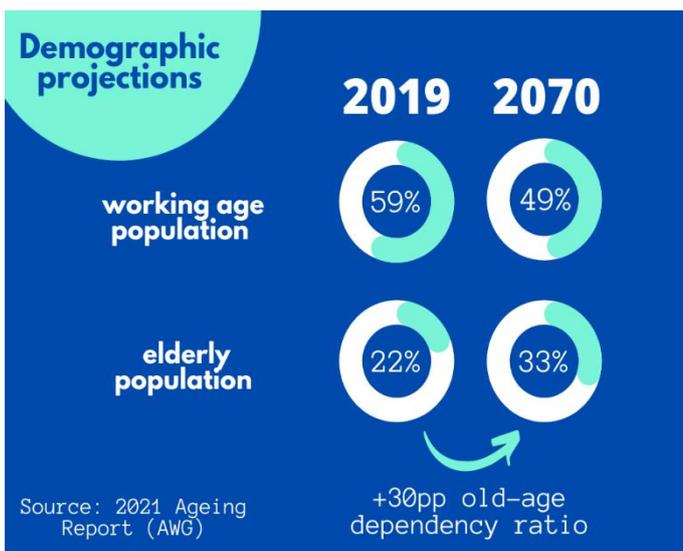
The brief in brief

The aim of this Policy Brief is to discuss the solutions proposed by the study and the policy options balancing the need for an intergenerational equilibrium and the goal of achieving long-term fiscal sustainability. The brief will also discuss policies to counteract the effect of aging and its impact on the sustainability of Portuguese public finances, while relying on existing international evidence on what works. Nevertheless, it is crucial to bear in mind that there is not a silver-bullet policy approach to tackle this sustainability issue, given its complexity and sheer dimension.

Trends

The ageing of the population, stemming from the decline in fertility and the increase in life expectancy, coupled with persistent deficits, creates a fiscal sustainability challenge likely to be exacerbated in the near future. This is a problem in Portugal and beyond: The Euro Area old age dependency ratio – that is, the ratio between the number of persons aged 65 and over (age when they are generally economically inactive) and the number of persons aged between 15 and 64, expressed per 100 persons of working age (15-64) – is estimated to skyrocket from 33% in 2016 to 53% in 2070 (Nerlich & Schroth 2018). These dynamics are expected to lead to both a decline in the labor supply and productivity losses (Nerlich & Schroth 2018).

Figure 1: Demographic projections



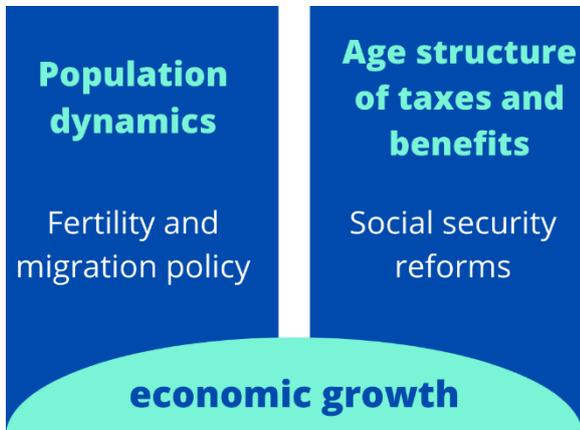
The demographic projections presented in the 2021 Ageing Report (AWG) show that Portugal is expected to experience both a decrease in population (reaching 8.5 million by 2070), and a substantial structural change: the working-age population is expected to decline from 59.0% in 2019 to 49.2% in 2070 and the elderly population to increase from 22.0% in 2020 to 33.1% in 2070. Besides this, the same projections point to an increase of 30pp of the old-age dependency ratio for Portugal from 37.3% to 67.3% between the period 2019-2070.

Granted, demographic projections carry a substantial amount of uncertainty, due to

underlying assumptions about population dynamics and migration flows – nevertheless, they are the best tool available to anticipate the future and derive possible policy conclusions.

This new age composition of the population and the structural inconsistency between fertility and average life expectancy trends will likely exacerbate the already fragile public finances.

Figure 2: Recovering a sustainable path



Considering this, recovering a sustainable path requires a change either in **population dynamics** (through fertility or migration policy), in the **age structure of taxes and benefits** (through social security reforms on the public pensions system), or in the pace of **economic growth** (through investment in human capital and firm-related incentives). All of which can have a positive impact on the sustainability of public finances. Indeed, for a same tax rate, a steeper growth trajectory generates increments in fiscal revenue necessary to counter the verified deficits. Ultimately, to assess a sovereign's solvency, what binds is the debt-to-GDP ratio rather than the stock of nominal debt itself. Should domestic product grow faster than debt (via having growth rates higher than interest rates), the debt-to-GDP ratio is set to improve. As far as policies are concerned, it is essential to bear in mind that growth is not only policy induced. Still, well-designed, incentive compatible policies can contribute to growth.

Migration & Fertility Policy

Migration Policy

Enhancing net migration, particularly by promoting immigration, may attenuate the ageing trends of the population by contributing to the reduction of the old-age dependency ratio. This is mainly due to the fact that migrants are usually of working age, with estimates indicating that roughly 74% of them were aged 20 to 64 in 2019 (United Nations 2019). Additionally, migrants may contribute positively to population growth. Emigration is disregarded for these purposes since it generally falls out of the scope of public decision-makers (Franco, Morais, Bernardino, & Jalles 2021).

While increasing immigration levels are in principle desirable, attracting skilled migrants would allow to fully reap the benefits of such policy. This is because increasing the human capital stock through immigration can raise overall productivity and contribute to economic growth in host countries (Boubtane, Dumont, & Rault 2014). Additionally, high-skilled immigrants foster technological progress through the creation and diffusion of knowledge and innovation (Kerr & Lincoln 2010) and are more likely than the native-born to start their own business (The Economist 2019). Hence, the policy approaches discussed below will focus on options that have been shown to be effective in attracting skilled immigration flows.

Policy Approaches

Czaika and Parsons (2015) show that the most effective policies in attracting highly skilled migrants are supply-led immigration systems, that is, **points-based systems** (Box 1). Applicants matching the country's requirements are offered a position. This increases both the absolute number of high-skill migrants and the skill composition of international labor flows. On the other hand, demand-driven systems, usually based on the principle of job contingency and often supplemented by a case-by-case or occupation-by-occupation assessment of labor market needs, are shown to have fairly little, and potentially even a negative effect in attracting skilled-migration flows.

Other policy approaches include the **provision of post-entry rights**, for instance, the offer of permanent residency. However, this particular approach reduces the skill-intensiveness of labor flows since this proves especially attractive for low-skilled workers. Moreover, **bilateral agreements** that recognize the credentials of diplomas earned abroad and **transfer social security rights** between country pairs, promote flows of high-skilled workers and contribute to the skill selectivity of immigrant flows.

Box 1: Points-based systems

Systems where job applicants gather points based on prospective job-titles, prospective salaries and language fluency.

Where?

Canada, UK, Australia

Impact?

Nearly 2/3 of skilled migrants move to these 3 countries and to the USA (The Economist, 2019).

Trade-offs

One potential caveat of this policy is that considerable inflows would be needed if any effects were to be witnessed. Yet, Feldstein (2006) argues that the possible positive effects stemming from increased immigration would be insufficient in generating the revenue needed to deal with the ageing population, once we consider the magnitude of the fiscal effects generated by the inflow. Indeed, the increased revenue coming from a large rise in immigration would finance only a small part of the consequent rise in the cost of pension and health benefits, especially in the short-run.

In the long run, however, it is in principle possible that migrants generate a steady stream a tax revenues. For instance, if settled immigrants exhibit stable paths of consumption, then VAT taxation can suffer substantial mutations over time, affecting revenues for business in the meantime (and therefore affecting the basis of firm taxation as well). Indeed, considerations of timing and life cycle are critical if one is to provide any definite answer to the problem. Instead of solely comparing the benefits and services received by immigrants, with the costs they entail over a given time period, one should also account for potential effects of migration on fiscal policy, as evaluating the net contribution status of the same cohort at different periods might yield conflicting predictions.

This goes to show just how murky the evidence on the contribution of immigration to the issue at stake is. Furthermore, researchers delving into the net contribution of migrants to fiscal sustainability are usually plagued by inadequate micro data, which would need to account precisely for costs and benefits. Another key methodological issue relates to the definition of costs and benefits. For instance, if expenses in education are made with foreign children moving to Portugal, the net fiscal balance of migration is likely to be more gloomy than otherwise.

On the other hand, it is also relevant to consider the welfare-state effects triggered by immigration flows: research points to the fact that skilled migrants are likely to represent, on average, a net contribution, whereas unskilled migrants are likely to represent, on average, a net burden (Mayda 2017).

Regarding public finances, empirical studies conducted for 19 OECD countries (among them, Portugal), have shown that a net inflow of migrants increases both GDP per capita and fiscal balance by increasing the share of the workforce and reducing per capita transfers (d'Albis, Boubtan, & Coulibaly 2018), thus countering the idea that public finances would be deteriorated by international migration.

In addition to this, political tensions might arise due to concerns about effects on public finances and on labor market outcomes (Dustmann and Preston 2006, 2007; Boeri 2010). Particularly, the most widespread concern regarding immigration flows for natives is that the expansion of the labor supply, deriving from such inflow, may lead to lower equilibrium wages. In general, immigrants *may* hurt natives with similar skills as theirs and benefit natives with different skills, although a heated debate in the academic community goes on about the effects of immigration in the labor market (e.g., Card and Peri vs. Borjas as in Card and Peri 2016). Nonetheless, an extensive literature review on the wage effects of immigrants on natives (Box 2) shows that, overall, such wage effects are null (Peri 2014).

Box 2: Do immigrants affect natives' wages?

General debate revolves around the idea that immigrants affect (either positively or negatively) natives' wages.

19 out of 27 articles analysed by Peri (2014) get an average estimate for the effect of immigration on native wages between -0.1 and 0.1.

Fertility Policy

Box 3: Impact in Japan

Only has tangible effects in countering the effects of population ageing if the fertility rate is far above replacement levels. Moreover, the effect of pronatalist policies heavily depend on the date of the implementation of the policy, with earlier implementations potentially having more impact on countering the population ageing phenomenon (Parsons & Gilmer 2018).

Alternatively, fertility policy has been proven to modestly increase the number of births, particularly of second and third children. Potential policies that aim to increase fertility include, for instance, better **parental leaves systems**, **childcare programs** and **fiscal incentives to procreate** (Sobotka, Matysiak, & Brzozowska 2019). Yet, policies encouraging births are unlikely to fully offset economic and social changes that led to fertility rates below replacement level.

Furthermore, evidence remains mixed on what policies are most likely to raise fertility rates at the lowest budgetary cost (Brainerd 2014). All in all, pronatalist policies must be combined with increased immigration in order to produce any tangible results.

Migration policy does not seem to have any clear effects on **intergenerational justice**. Both workers and pensioners benefit from migration of workers. For workers, the burden of providing pensions is spread across more shoulders, while pensioners need not fear cuts in pension benefits. How strong these effects are, depends on the specifics of the pension system. However, there may be negative effects for immigrated workers. These may migrate later in life and/or need to undergo training to enter the labor market, leading to reduced pension benefits. This could be reduced or negated through policy, however. Lastly, the demographic situation in the countries of origin should be considered, to avoid simply exporting the demographic problem to those countries.

Ultimately, while they may present some positive impacts in the public finances of a country, immigration and fertility policies do not solve the structural inconsistency between the government's budget constraint and the population's age structure in the long run. For that, it is necessary to develop other types of strategies which are discussed in the upcoming sections.

Retirement Age and Social Security Reforms

The aim of this set of policies is to directly tackle the incompatibility issue by altering the age profile of taxes and benefits. Given that the retirement age in practically all EU countries is lagging behind the increase in longevity, increasing the average number of working-life years per years of retirement may be key to mitigate pressure on public finances.

Retirement Age

One strategy to tackle this issue is **lifting the retirement age**. This increases the tax contribution across all generations, and as people draw their pensions later, there could be a reduction in pension expenditures, although this effect depends on the degree to which pension levels are linked to contributions. This solution is effective in delaying retirement, but only if at the same time the other pathways to early retirement, such as unemployment benefits or disability schemes, are restrained.

Moreover, this policy leads to an expansion of the labor supply, thereby positively impacting aggregate output, which is not compromised even if the older generations are, on average, less

productive than the younger. Still, Kim and Yoshino (2020) stress the importance of human capital formation, training and life-long education in order to foster productivity gains amongst the older population. Increases in aggregate productivity might postpone the age above which people become a burden to firm productivity. One way of tackling this issue is by **developing training programs for the elderly** (such as basic computer training, among others). This policy aims to bring the skills of the elderly up-to-date in order to improve productivity and participation in the labor force for a longer period of time. Besides productivity gains, this policy allows for improved perception of job security and a reduction in skill obsolescence.

Box 4:

Does increasing retirement age affect employment prospects?



Bovini and Paradisi (2019) find for Italy that older workers delaying retirement and younger co-workers are substitutes for one another in production, thus attenuating the concerns of age-related worker obsolescence. Additional evidence from Italy suggests that an increase in the retirement age does not crowd out employment of younger generations, if well implemented (Carta, D'Amuri, & von Wachter 2021). Nevertheless, as far as Portugal is concerned, contrasting dynamics arise. A study conducted by Martins, Novo and Portugal (2008) showed that after the legislative reform introduced in 1994, where women's legal retirement age was gradually increased from 62 to 65 years old, firms employing older female workers significantly reduced their hirings, especially of young female workers.

Impact

Table 1: Impact of Increased Retirement Age

Policies	Country	Main findings	Author(s)/ Year
Increased Retirement Age	15 OECD countries ¹	Increased effective retirement age Positive employment effects (55-65 years)	Kuitto and Helmdag (2021)
Increased Retirement Age & “Active Ageing” Policies	Germany	Extended working lives , especially for lower-educated workers (driven by necessity) Higher educated workers extend voluntarily	Hofäcker and Naumann (2015)
Increased Retirement Age	Netherlands	40% increase in depression for first cohort affected (effects may not persist)	De Grip, Lindeboom, and Montizaan (2011)

Social Security Reform

Another method for encouraging later retirement could be **reducing the implicit tax on continued working**. This implies that if people retire later (and contribute more), their pensions will be increased in line with such. The most radical reforms in regards to this were implemented in Sweden, Italy, Poland and Hungary – public pensions being gradually transformed from defined benefit systems to Notional Defined Contribution systems (NDC), where pension benefits depend on accumulated contributions (OECD 2002).

Alternatively, we could consider **reducing early retirement incentives in other schemes**. In the past, early retirement pensions, unemployment-related benefits and disability schemes have often been used to cover the time until people are entitled to receive the normal old-age pension. To tackle this, many countries have started to tighten access to these schemes and/or have been making them less generous, while strengthening job-search requirements for older unemployed workers (OECD 2002).

Impact

Table 2: Impact of Social Security Reforms

Policies	Country	Main findings	Author(s)/ Year
Reduction of Implicit Tax on Continued Work	15 OECD countries ¹	Increased continued work and delayed retirement	Kuitto and Helmdag (2021)
Reduced Access to Early Retirement (parallel increases in retirement age)	Germany	Reduced early retirement, reduced pensions for lower-qualified workers and growing inequalities in old age	Buchholz, Rinklake, and Blossfeld (2013)

¹ Austria, Belgium, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, Norway, Spain, Sweden, Switzerland, United Kingdom and the United States

Parametric Reforms	Austria	Pension spending reduced by almost 1% of GDP Positive effects on growth and labor supply Cannot offset employment losses from ageing	Jaag, Keuschnigg, and Keuschnigg (2010)
	Spain	Pension spending reduced by 3.25 percentage points in the short term No long-term answer to sustainability problem of the pension system	De la Fuente and Doménech (2013)

Trade-offs

However, retiring later entails costs. Concerning lifting retirement ages, the most obvious source of constraint is that working capabilities and political support provide a retirement age ceiling. Additionally, the costs of employing older workers are not restricted to loss of jobs to the youth, but also in terms of the use of modern technological tools, which require substantial re-training efforts.

Re-training programs, in turn, create firm incentive problems - considering that older people will not stay in the job-market much longer, the cost associated with the training program, from the perspective of the firm, is higher than the increased productivity the firm can reap from the training program. Besides, there is an opportunity cost, as the firm could invest in a training program for younger people and obtain quicker and longer lasting results. Furthermore, training programs for older workers can have negative effects on their motivation if they perceive their own skills negatively and believe that they will not spend much time working in the future. Lastly, it is also important to consider that training programs cannot make up for decades of under-investment in human capital amongst the elderly (Mayhew & Rijkers 2004).

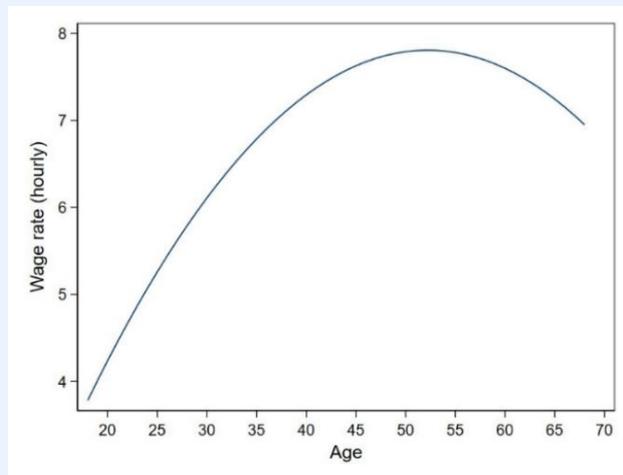
Besides these points and possible adjustments in the workplace to fit older generations' needs and abilities, the increases in life expectancy are not evenly spread across the workforce. Thus, raising the retirement age may disproportionately impact low-wage workers which are less likely to live long enough to compensate the foregone leisure benefits. Lower-middle class workers are also more likely to have physically demanding jobs, so the years they do live past claim age are likely to be spent with physical limitations (Costa-Dias, Blundell, Britton, & French 2021).

Box 5:

What does the evidence for Portugal suggest?

Below is a representation of the Age-Wage workers' profile for Portugal (Figueiredo 2021), which illustrates that wage rates tend to increase with age up until a certain point and decrease after that point.

Figure 3: Age-wage profile in Portugal



Source: Figueiredo, 2021

In addition, these types of policy bear risks which induce the agents to save more, consequently contracting private consumption and aggregate demand as a result (Nerlich & Schroth 2018).

Parametric reforms have clear implications for **intergenerational justice**. Firstly, extending working lives may be perceived as unfair by the older generations, with respect to previous generations, particularly to low-wage workers, workers with physically demanding jobs or others with wearying and draining occupations. Additionally, the combination of both the increase in average life expectancy and the expected decline in pension reforms paid by the system may fuel the sentiment of unfairness, particularly amongst younger generations, which are paying to sustain the current system for dramatically reduced benefits in the future. The 2021 Ageing Report (European Commission, 2021) estimates that by 2040 the replacement rates at retirement will only be 54,5% (suggesting that roughly half of a worker's pre-retirement income is paid out by the pension program after the worker retires).

Overall, parametric reforms, including lifting of retirement ages, have had positive effects on extending the working lives of workers across several countries, although this has come at the cost of increased inequality for older workers and reduced pensions for lower-educated workers.

Economic Growth

More broadly, economic growth is a key ingredient to the sustainability of public finances. This is because growth generates higher revenue per capita, which translates into higher tax revenues (considering tax rates are linked to wages and revenues) that help cover for the deficits triggered by an increasingly aged population. It is relevant to note that growth acts through revenues rather than through demographic channels.

Box 6.1: Exploring the connection between economic growth and public finances Estimating growth's impact



Going back to economic theory, to assess a sovereign's solvency, what binds is the debt-to-GDP ratio rather than the stock of nominal debt itself. Should domestic product grow faster than debt (via having growth rates higher than interest rates), the debt-to-GDP ratio is set to improve.

To illustrate how growth translates into higher revenues, Köster and Priesmeier (2017) provide a long-term estimate for the elasticity of revenues with respect to GDP of 1,20 for Portugal. In terms of short run relationship between tax revenues and GDP, the authors find that a 1 percentage point increase in the growth rate of GDP leads to a 1,04 percentage point increase in the growth rate of revenues, for Portugal as well. Using this measure, we estimate that for an additional 1 percentage point increase in GDP every year, the celerity with which we would reach a zero lending would improve by 31 years.



Source: Author's calculations. This figure captures the number of years saved to reach zero net lending in a scenario where the output growth rate would be larger by 1pp every year starting in 2022, when compared to a scenario where revenues grow at their historical values. This exercise assumes general government spending and revenues grew at their historical (roughly 20 years referential) geometric growth rates and assuming the historical trend of spending remains unchanged, compared with a scenario where no such 1pp increase would occur.

Nevertheless, it is important to bear in mind that most growth is not policy-driven, and it relies on several other dimensions. Moreover, the type of growth (refer to Box 6.2) verified in an economy cannot be fully controlled. Yet, there are policies that, if well and carefully implemented, can boost either one type or the other. Taking into account both the factors mentioned in Box 6.2 and the unfairness of the intergenerational issues at stake with potential losses for the youth, we focus, in this brief, on the role of investment in human capital, namely education, a tool which can help counter the previous effects.

Box 6.2: Exploring the connection between economic growth and public finances

Types of growth



The link between economic growth and revenues relies on several factors, namely the type of growth, where we can consider **consumption** and **investment-based** types of growth.

Radulescu, Serbanescu & Sinisi (2019) take the example of CEE economies during the 2004-2017 period, in which this region has achieved high economic growth rates. Their analysis identifies private consumption as the main driver of growth in the short run. However, the authors point out that this type of growth does not support the job creation process neither in the long run nor in the short run, concluding that the high rates achieved by this region lately cannot be supported in the long run.

To achieve sustainable growth, it is recommended that countries should focus on:

- ✓ Improving the labor market efficiency through training and specialization programs for the labor force.
- ✓ Supporting the education process to improve the skills of the labor force and its productivity.
- ✓ Aiming at public investments while also supporting domestic investments.
- ✓ Supporting higher value-added activities through government policy which will focus mainly on education, R&D and cooperation with the business sector.
- ✓ Providing a stable macroeconomic environment and social-political stability to ensure a stable and sustainable GDP per capita growth in the future.

This highlights the essential role investment plays in sustainable growth, rather than consumption.

Investment in Human Capital

It is a known fact that human capital, particularly in the form of educational attainment, plays a crucial role as a driver for economic growth, as described extensively in the literature (Mankiw, Romer, & Weil 1992; Lucas 1988; Osiobe 2019). Thus, it is important to explore policy options that extract education's potential to spur growth, through productivity enhancement, and that impact both the skills that workers bring to the labor market and their opportunities.

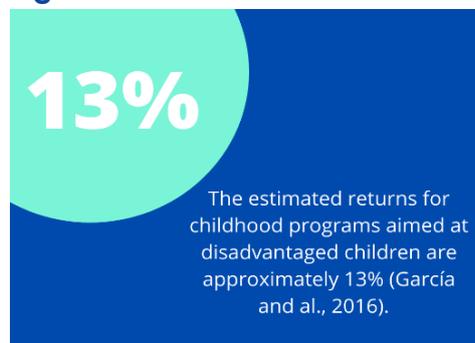
Policy Approaches

Promoting equitable access to quality services is essential, especially in early childhood, where the returns to education are substantial (Carneiro, Heckman, & Vytlačil 2011). Levelling the playing field in terms of access to education involves compensating for existing household flaws through, for instance, online tutoring or efforts such as the French "Devoirs Fait", a program dedicated to accompanied study to complete homework tasks.

In addition to this, efforts to equalize the access to internet resources and study space must be put in place, with a special focus on eliminating the "digital divide".

It is also important to note that the high returns depend not only on the access but also on the quality and consistency of the services provided, with social and emotional stimuli playing a crucial role in the educational programs.

Figure 4: Returns to education



Another crucial angle to look at when considering policies that improve human capital is the link between the skills provided in formal education and the needs of the labor market. In fact, it has been highlighted in multiple reports from the OECD that countries should invest in educational systems that are responsive, for this translates into benefits for individuals and the economy as a whole.

1. By ensuring a quick response to short-term labor market changes, the education system guarantees higher employability for recent graduates, which in turn prevents “scarring effects”, having a beneficial impact at both the individual and the aggregate level in the long run.
2. A more responsive education system can also reduce skills mismatches, which are costly for firms (since labor and searching costs are higher), individuals (which tend to report lower levels of job satisfaction) (OECD 2016) and the economy as a whole (with slower adoption of new technologies and lower productivity).
3. A responsive education system improves also the resilience of workers to future changes in the labor market and their ability to adapt in face of adversities.

Naturally, it is not easy to assess the responsiveness of an education system or to define the set of policies that should be put into place in order to improve schooling in this direction. However, it is clear that curriculums should be frequently updated and that students would benefit from close guidance and mentoring programs as well as an educational system that combines vocational training with customizable learning paths. Furthermore, it is key to facilitate the transition to the labor market by fostering a close link between firms and schools. Lastly, education needs to be perceived as a lifelong process, with a significant focus on training that is inclusive and targets disadvantaged workers, in programs similar to those that have already been proved effective in other countries, such as the “Sectoral Training Programs” in the US (Katz, Roth, Hendra, & Schaberg 2020).

In addition to investment in education and human capital, many other policies that operate on the firm-side of the economy, such as **innovation policies**, can foster economic growth. For evidence on innovation policies, refer to Box 7.



Box 7: International Experience on Innovation Policy

Innovation is instrumental to achieve higher levels of growth and productivity, while contributing to find solutions to many global challenges from climate change to ageing populations. Possible instruments for this include:

- ✓ **Fiscal incentives**, which should be directed at specific barriers, impediments or synergies to encourage the desired level of investment in R&D and innovations. Among these incentives, tax policy is an increasingly vital element. The most widely used types of tax incentive include tax credits or favourable tax deductions for R&D expenditures (OECD 2016). However, as noted frequently by OECD reports, this type of incentives should be used with caution, as they increase the complexity of the tax system, compromising transparency. Furthermore, without careful design, policies can have unintended consequences such as favouring incumbent firms, encouraging small firms to undertake less efficient activities, or creating arbitrage and rent-seeking activities.

Box 7 (continuing): International Experience on Innovation Policy

- ✓ **Research grants, subsidies to encourage investment in R&D and cluster policies**, which are relevant to generate and disseminate innovation. Examples of these include the *Pôles de Compétitivité* in France, the Centres of Expertise in Finland or Japan's Industrial Clusters and Knowledge Clusters programmes. Frequently such policies require collaboration between firms and knowledge generation institutions. Furthermore, an OECD analysis suggests that innovation thrives in an environment characterised by a skilled workforce that has the knowledge and skills to generate new ideas and technologies (OECD 2015), which implies that training efforts are also critical.

All in all, to ensure a significant impact on growth, the discussed policies should be focused in high-potential sectors and/or firms, capable of creating job opportunities. That being said, identifying these sectors and firms is often the most challenging part, with public policy being potentially helpful in identifying key firms.

Conclusion

Population aging is likely to accelerate in most countries of the world over the coming decades, reaching levels unprecedented in human history. The population dynamics described previously imply serious consequences for the Portuguese public expenditures due to the extreme relevance of pensions and health in the budget, threatening the sustainability of public finances. Based on the previous analysis, we can draw the following 3 main key take-aways for policy recommendations:

- ✓ Economic growth is the **fundamental** pillar to maintain fiscal sustainability while ensuring intergenerational justice – since it implies smaller losses from the current working generation. While other types of reforms, such as pension plan reforms, may be effective in fighting the ageing of population in the short run, such policies are not able to generate consistent long-term fiscal sustainability, as illustrated in the brief. To tackle this, we should foster investment-based growth, as far as possible, particularly by enacting policies that aim to promote long-term growth. These are imperative and should be the main focus of the decision-makers.
- ✓ Parametric reforms, such as lifting the retirement age and modifying pension systems can be thought as **complements** to policies that sustain growth. Such policies are more targeted at solving the problem of the ageing of population and the subsequent fiscal weight on younger generations. However, they are limited in their scope and can only provide short-term relief. For instance, one cannot indefinitely raise the retirement age and cut pension schemes without backlash and social dissent. Such reforms should be made in a reasonable way.
- ✓ Migration and fertility policies are **less effective** in ensuring an intergenerational equilibrium and promoting fiscal sustainability in the long run. As highlighted by international evidence, studies on such policies point towards relatively mixed results. For instance, significant migration would be needed to have material effects on fiscal sustainability and offsetting population ageing effects. The same logic applies to pronatalist policies, which may be too weak to solve the problem *per se*. Regardless, migration policies do matter, especially once we consider the wide-ranging benefits of a highly skilled workforce, promoted by skilled immigration flows and overlapping generations effects.

Furthermore, the responses designed to tackle this issue have pressing consequences for **intergenerational justice**. The fundamental incompatibility analysed in this brief implies that current generations are carrying the burden of the debt, while simultaneously facing significantly reduced benefits in the future for themselves. This has clear implications for the sentiment of unfairness felt by younger generations currently working with respect to older ones. Contrastingly, the perception of justice for older generations when options such as lifting retirement ages are employed is weakened in comparison to previous generations, who did not have to work longer for benefits they are legitimately entitled to.

Achieving an intergenerational just outcome is a complex task, but one thing is certain: the later we act, the worse the outcome will be. If nothing is done, future generations risk unaffordable increases in the tax burden or reductions in public expenditure, threatening the intergenerational balance and the social contract itself.

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