DISCUSSION PAPER

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Discussion Paper

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CONTENTS

CONTENTS

ABSTRACT

This paper provides a comparative analysis of the pension systems in Brazil and Canada, focusing on their historical evolution, structural frameworks, and the demographic and fiscal challenges they face. By examining the development of these systems, the study highlights the unsustainable trajectory of Brazil's public pension system, which is projected to consume 13.9% of gross domestic product (GDP) by 2060 due to population aging and declining fertility rates. Drawing on lessons from Canada's balanced three-pillar system – comprising universal public benefits, mandatory contributory plans, and voluntary private savings – the paper proposes a series of policy recommendations for Brazil. These include expanding access to private pension plans, promoting individual retirement savings, reforming the public pension system, and leveraging immigration to mitigate demographic pressures. The findings underscore the importance of increasing the role of private retirement savings in Brazil to ensure long-term fiscal sustainability and retirement security, while also identifying areas for future research to support ongoing reform efforts.

Keywords: retirement savings plans; pay-as-you-go pension plans; capitalization pension plans; Canadian pension system; Brazilian pension system; PGBL; EPP; RRSP; pension system reform.

SINOPSE

Este artigo apresenta uma análise comparativa dos sistemas previdenciários do Brasil e do Canadá, com foco em sua evolução histórica, estruturas institucionais e os desafios demográficos e fiscais que enfrentam. Ao examinar o desenvolvimento desses sistemas, o estudo destaca a trajetória insustentável do sistema público de previdência do Brasil, que deve consumir 13,9% do produto interno bruto (PIB) até 2060 devido ao envelhecimento populacional e à queda nas taxas de fertilidade. Com base nas lições do sistema canadense, que combina benefícios públicos universais, planos contributivos obrigatórios e poupança privada voluntária, o artigo propõe uma série de recomendações políticas para o Brasil. Estas incluem ampliar o acesso a planos de previdência privada, promover a poupança individual para aposentadoria, reformar o sistema público de previdência e aproveitar a imigração para mitigar pressões demográficas. Os resultados destacam a importância de aumentar o papel da poupança privada no Brasil para garantir a sustentabilidade fiscal e a segurança na aposentadoria a longo prazo, além de identificar áreas para pesquisas futuras que apoiem os esforços contínuos de reforma.

Palavras-chave: poupança para aposentadoria; planos de repartição simples; planos de capitalização; sistema de pensão canadense; sistema de pensão brasileiro; PGBL; EPP; RRSP; reforma do sistema de pensão.

1 INTRODUCTION

The objective of this paper is to provide a comprehensive analysis of the pension systems in Brazil and Canada, with a focus on their historical evolution, structural frameworks, and the demographic and fiscal challenges they face. By examining the development of these systems and their responses to population aging, this study aims to identify lessons and policy recommendations for reforming Brazil's pension system, particularly by increasing the role of private retirement savings to ensure long-term sustainability.

The motivation for this study stems from the urgent need to address the fiscal pressures imposed by population aging on Brazil's pension system, which is projected to consume 13.9% of gross domestic product (GDP) by 2060 (figure 9). In contrast, Canada's pension system, with its balanced integration of public and private pillars, offers valuable insights into managing similar demographic challenges. By comparing the historical trajectories and structural features of both systems, this paper seeks to provide actionable recommendations for Brazil to mitigate fiscal risks and enhance retirement security.

The analysis reveals that both Brazil and Canada have undergone significant pension system reforms in response to demographic shifts, but their approaches differ markedly. Canada's three-pillar system, which combines universal public benefits, mandatory contributory plans, and voluntary private savings, has proven resilient to population aging. Brazil, despite recent reforms, remains heavily reliant on its public pension system, which faces growing fiscal imbalances due to an aging population and low private savings participation. Key findings highlight the need for Brazil to expand access to private pension plans, to promote individual retirement savings, and to implement complementary public system reforms.

This paper is divided into eight sections, including this introduction. Section 2 traces the historical evolution of Canada's pension system, from its early 20th-century origins to its modern three-pillar structure, highlighting its adaptability to demographic and economic changes. Section 3 examines the development of Brazil's pension system, from its inception in the 19th century to its current three-pillar framework, emphasizing the challenges posed by population aging and fiscal sustainability. Section 4 analyzes the demographic trends driving the need for pension reforms in Brazil and Canada, including population aging, declining fertility rates, and rising dependency ratios. Section 5 compares the structure, participation rates, and performance of employer-sponsored pension plans in Brazil and Canada, highlighting the potential for expanding private retirement savings in Brazil. Section 6 explores the role of individual retirement savings vehicles, such as Canada's RRSP and Brazil's PGBL, in complementing public pension systems and reducing fiscal pressures. Section 7 proposes a series of policy recommendations to increase the weight of private retirement savings in Brazil's pension system, drawing on lessons from Canada's experience. The conclusion summarizes the key findings, policy recommendations, and lessons from Canada, while also identifying areas for future research to support ongoing pension reform efforts in Brazil.

By addressing these critical issues, this paper aims to contribute to the ongoing debate on pension reform in Brazil and provide policymakers with evidence-based recommendations to ensure the long-term sustainability of the country's pension system.

2 THE CANADIAN PENSION SYSTEM

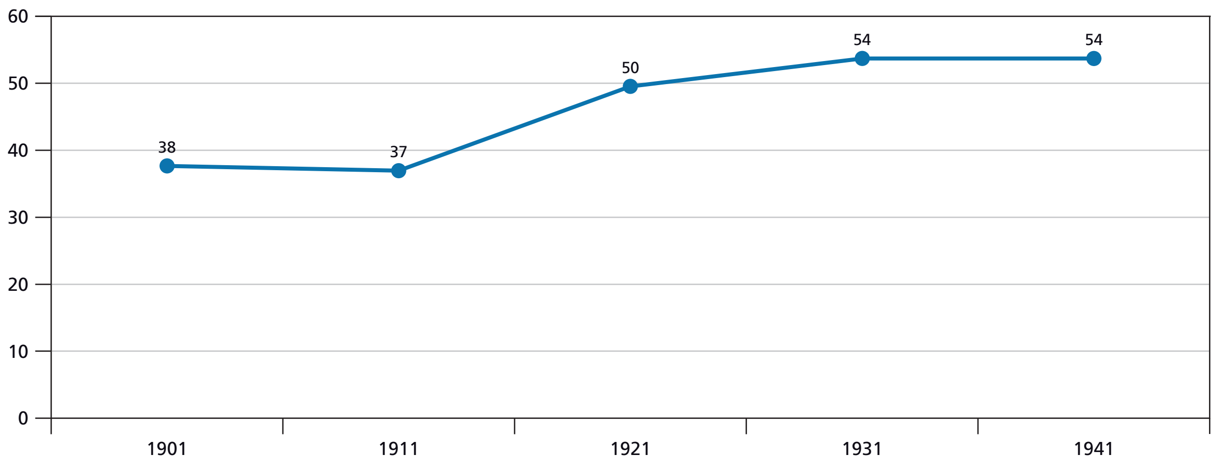
The Canadian pension system has evolved significantly over the past century, reflecting broader socio-economic changes and demographic shifts. The first formal social legislation addressing pensions in Canada was the Canadian Government Annuities Act of 1908, which allowed individuals to purchase government annuities during their working years and receive fixed annual benefits upon retirement. This initiative marked the government's first effort to institutionalize retirement savings, serving as an early precursor to modern retirement instruments such as the Registered Retirement Savings Plan (RRSP). Prior to this, Canadians typically relied on personal savings, familial support, and extended working lives to sustain themselves in old age.

The emergence of private employment-based pension plans began in the late 19th and early 20th centuries, with the Grand Trunk Railway introducing the first such plan in 1874, followed by the Canadian Pacific Railway in 1903. These early private plans laid the groundwork for employer-sponsored retirement benefits, though they were limited in scope and accessibility.

2.1 Early Developments: Urbanization and the Old Age Pensions Act of 1927

The aftermath of the First World War saw Canada undergo significant urbanization, as illustrated in figure 1, which depicts the rising percentage of the urban population. This shift led to smaller family sizes and a decline in agricultural employment, exacerbating economic vulnerabilities among older citizens. In response, the Canadian government enacted the Old Age Pensions Act of 1927,[1] a non-contributory pension program providing an annual benefit of CAD 240 to individuals aged seventy or older who had resided in Canada for at least twenty years and had an annual income below CAD 365. Recipients were also required to demonstrate that their children could not support them financially. This program was funded through revenues from the Income Tax and Business Profits Tax, introduced during the war, with costs shared between the federal government and the provinces.

FIGURE 1
Canadian Urban Population
(In %)



Source: Statistics Canada data.
Author's elaboration.

2.2 Post-War Expansion: The Old Age Security Act of 1951

The economic hardships of the 1930s, compounded by declining fertility rates and increasing life expectancy, highlighted the inadequacy of existing pension provisions. By the 1950s, Canada faced a growing proportion of elderly citizens without sufficient retirement savings. In 1951, the federal government addressed this issue by passing the Old Age Security (OAS) Act, which expanded the 1927 program to provide a universal, flat-rate pension to all individuals aged 70 and over. Concurrently, the Old Age Assistance (OAA) Act introduced a cost-shared, income-tested allowance for those aged 65 to 69, who would transition to the OAS upon turning 70.

1. The Old Age Security is equivalent to the non-contributory Benefício de Prestação Continuada e Aposentadoria Rural.

The implementation of these programs required a constitutional amendment.[2] To grant the federal government jurisdiction over pension administration. Funding was derived from increases in personal income taxes, corporate taxes, and manufacturer's sales taxes. While the OAS was federally administered, the OAA was managed by the provinces, with the federal government reimbursing 50% of costs through grants-in-aid from the Consolidated Revenue Fund.

2.3 The Canada Pension Plan and Quebec Pension Plan: a contributory system

The introduction of the Canada Pension Plan (CPP) and Quebec Pension Plan (QPP)[3] in 1966 marked a significant shift toward a compulsory, contributory pension system. These plans provided not only retirement benefits but also survivor, disability, and death benefits, ensuring portability across jobs and provinces. The CPP/QPP was mandatory for all salaried and self-employed workers aged 18 to 70, with contributions set at 1.8% of pensionable earnings (shared equally between employers and employees) and 3.6% for self-employed individuals. Benefits were calculated as 25% of average pensionable earnings, adjusted for inflation.

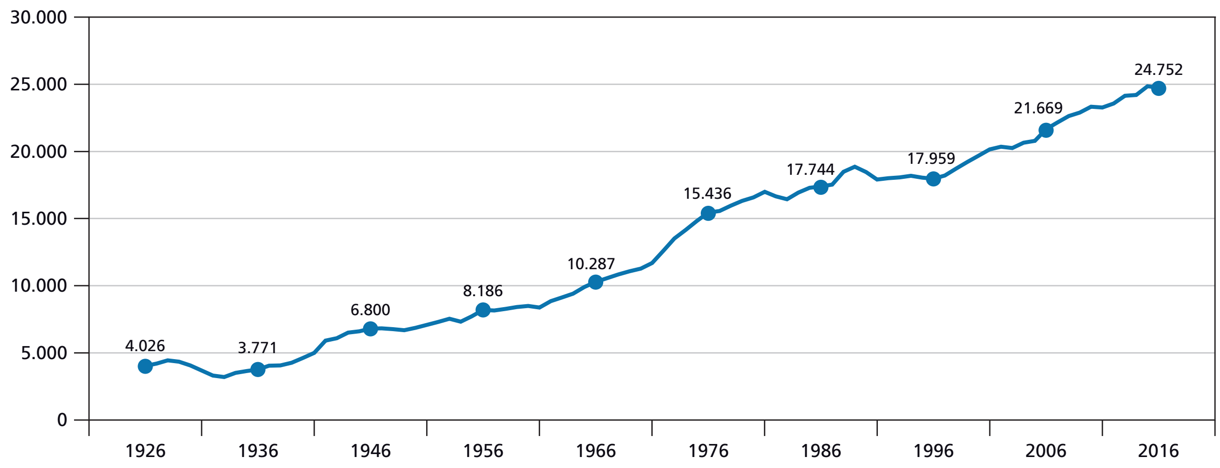
The establishment of the CPP/QPP was facilitated by favorable demographic conditions, including the post-war baby boom and increased immigration, which bolstered the working-age population and stabilized the old-age dependency ratio (see figure 6 and figure 8). Additionally, rising real household disposable income, which grew by 56% from 1945 to 1966 (see figure 2), enabled greater savings capacity among Canadians.

2. The Constitutional amendment agreed upon was the following: "It is hereby declared that the Parliament of Canada may from time to time make laws in relation to old age pensions in Canada, but no law made by the Parliament of Canada in relation to old age pensions shall affect the operation of any law present or future, of a provincial legislature in relation to old age pensions.

3. The Quebec government created a separate plan to have full control of the pension fund reserves and direct them to the province's infrastructure projects. Other provinces had this right as well but didn't used it.

FIGURE 2

Real household disposable income per capita (Canada, CAD, GDP Deflator)



Source: Statistics Canada data.
Author's elaboration.

2.4 Supplementary Measures: The Guaranteed Income Supplement (GIS)

In 1967, the federal government introduced the Guaranteed Income Supplement (GIS) to provide additional support to low-income retirees who were ineligible for the CPP. The GIS complemented the OAS, ensuring a minimum income threshold for vulnerable seniors. This measure underscored the government's commitment to addressing income inequality among the elderly.

2.5 Structural Reforms and Modernization

The Canadian pension system underwent incremental reforms in the following decades. Key changes included the indexation of OAS benefits to the Consumer Price Index in 1973, the introduction of the Spouse's Allowance in 1975, and the Widowed Spouse's Allowance in 1985. In 1987, retirees were granted the option to receive pensions from age 60, and the GIS was made permanent.

The most significant reform occurred in 1998, driven by concerns over the system's sustainability amid rising old-age dependency ratios (see figure 6) and projections of an aging population. The reforms included increased CPP contribution rates, the establishment of an independent CPP Investment Board, and adjustments to benefit calculations. Additionally, the reforms promoted fairness by ensuring equal treatment for men and women and recognizing common-law and same-sex relationships.

2.6 The Three-Pillar Framework

In summary, the Canadian pension system is structured around three pillars. The first pillar consists of universal non-contributory benefits. Funded through general taxation, this pillar includes the OAS, GIS, Allowance and Age Credit. These programs aim to provide a basic income floor for seniors, ensuring access to essential needs.

The second pillar comprises mandatory contributory plans. The CPP and QPP constitute the second pillar, offering earnings-related benefits to replace a portion of pre-retirement income. This pillar is financed through mandatory contributions from employers, employees, and the self-employed.

The third pillar consists of voluntary savings. The third pillar encompasses private savings vehicles such as Registered Pension Plans (RPPs), RRSPs, and Tax-Free Savings Accounts (TFSAs). These instruments are incentivized through tax exemptions and credits, encouraging individuals to supplement their retirement income.

To sum up, the Canadian pension system has demonstrated remarkable adaptability, evolving in response to demographic, economic, and social challenges. Its three-pillar structure ensures flexibility, allowing the relative weight of each pillar to adjust based on government fiscal capacity and individual income levels. This multi-tiered approach not only safeguards the financial security of retirees but also enhances the system's resilience against future demographic pressures.

3 THE BRAZILIAN PENSION SYSTEM

The Brazilian pension system has its roots in the 19th century, initially designed to address the needs of public servants. The first formal initiative was the establishment of montepios in the 1830s, which functioned as survivor pension funds for public workers. The General Montepio for State Servants (Mongeral), created in 1835, was the first such institution, collecting contributions to provide survivor benefits. In 1888, Decree No. 9912-A, issued by Emperor Dom Pedro II, formalized retirement rights for postal employees, requiring 30 years of public service and a minimum age of 60. The 1891 Constitution, promulgated during the Republican period, further expanded pension rights by introducing disability retirement for public servants.

3.1 Early 20th Century: Expansion to Private Sector Workers

The pension system began to extend beyond public servants in the early 20th century with the Eloy Chaves Law (ECL) of 1923 (Legislative Decree 4862). This law established Caixas de Aposentadorias e Pensões (CAPs), pension funds for private railroad companies, which were experiencing rapid growth at the time. The ECL is widely regarded as the foundational framework of the Brazilian pension system. Under this law, employees contributed 3% of their monthly earnings, while employers contributed 1% of their annual income. The funds were managed by boards comprising company executives and employee representatives, with investments primarily directed toward government bonds. Benefits included disability retirement, old-age retirement, survivor benefits, and health benefits.

The ECL model was subsequently extended to other sectors, including telegraph, radiotelegraph, port, and maritime workers. In 1926, the federal government created the Institute of Social Security for Federal Public Servants[4] (Decree No. 5128), which later evolved into the Institute of Social Security and Assistance for State Employees[5] (I.P.A.S.E.) in 1938 (Decree No. 288). This marked the beginning of a more structured approach to pension administration for public servants.

3.2 The 1930s: Political Turmoil and Constitutional Reforms

The 1930s were a period of significant political and social upheaval in Brazil, marked by the Brazilian Revolution of 1930, the Constitutionalist Revolution of 1932, and the Estado Novo coup of 1937. The 1934 Constitution, though short-lived, was a landmark in pension policy, as it introduced a universal pension system for all workers. Contributions were equally shared among the government, employers, and employees, covering old age, disability, maternity, work accidents, and death benefits. This constitution laid the groundwork for a more inclusive social security system, though its implementation was disrupted by the authoritarian regime that followed.

4. Instituto de Previdência dos Funcionários Públicos da União.

5. Instituto de Previdência e Assistência dos Servidores do Estado.

3.3 Post-War Developments: The Organic Law of Social Security (1960)

The next major reform came in 1960 with the Organic Law of Social Security[6] (LOPS) (Law 3807). The OLSS standardized the regulatory framework for pensions and paved the way for the universalization of social security benefits. It also established a more organized administrative structure for the pension system. In 1963, Law 4214 extended pension benefits to rural workers, creating a non-contributory pillar for this group. This marked a significant shift toward addressing inequality in access to retirement benefits.

3.4 The 1988 Constitution: A New Era for Social Security

The Federal Constitution of 1988 (CF88), often referred to as the Citizen's Constitution, represented a transformative moment for the Brazilian pension system. Enacted during the re-democratization period following the military dictatorship (1964-1985), the CF88 introduced sweeping social protections, including the non-contributory pension pillar. Article 203 of the CF88 established the Continuous Cash Benefit[7] (BPC), providing a minimum monthly income to elderly and disabled individuals who could not support themselves. This pillar was further detailed in the Organic Law of Social Assistance[8] (LOAS) (Law 8742 of 1993), which outlined the principles and administration of non-contributory benefits.

The CF88 also restructured the contributory pension system, dividing it into two categories: the General Social Security System[9] (RGPS) for private sector workers and the Special Social Welfare Policy (RPPS) for public servants. Article 201 of the CF88 defined the RGPS,[10] which provides benefits for old age, disability, and survivors. Article 40 established the RPPS, which includes similar benefits but with distinct eligibility criteria and contribution rules. Additionally, Article 202 introduced the private pension pillar, which is voluntary and based on contributions from employers and employees. This pillar was further regulated by Supplementary Laws 108 and 109 of 2001, which established rules for closed pension funds (for public sector employees) and open pension funds (for the general public), respectively.

6. Lei Orgânica da Previdência Social.
7. Benefício de Prestação Continuada.
8. Lei Orgânica da Assistência Social.
9. Regime Geral de Previdência Social.
10. Regime Próprio de Previdência Social.

3.5 Reforms and Modernization: 1998–2019

The Brazilian pension system underwent significant reforms in the late 20th and early 21st centuries, driven by demographic pressures and fiscal sustainability concerns. The Constitutional Amendment No. 20 of 1998 (CE20) introduced key changes, including a minimum retirement age (60 for men and 55 for women) and a minimum contribution period for public servants. It also unified benefit limits for public and private sector workers, encouraging the use of complementary pension plans to supplement retirement income.

The Constitutional Amendment No. 41 of 2003 (CE41) further reformed the RPPS, reducing the benefit replacement rate and introducing an 11% social security contribution for retired public servants. It also eliminated benefit parity with active workers' salaries, aligning public sector pensions more closely with private sector norms.

The most recent major reform, the Constitutional Amendment No. 103 of 2019 (CE103), addressed long-standing sustainability challenges by raising the minimum retirement age to 65 for men and 62 for women. It also extended the contribution period to 35 years for men and 30 years for women in the public sector, and 20 years for men and 15 years for women in the private sector. Benefits were recalibrated to start at 60% of average contributory earnings, increasing by 2% for each additional year of contributions. Additionally, survivor benefits were adjusted based on the number of minor dependents, and contribution rates were made progressive, reaching up to 14% for private sector workers and 22% for public employees.

3.6 The Three-Pillar Framework

Like its Canadian counterpart, the Brazilian pension system is structured around three pillars. The first pillar consists of non-contributory benefits and is funded by general taxation. This pillar includes the BPC and provides a safety net for elderly and disabled individuals with no other means of support.

The second pillar is contributory and mandatory. Comprising the RGPS for private sector workers and the RPPS for public servants, this pillar is financed through mandatory contributions and provides earnings-related benefits.

The third pillar is voluntary. This includes private pension plans and voluntary savings products such as the Free Benefit Generator Plan (PGBL).[11] These instruments offer tax incentives to encourage supplementary retirement savings.

For instance, under the PGBL scheme, contributions of up to 12% of the taxpayer's gross annual income may be deducted from the taxable income base, provided the individual files under the complete tax declaration model and contributes to the public pension system. This tax deferral is further complemented by the option to choose between progressive or regressive tax regimes upon withdrawal.

To sum up, the Brazilian pension system has evolved significantly over the past two centuries, reflecting broader socio-economic and political changes. From its origins in the 19th century as a limited benefit for public servants, it has grown into a comprehensive three-pillar system designed to address the diverse needs of a rapidly aging population. While recent reforms have improved sustainability, ongoing demographic and fiscal challenges will require continued adaptation to ensure the system's long-term viability.

4 THE DEMOGRAPHIC MOTIVATION FOR PENSION SYSTEM REFORMS

This section leverages data from the World Bank's demographic database[12] (WB) to underscore the necessity of increasing the role of capitalization systems in the pension models of Brazil and Canada. World Bank projections indicate that Brazil is expected to experience a declining population, while Canada will face significantly lower population growth by 2050. Furthermore, both countries are anticipated to see a substantial increase in the proportion of their older populations, which poses significant challenges to their existing pay-as-you-go (PAYG) pension systems.

In a PAYG system, current workers fund the pensions of current retirees through contributions. In contrast, a capitalization system requires individuals to save for their own retirement. As populations age, the weight of capitalization systems within a country's pension framework must increase to mitigate fiscal imbalances. This is particularly critical in light of the demographic shifts observed in both Brazil and Canada.

11. Although the Life Benefit Generator Plan (VGBL) is also classified as a pension instrument, in this paper we do not use it alongside the PGBL for two reasons: the VGBL is more commonly used as an estate planning tool; and there is no equivalent to the VGBL in Canada, making the comparison inappropriate.

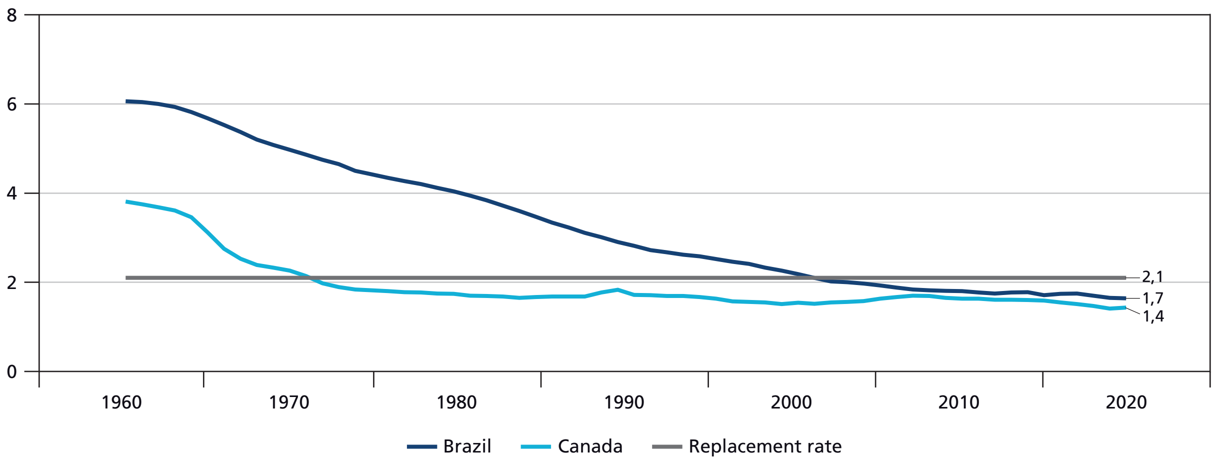
12. World Bank, Health Nutrition and Population Statistics: Population estimates and projections. Last update: 12/20/2023. Period: 1960-2050. Frequency: Annual. Link: https://databank.worldbank.org/source/population-estimates-and-projections.

Andrade and Canuto (2024) highlight that lower population growth can lead to a "gerontocratic fiscal trap," a scenario where increased taxes on the younger generation are necessary to sustain pensions for the older generation. This dynamic reduces disposable income for younger citizens, potentially lowering fertility rates further and exacerbating population decline, thereby worsening public budget conditions.

4.1 Fertility Rate Trends

Between 1960 and 1980, Brazil's fertility rate[13] declined by over 30%, falling below the replacement rate[14] of 2.1 children per woman in 2003. Canada experienced a similar trend, with its fertility rate dropping below the replacement rate in 1972, 31 years earlier than Brazil (figure 3).

FIGURE 3
Fertility Rate
(Children per woman)



Source: World Bank data.
Author's elaboration.

The drop in the fertility rate is observed in most developed and emerging countries. This decline in fertility rates is a global phenomenon, observed in both developed and emerging economies. It is often attributed to factors such as advancements in birth-control technologies, extended education periods, urbanization (figure A6), shifting social norms regarding family structures, and increased female participation in the labor

13. The Total Fertility Rate is the average number of children that are born to women in the population, assuming they maintain the current age-specific fertility rates until the end of their reproductive life.
14. The population replacement rate is the fertility rate needed to maintain the population size of a country.

market (Bignami et al., 2024). These factors have also contributed to declining birth rates in both Brazil and Canada (figure A2).

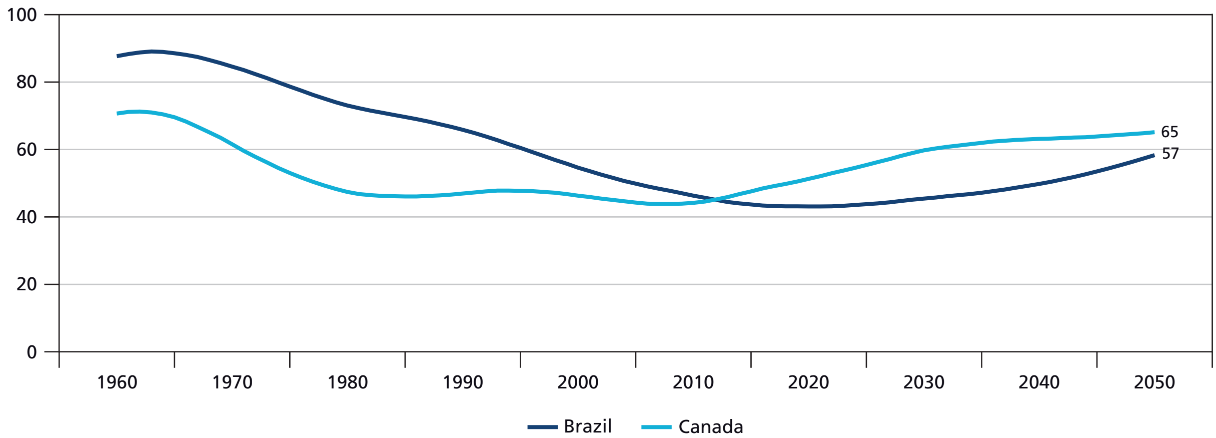
4.2 Inversion of the Age Pyramid

A sustained decline in fertility rates leads to an inversion of the age pyramid, where younger generations population become smaller than older ones' (figure A1). For instance, by 2040, Brazil's population aged 65 and older is projected to surpass the population under 15. This demographic shift is accompanied by low or even negative population growth rates, with Brazil expected to experience negative population growth by 2048 (figure A5).

4.3 Age Dependency Ratio (ADR) and Pension System Stability

The age dependency ratio (ADR),[15] a key metric for assessing the financial stability of pension systems, is significantly influenced by fertility rates. In Brazil, the ADR decreased from 88% in 1960 to 43% in 2021 but is projected to rise to 58% by 2050 (figure 4). This trend is driven by a decline in the young population, as evidenced by the young age dependency ratio (YADR), which is expected to drop from 83% in 1960 to 24% in 2050 (figure 5).

FIGURE 4
Age Dependency Ratio
(In %)

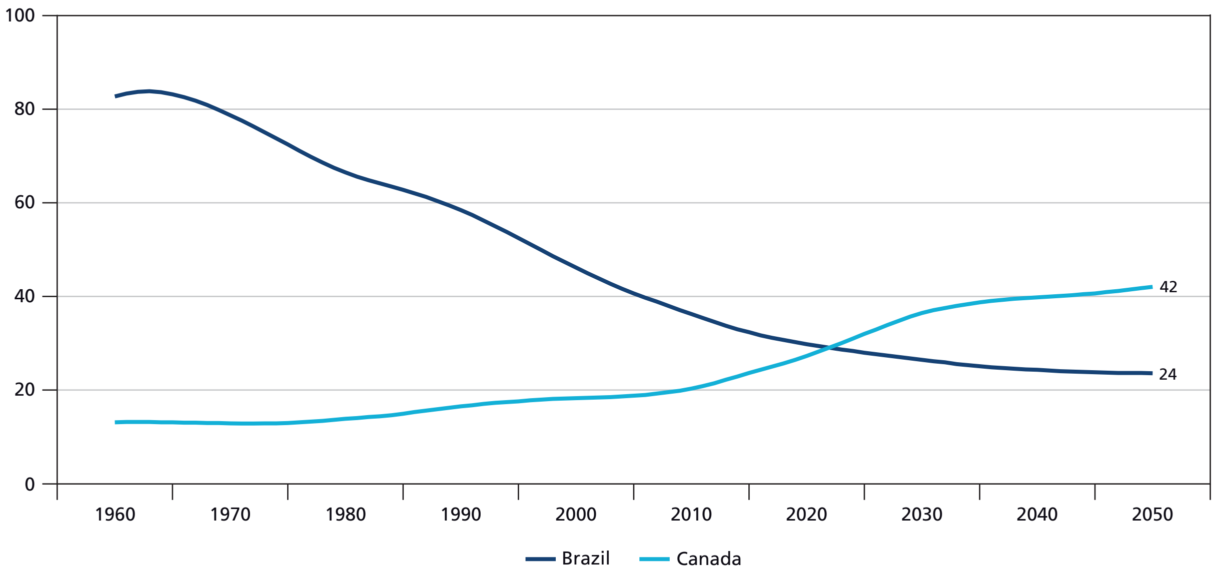


Source: World Bank data.
Author's elaboration.

15. Age dependency ratio is the ratio of dependents (people younger than 15 or older than 64) to the working-age population (those aged 15-64.)

Concurrently, the old age dependency ratio (OADR) is projected to increase from 5% in 1960 to 35% in 2050 (figure 6). The period during which the YADR declines while the OADR remains low is often referred to as a "demographic bonus", characterized by a low percentage of dependents relative to the working population, which typically supports the financial health of social security systems. In Brazil, this demographic bonus ended in 2021, prompting a series of pension reforms to address anticipated fiscal imbalances.

FIGURE 5
Young Age Dependency Ratio
(In %)



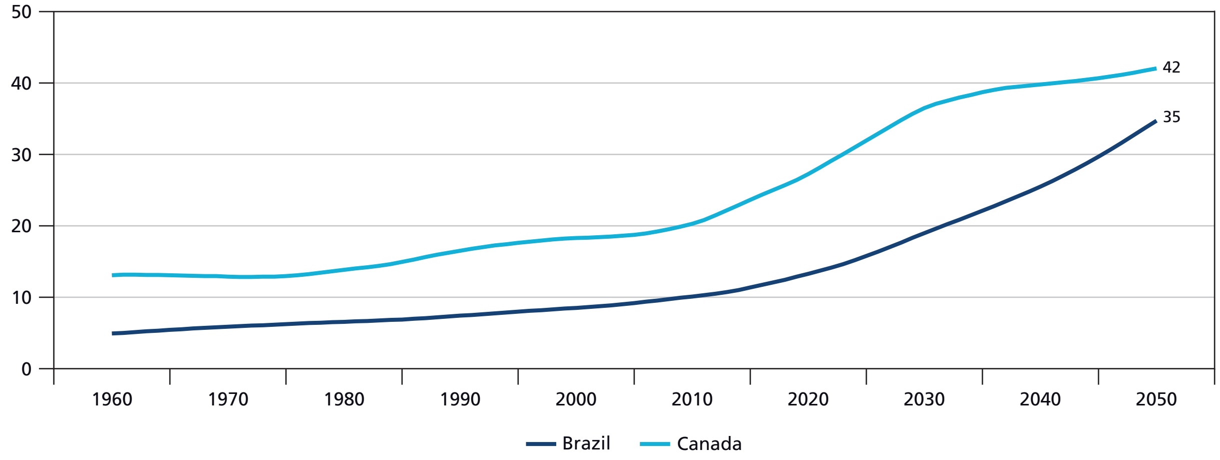
Source: World Bank data.
Author's elaboration.

In Canada, the ADR remained lower than in Brazil until 2012, primarily due to a lower YADR, which was not offset by a higher OADR (figure 6). However, increased immigration since the 2010s (figure 8), has led to a rise in the YADR, as migrants often bring their children. Combined with an already high OADR, this has resulted in a higher overall ADR.

FIGURE 6

Old Age Dependency Ratio

(In %)



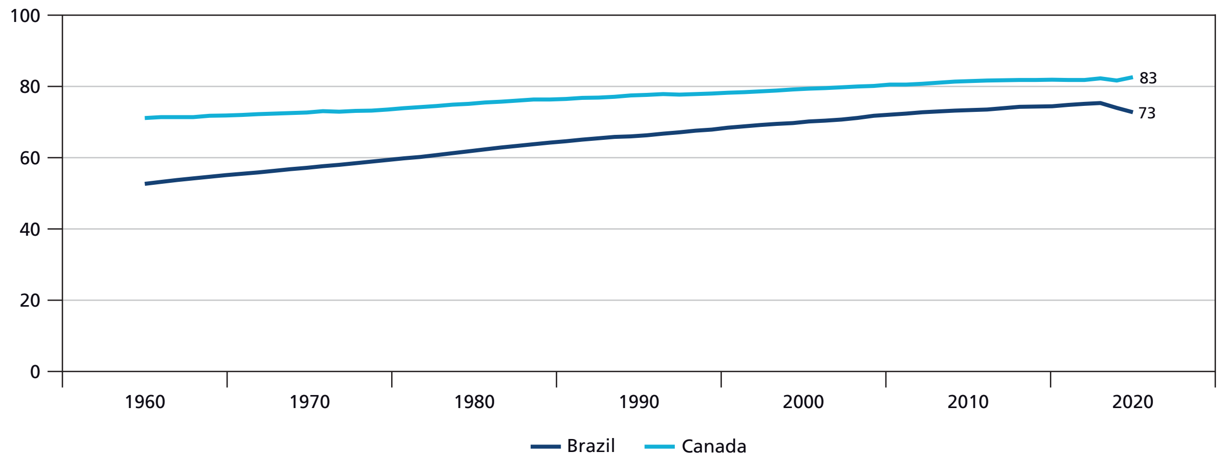
Source: World Bank data.
Author's elaboration.

4.4 Life Expectancy and Migration Trends

Another critical factor is the increasing life expectancy in both countries (figure 7), which means that the inactive population will live longer while the active population shrinks. This demographic trend necessitates policy interventions, such as pension reforms or measures to increase the size of the active population, potentially through immigration incentives.

FIGURE 7

Life Expectancy at Birth (age)

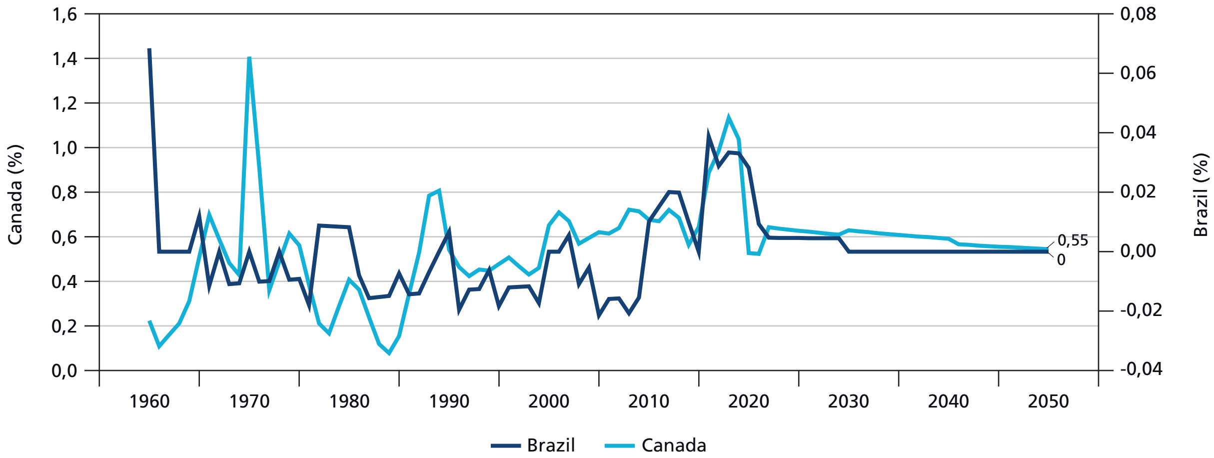


Source: World Bank data.
Author's elaboration.

Canada has maintained positive net migration since at least 1960, with migration rates averaging around 1% of the total population annually during the 2020s. This is projected to decline to approximately 0.5% in the coming decades (figure 8). In contrast, Brazil only began experiencing consistently positive net migration after the 2010s, driven by economic crises in neighboring countries such as Haiti, Bolivia, and Venezuela (Observatório das Migrações em São Paulo, 2024). Unlike Canada, Brazil's recent migration growth was not the result of targeted federal policies but rather external factors. Despite the potential benefits of migration in addressing low fertility rates, Brazil's net migration is expected to remain close to zero in the coming decades.

However, migration is not a long-term solution to demographic challenges, as migrants' fertility rates tend to converge with those of their host countries over time (Bijak, Kupiszewska and Kupiszewski, 2008). Additionally, short-term negative impacts on public services, labor markets, and housing prices often lead to public resistance to migration as a solution for addressing rising old-age dependency ratios.

FIGURE 8
Net Migration
(In % of Total Population)



Source: World Bank data.
Author's elaboration.

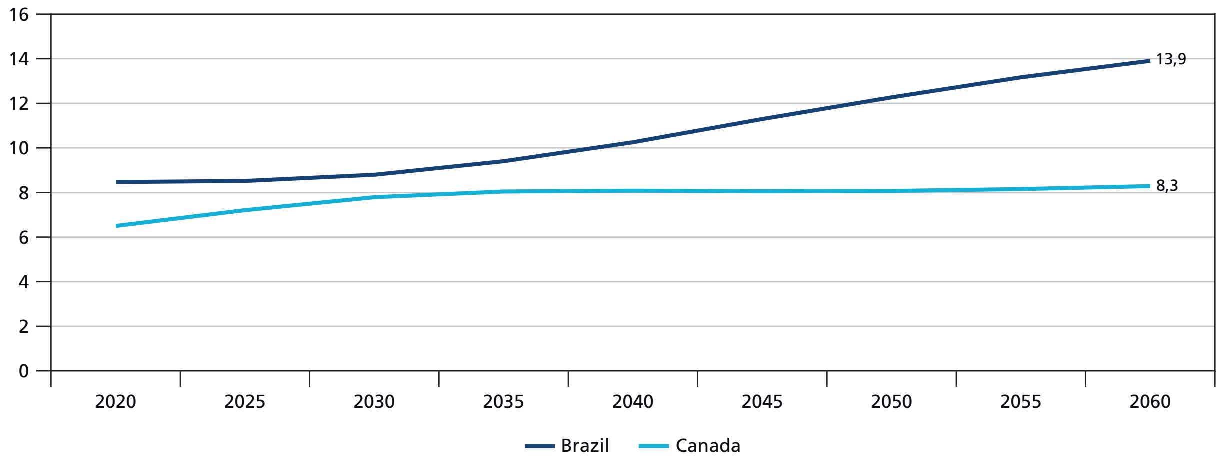
4.5 Fiscal Implications of Demographic Trends

The combination of unfavorable demographic trends and pension systems heavily reliant on public contributory pillars is evident in figure 9. Public expenditure on pensions as a percentage of GDP is projected to rise continuously in Brazil from 2020 onward, reaching 13.9% by 2060. In contrast, Canada's expenditure is expected to stabilize at around 8% from 2030 onward.

This growing public expenditure on pensions in Brazil necessitates reforms to limit the weight of the public contributory pillar in retirees' total benefits. Without such reforms, public services such as education, healthcare, and social assistance programs may face funding shortages, leading to reduced quality and accessibility. Additionally, Brazil risks entering a fiscal dominance scenario, characterized by increased public debt as a percentage of GDP, high inflation, and elevated interest rates.

In conclusion, the demographic trends in both Brazil and Canada underscore the urgent need for pension system reforms that increase the role of capitalization systems. These reforms are essential to ensure fiscal sustainability and mitigate the adverse effects of aging populations on public finances and social welfare systems.

FIGURE 9
Projections of public expenditure on pensions (2020-2060)
(In % of GDP)



Source: World Bank data.
Author's elaboration.

5 EMPLOYER-SPONSORED REGISTERED PENSION PLANS (EPPS) IN BRAZIL AND CANADA

Employer-sponsored registered pension plans (EPPs) are retirement savings vehicles designed to help employees accumulate funds for their post-retirement years. In Canada, these plans are registered with the federal government and typically involve contributions from the employer, the employee, or both. The accumulated funds are invested during the employee's working life and disbursed upon retirement. Employees who change jobs can transfer their EPP balances to a new plan or maintain multiple EPPs.

EPPs are broadly categorized into two types: defined contribution (DC) plans and defined benefit (DB) plans. In DC plans, employees know their contribution amounts but not the final benefit, which depends on the performance of the chosen investments. At retirement, the accumulated funds can be used to purchase an annuity, transferred to a locked-in registered savings plan, or invested in other financial instruments. In contrast, DB plans guarantee a regular income post-retirement, calculated based on salary and years of service, irrespective of investment performance.

Self-employed individuals and employees of small to medium-sized enterprises (SMEs) in Canada can participate in Pooled Registered Pension Plans (PRPPs), which operate similarly to DC plans but do not require employer contributions.

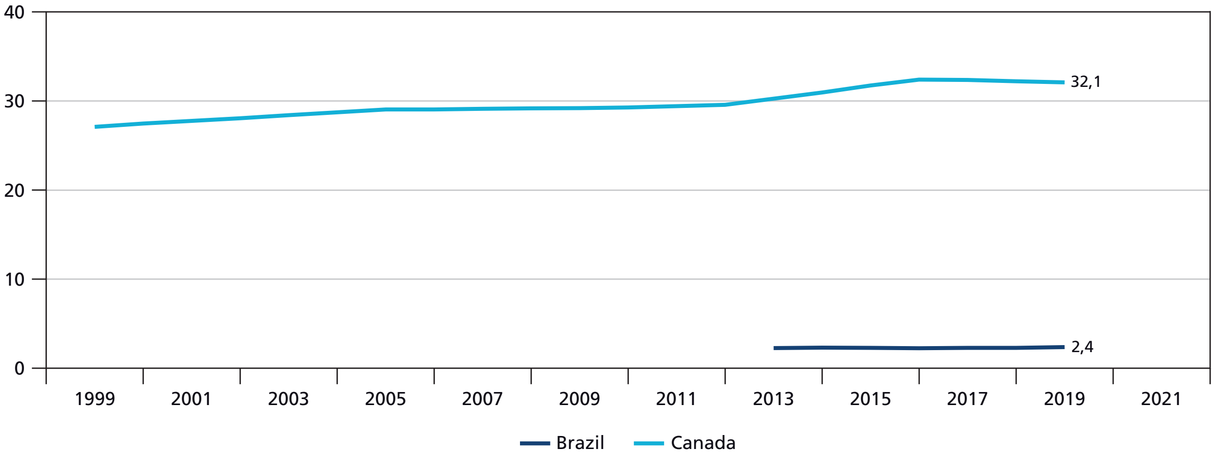
In Brazil, the equivalent of EPPs is known as closed supplementary pension entities (EFPCs) or pension funds. These are regulated and supervised by the National Superintendence of Supplementary Pension (PREVIC) under the Ministry of Social Security. Both employers and employees contribute to EFPCs, and the funds are managed by a designated entity. The legal framework for EFPCs is established under Supplementary Law No. 109 of 2001, which also permits unions, associations, and cooperatives to establish such plans.

EFPCs offer three types of plans: DB, DC and variable contribution (VC) plans. DB and DC plans function similarly to their Canadian counterparts, while VC plans combine features of both, such as a defined contribution during the accumulation phase that converts to a defined benefit at retirement.

5.1 Participation and Coverage

The total number of EPP holders in Canada (7.7 million) is only 2.3 times higher than in Brazil (3.3 million). However, as illustrated in figure 10, the percentage of the working-age population (15-64 years) holding EPPs is significantly higher in Canada (32.1%) than in Brazil (2.4%).

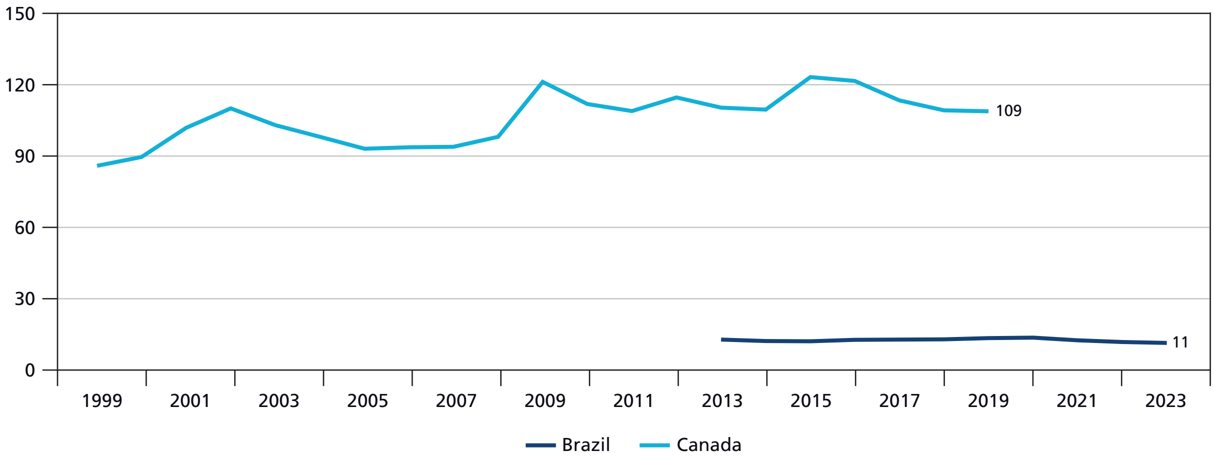
FIGURE 10
Percentage of the population aged 15-64 holding EPPs



Source: Statistics Canada and PREVIC/SUSEP data.
Author's elaboration.

Canada's higher per capita income (US$42,000 compared to Brazil's US$5,776) (figure A9), along with its greater participation in EPPs, results in the total value of pension funds representing 113% of Canada's GDP – nine times higher than Brazil's 13% (figure 11).

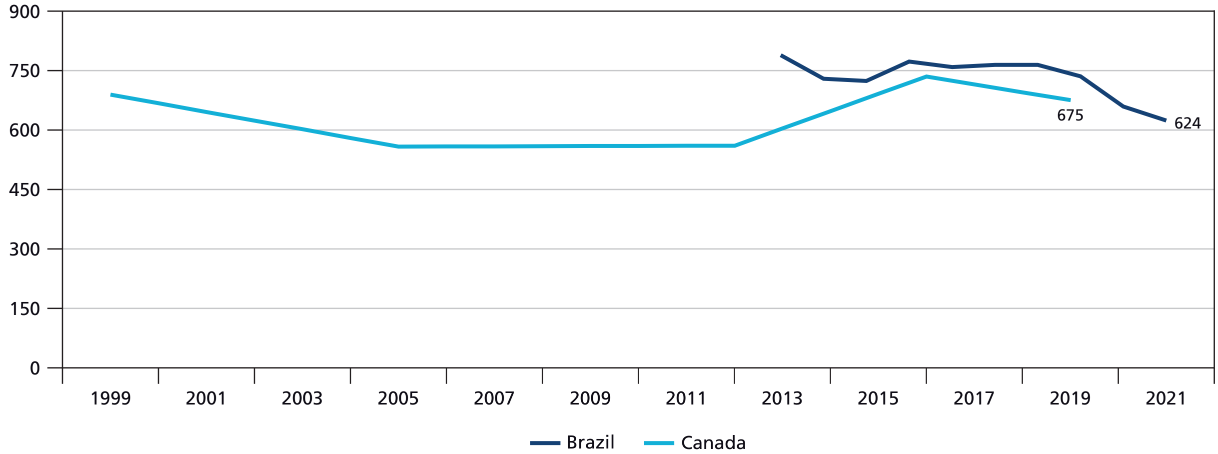
FIGURE 11
Total value of private pension funds in Canada and Brazil
(In % of GDP)



Source: Statistics Canada; PREVIC/SUSEP; World Bank and OECD national accounts data.
Author's elaboration.

Despite this disparity, when controlling for per capita GDP, the average pension plan value for EPP holders in Brazil is comparable to that in Canada (figure 12). This suggests that Brazilian employees with access to EPPs can save proportionally as much as their Canadian counterparts.

FIGURE 12
Average pension plan value for those holding EPPs as percentage of GDP per capita



Source: Statistics Canada and PREVIC/SUSEP data.
Author's elaboration.

6 THE CANADIAN RRSP AND THE BRAZILIAN PGBL[16]

The Canadian Registered Retirement Savings Plan (RRSP) was introduced in 1957 through an amendment to the Income Tax Act. Its primary objective was to incentivize retirement savings by offering tax advantages similar to those available to members of EPPs. Over time, RRSPs have become a cornerstone of retirement planning in Canada, allowing for a diverse range of investments, including savings accounts, mutual funds, and stocks. Key tax benefits include the deferral of taxes on contributions and investment income until withdrawal.

In Brazil, the Free Benefit Generating Plan (Plano Gerador de Benefício Livre – PGBL) serves as the equivalent to the RRSP. Introduced in 1998 as part of broader pension

16. Although the Life Benefit Generator Plan (Vida Gerador de Benefício Livre – VGBL) is also classified as a pension instrument, in this paper we do not use it alongside the PGBL for two reasons: the VGBL is more commonly used as an estate planning tool; and there is no equivalent to the VGBL in Canada, making the comparison inappropriate.

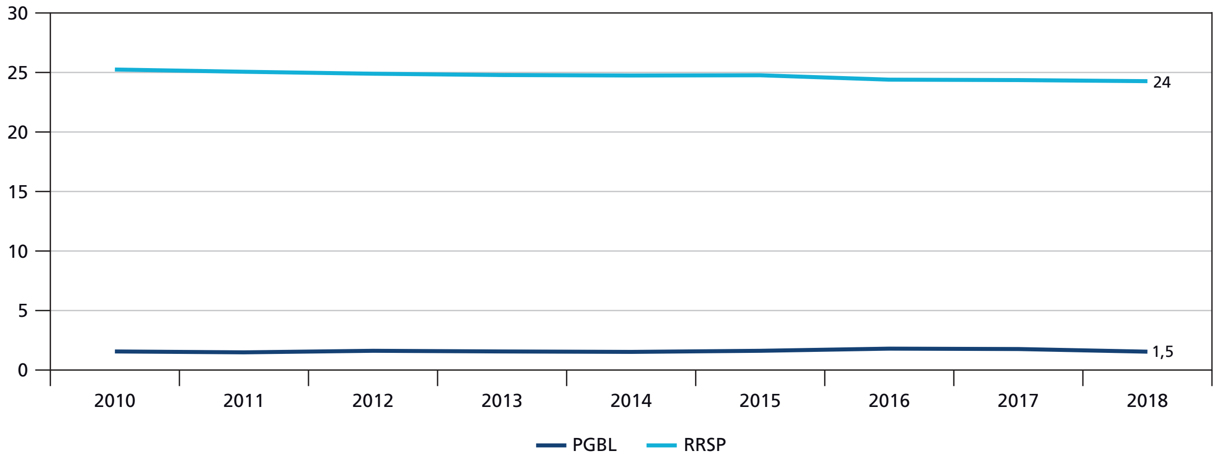
system reforms, the PGBL aims to encourage private retirement savings by offering tax-deductible contributions up to a specified limit. Like the RRSP, the PGBL allows individuals to accumulate savings for retirement while benefiting from tax deferral.

6.1 Participation and Contributions

As shown in figure 13, the percentage of the working-age population contributing to RRSPs in Canada (24.7%) is 15 times higher than the percentage contributing to PGBLs in Brazil (1.6%). This disparity is partly due to the RRSP's earlier introduction and longer history of development. Initially, RRSP participation was modest, with only 172,000 contributors in 1968. However, by the late 1980s, participation surged to nearly 3.5 million individuals, driven by increased awareness of retirement savings needs, higher contribution limits, and greater labor force participation, particularly among women (Frenken, 1990). By 2018, 6 million Canadians held RRSP accounts.

FIGURE 13

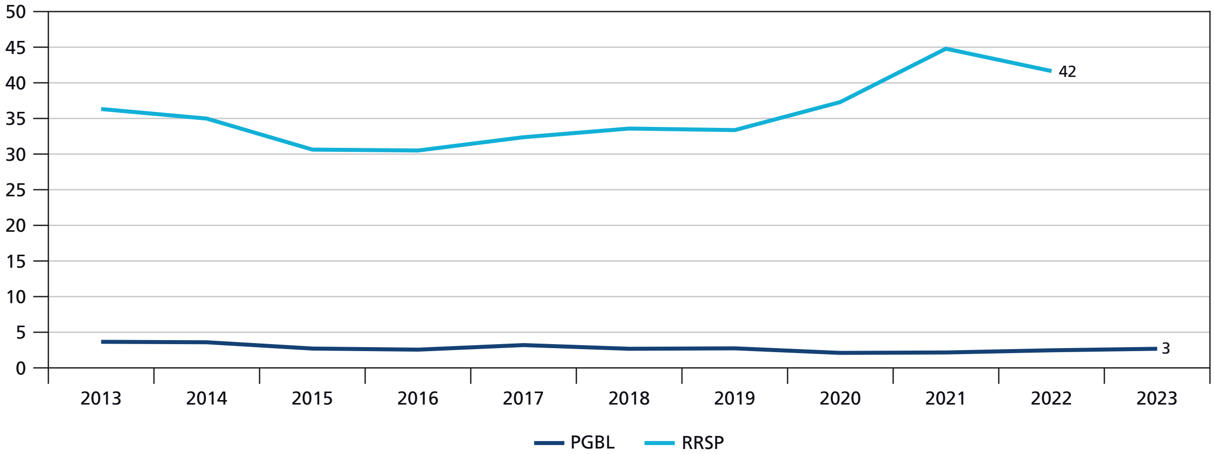
Number of Contributors to RRSP or PGBL as a percentage of population aged 15-64



Source: FINAPREVI; UFRJ; COETI; CGPEC; DERPC; and Statistics Canada data. Author's elaboration.

The higher participation rate in Canada, combined with its greater per capita income, results in total annual RRSP contributions being 13 times higher than PGBL contributions in Brazil (figure 14).

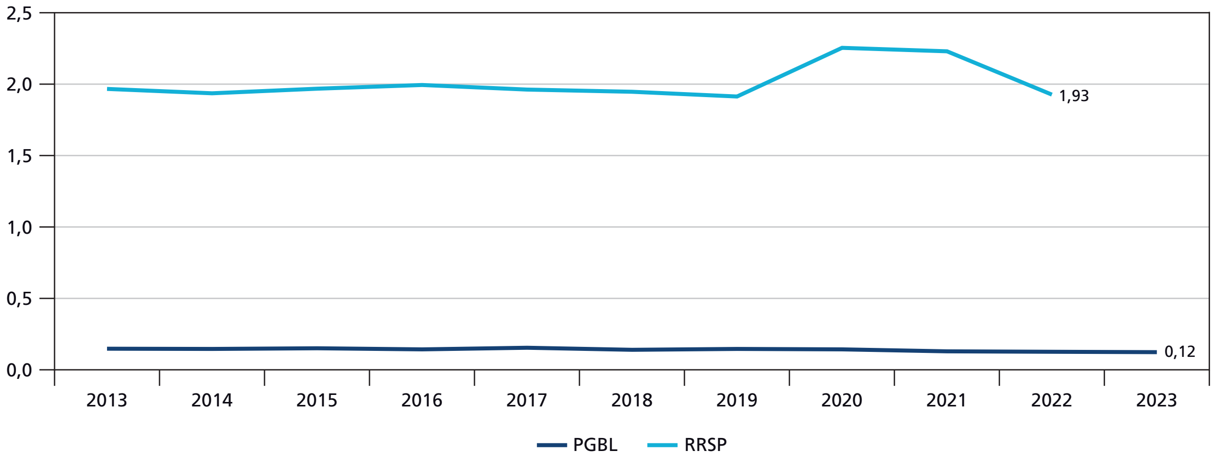
FIGURE 14
Total annual contributions to PGBL and RRSP
(In billion USD)



Source: SUSEP; COETI; CGPEC; DERPC; and Statistics Canada data.
Author's elaboration.

Even when adjusted for GDP, RRSP contributions are 14 times higher than PGBL contributions (figure 15). Notably, the spike in RRSP contributions between 2019 and 2022 is attributed to the Covid-19 pandemic, during which reduced spending on travel led to increased investments in financial instruments like RRSPs. This trend was not observed in Brazil.

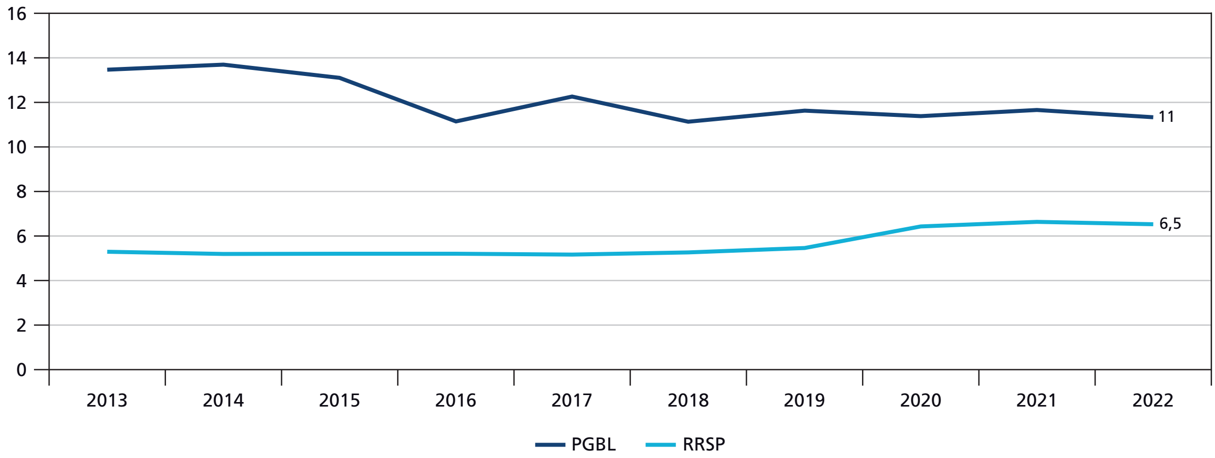
FIGURE 15
Annual contributions to PGBL and RRSP as percentage of GDP



Source: SUSEP/COETI/CGPEC/DERPC, IBGE and Statistics Canada data.
Author's elaboration.

Despite lower overall participation, the average annual contribution to PGBLs as a percentage of per capita income is higher than that of RRSPs (figure 16). This indicates that PGBL contributors in Brazil tend to belong to higher income percentiles compared to RRSP contributors in Canada. Consequently, while private retirement savings instruments like PGBLs and RRSPs are more widely utilized in Canada, Brazilian contributors demonstrate a relatively higher savings intensity.

FIGURE 16
Annual average contribution to PGBL and RRSP as percentage of per capita income



Source: PREVIC; SUSEP; COETI; CGPEC; DERPC; IBGE and Statistics Canada data. Author's elaboration.

The analysis highlights significant differences in the structure, participation, and performance of EPPs and private retirement savings vehicles (RRSPs and PGBLs) in Canada and Brazil. Canada's higher per capita income, longer history of retirement savings instruments, and greater participation rates contribute to its more robust pension system. However, Brazilian participants in EPPs and PGBLs exhibit comparable savings intensity when adjusted for income, suggesting potential for growth in private retirement savings with targeted policy interventions. These findings underscore the importance of expanding access to and awareness of private pension plans in Brazil to address demographic challenges and ensure long-term fiscal sustainability.

7 POLICY RECOMMENDATIONS FOR PENSION SYSTEM REFORM IN BRAZIL

The demographic and fiscal challenges outlined in the previous sections underscore the urgent need for comprehensive pension system reforms in Brazil. The aging population, declining fertility rates, and rising OADR are placing increasing pressure on the public PAYG system, which is already facing significant deficits. To ensure long-term fiscal sustainability and mitigate the adverse economic impacts of an aging population, Brazil must increase the weight of the private portion of its pension system. This section proposes a series of policy recommendations to achieve this objective.

7.1 Expand Access to Employer-Sponsored Pension Plans

As of 2019, only 2.4% of Brazil's working-age population participates in EFPCs, compared to 32.1% in Canada (figure 10). This low participation rate limits the potential of private pension savings to alleviate pressure on the public system.

The Brazilian government should incentivize the creation and expansion of EFPCs, particularly for SMEs. This could be achieved through tax incentives for employers who establish or contribute to EFPCs, as well as simplified regulatory requirements to reduce administrative burdens. Increased participation in EFPCs would diversify retirement savings sources, reduce reliance on the public system, and provide workers with additional financial security in retirement.

7.2 Promote the Free Benefit Generating Plan (PGBL)

The PGBL, Brazil's equivalent to Canada's RRSP, has a participation rate of only 1.6% of the working-age population, compared to 24.7% for RRSPs in Canada (figure 13). This low uptake limits the potential of individual retirement savings to complement public pensions.

The government should launch public awareness campaigns to educate citizens about the benefits of PGBLs, including tax advantages and long-term financial security. Additionally, contribution limits for PGBLs could be increased to encourage higher savings rates. Greater participation in PGBLs would increase private retirement savings, reduce the fiscal burden on the public system, and provide individuals with more control over their retirement funds.

7.3 Encourage Voluntary Savings Through Tax Incentives

Brazil's tax system currently offers limited incentives for voluntary retirement savings beyond PGBLs and EFPCs. This discourages individuals from taking proactive steps to save for retirement.

Introducing new tax-advantaged savings vehicles – such as individual retirement accounts (IRAs) modeled after successful systems in Canada and the United States – could offer significant benefits. These accounts would allow for tax-deductible contributions and tax-deferred investment growth. By providing such incentives, individuals would be encouraged to save more voluntarily, reducing dependence on the public pension system and promoting a culture of long-term financial planning.

7.4 Facilitate Portability of Pension Plans

Workers who change jobs often face challenges in transferring their pension savings, particularly in the case of EFPCs. This lack of portability discourages participation in private pension plans.

To strengthen retirement security, regulations can be implemented to ensure the portability of pension savings across employers and plans. This could include standardized transfer procedures and the development of centralized pension registries to track individual savings. Enhancing portability would increase participation in private pension schemes by offering workers greater flexibility and confidence in managing their retirement funds throughout their careers.

7.5 Leverage Immigration to Address Demographic Imbalances

Brazil's net migration rate is projected to remain close to zero in the coming decades, limiting the potential for immigration to offset population aging (figure 8). Unlike Canada, Brazil lacks a proactive immigration policy to attract working-age migrants.

To address the challenges of an aging population, one effective solution is to develop targeted immigration policies aimed at attracting skilled workers and their families – particularly from countries with younger demographics. This approach could include streamlined visa procedures, employer incentives to hire migrants, and robust integration programs to support successful settlement. By expanding the working-age population, increased immigration would help mitigate demographic pressures and enhance the long-term sustainability of the pension system.

7.6 Strengthen Financial Literacy and Retirement Planning Education

Many Brazilians lack awareness of the importance of private retirement savings and the tools available to them, such as PGBLs and EFPCs. This limits participation in private pension plans.

To strengthen retirement outcomes, nationwide financial literacy programs should be implemented to educate citizens on private savings, retirement planning, and the risks of over-reliance on public pensions. Integrating these programs into schools and workplaces would boost participation in private pension plans, empower informed decision-making, and ease long-term fiscal pressure on the public system.

7.7 Reform the Public Pension System to Complement Private Savings

Brazil's public pension system is projected to consume 13.9% of GDP by 2060, up from current levels (figure 9). This unsustainable growth threatens fiscal stability and limits resources for other public services.

To ensure the sustainability of the public pension system, key reforms should be considered – such as gradually raising the retirement age, adjusting benefit formulas, and introducing means-testing for higher-income retirees. These measures should complement, not replace, private savings initiatives. A more balanced system would reduce fiscal deficits, free up resources for other priorities, and encourage greater reliance on individual retirement planning.

To sum up, the demographic trends and fiscal challenges facing Brazil's pension system necessitate a shift toward greater reliance on private retirement savings. By expanding access to employer-sponsored pension plans, promoting individual savings vehicles like PGBLs, and implementing complementary reforms to the public system, Brazil can create a more balanced and sustainable pension framework. These reforms will not only alleviate pressure on public finances but also provide individuals with greater financial security in retirement, ensuring long-term economic stability and growth.

8 CONCLUSION

This paper has provided a comprehensive analysis of the historical evolution, structural frameworks, and demographic challenges of the pension systems in Brazil and Canada. By examining the development of these systems, the study highlights the urgent need for Brazil to reform its pension system to address the fiscal pressures imposed by population aging and declining fertility rates. Drawing on lessons from Canada's more balanced and resilient three-pillar system, this paper has proposed a series of policy recommendations to increase the role of private retirement savings in Brazil.

This paper presented a brief historical evolution of the Brazilian and Canadian pension systems. Both Brazil and Canada have undergone significant pension system reforms in response to demographic and economic changes. Canada's system, with its integration of universal public benefits, mandatory contributory plans, and voluntary private savings, has proven adaptable and sustainable. In contrast, Brazil's system remains heavily reliant on its public pillar, which faces growing fiscal imbalances.

Population aging, declining fertility rates, and rising old-age dependency ratios are placing increasing strain on Brazil's pension system, necessitating reforms to ensure long-term sustainability. Brazil's low participation in private pension plans, such as EFPCs and individual savings vehicles (PGBLs), highlights the need to expand access and incentivize private retirement savings.

To address these challenges, this paper proposes the following reforms for Brazil: incentivize the creation of EFPCs and promote individual savings vehicles like PGBLs through tax benefits and public awareness campaigns; create new retirement savings options, such as IRAs, to encourage voluntary savings; implement nationwide programs to educate citizens about retirement planning and the benefits of private savings; reform the public pension system, gradually increasing the retirement age, adjusting benefit formulas, and introducing means-testing to ensure the public system complements private savings; leverage immigration by developing targeted immigration policies to attract working-age migrants, mitigating the effects of population aging; facilitate pension portability by ensuring workers can easily transfer pension savings across employers and plans to encourage participation in private pension systems.

In addition to these measures, both Brazil and Canada would benefit from policies aimed at reversing declining fertility rates – an often overlooked but critical component of long-term demographic sustainability. Governments should consider implementing family-friendly initiatives such as subsidized childcare, extended parental leave, flexible work arrangements, and financial incentives for families. These policies can help create a more supportive environment for child-rearing, gradually stabilizing fertility rates and reinforcing the sustainability of pension systems.

Canada's pension system offers valuable lessons for Brazil, particularly in its balanced approach that combines a robust public pillar with strong private retirement savings mechanisms. The success of Canada's RRSPs and EPPs demonstrates the importance of tax incentives, financial literacy, and regulatory frameworks that encourage private savings. Brazil can draw on these lessons to build a more sustainable and inclusive pension system.

While this paper provides a comprehensive analysis of the challenges and opportunities for pension reform in Brazil, several areas warrant further research, such as the impact of technological advancements, exploring how digital tools and fintech innovations can improve access to and participation in private pension plans; behavioral economics of retirement savings, investigating the behavioral factors that influence savings decisions and how they can be leveraged to increase participation in private pension systems; long-term effects of immigration, assessing the potential long-term demographic and economic impacts of immigration policies aimed at addressing population aging; cross-country comparisons, conducting comparative studies of pension reforms in other emerging economies to identify additional best practices and lessons for Brazil.

Finally, the demographic and fiscal challenges facing Brazil's pension system are significant but not insurmountable. By increasing the weight of private retirement savings, Brazil can create a more balanced and sustainable pension framework that ensures financial security for retirees while safeguarding fiscal stability. The reforms proposed in this paper, informed by Canada's experience, provide a roadmap for achieving these goals. However, successful implementation will require political will, public support, and ongoing research to adapt to evolving demographic and economic conditions. Ultimately, a reformed pension system will not only benefit current and future retirees but also contribute to Brazil's long-term economic growth and social development.

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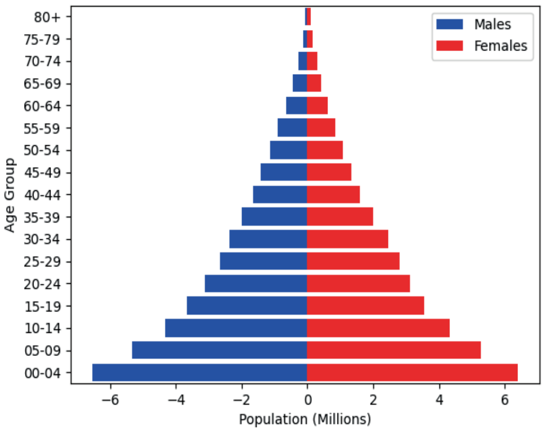
APPENDIX

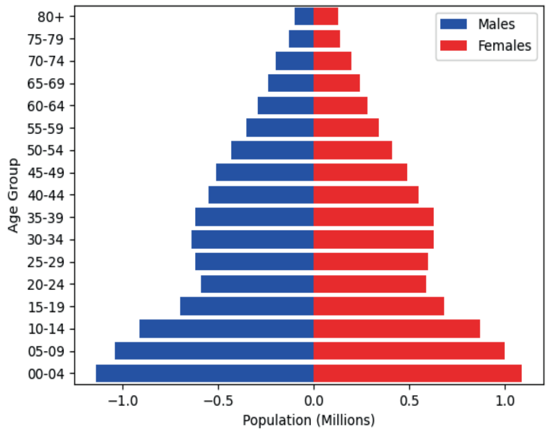
FIGURE A1

Age Pyramids - Brazil and Canada from 1960 to 2040

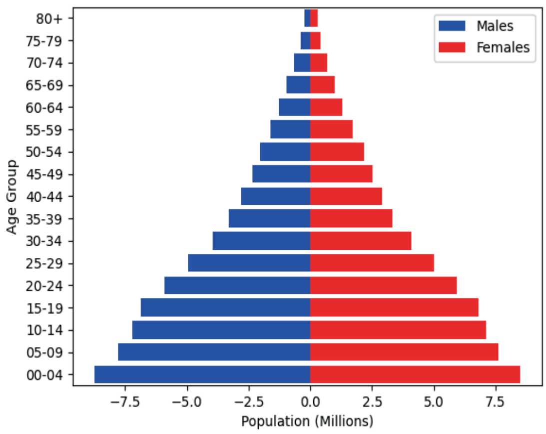
A1A – Brazil 1960



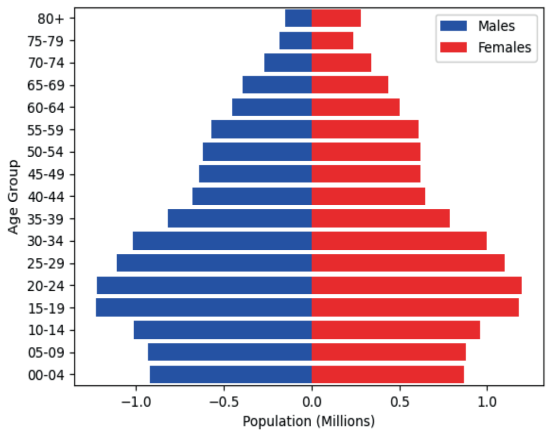
A1B – Canada 1960



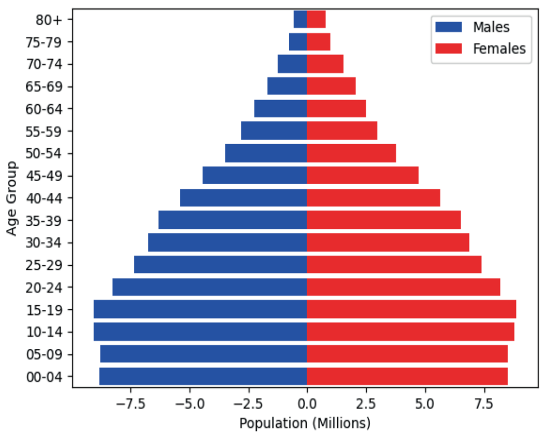
A1C – Brazil 1980



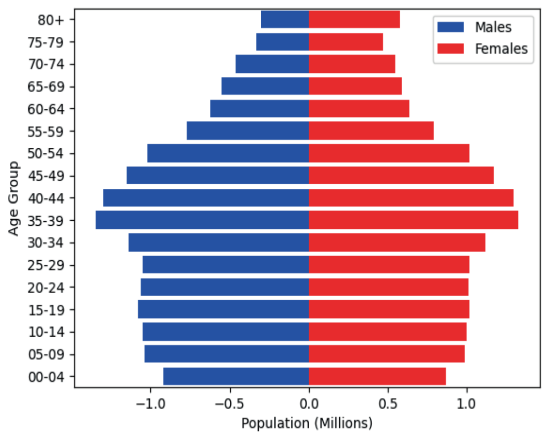
A1D – Canada 1980



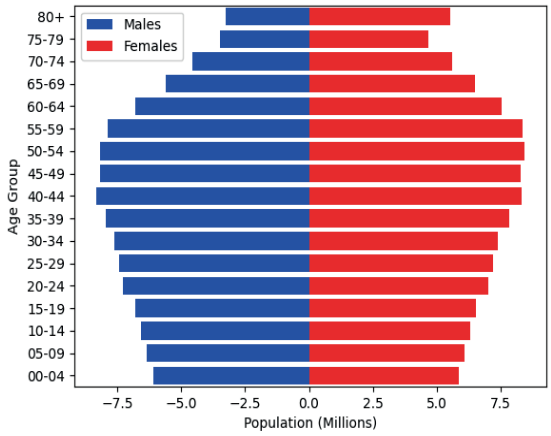
A1E – Brazil 2000



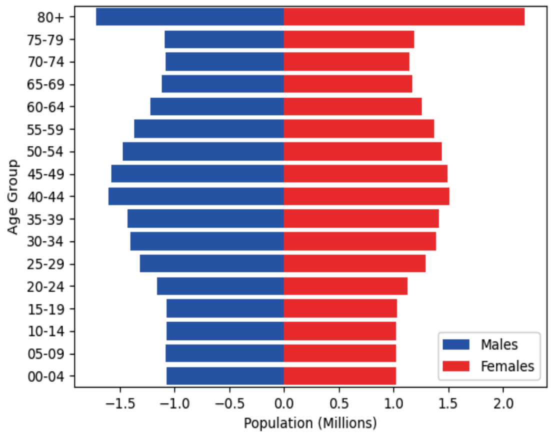
A1F – Canada 2000



A1G – Brazil 2040



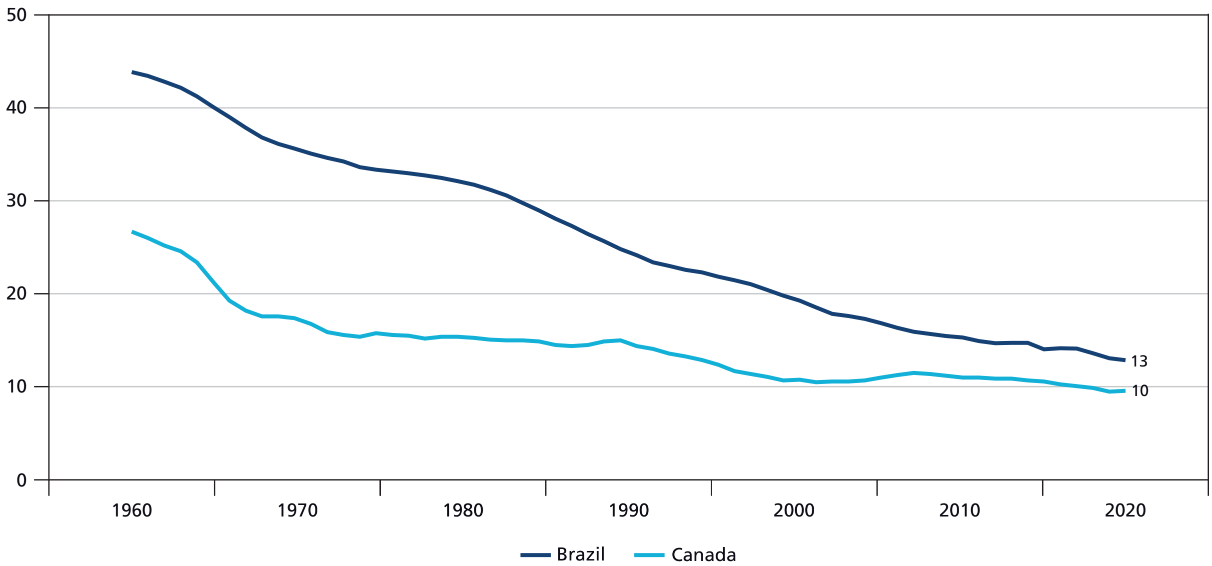
A1H – Canada 2040



Source: World Bank data.
Authors' elaboration.

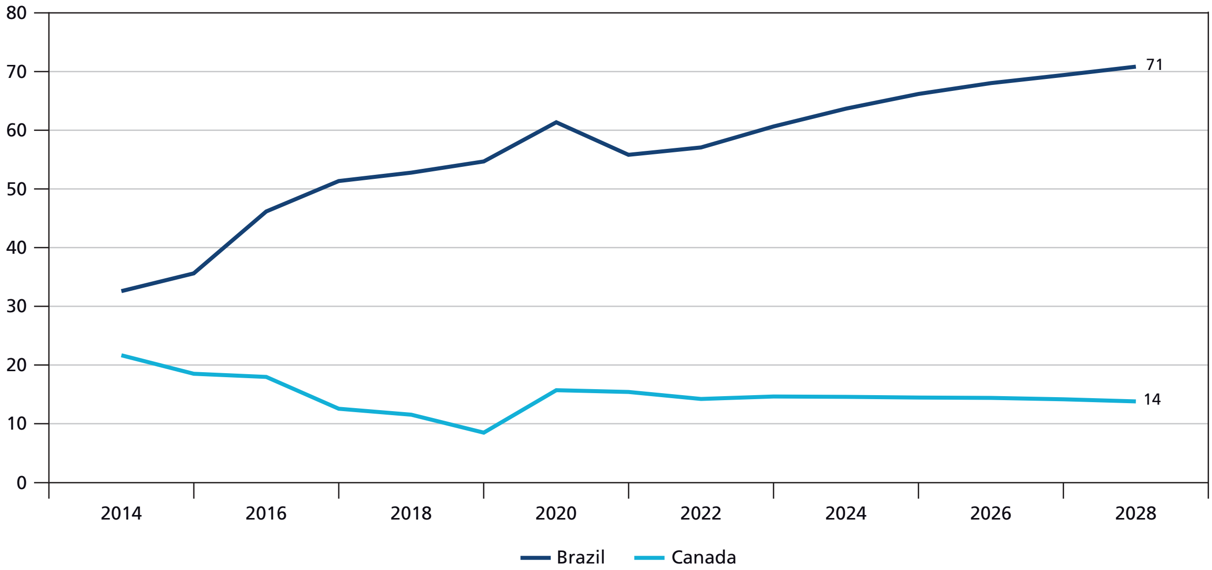
FIGURE A2

Birth Rate (children born alive per year per 1,000 people)



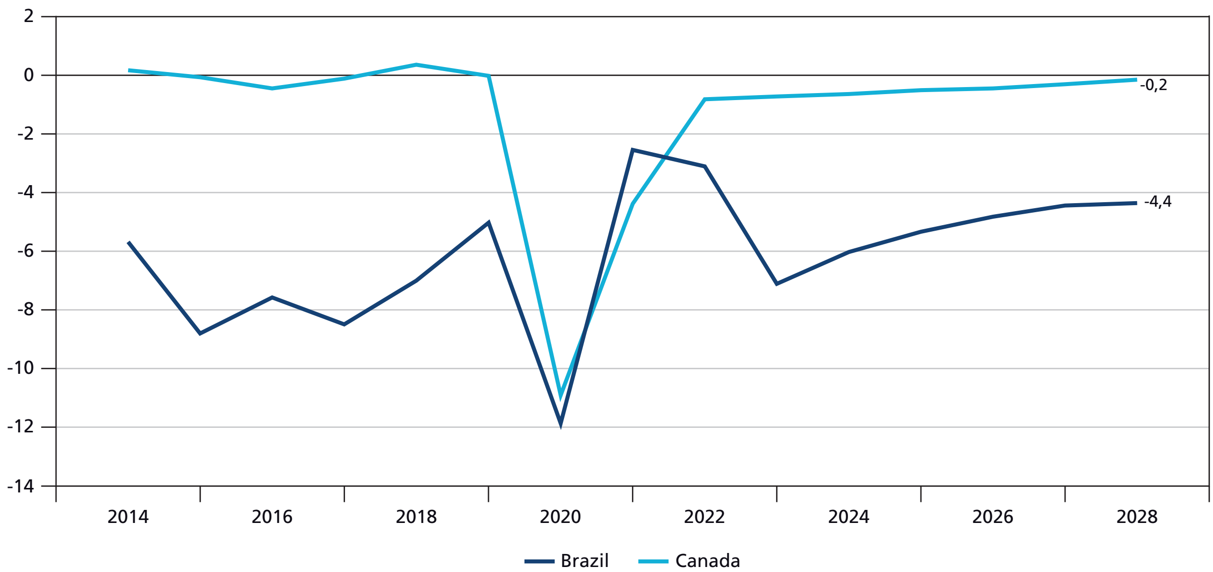
Source: World Bank data.
Authors' elaboration.

FIGURE A3
General Government Net Debt
(In % of GDP)



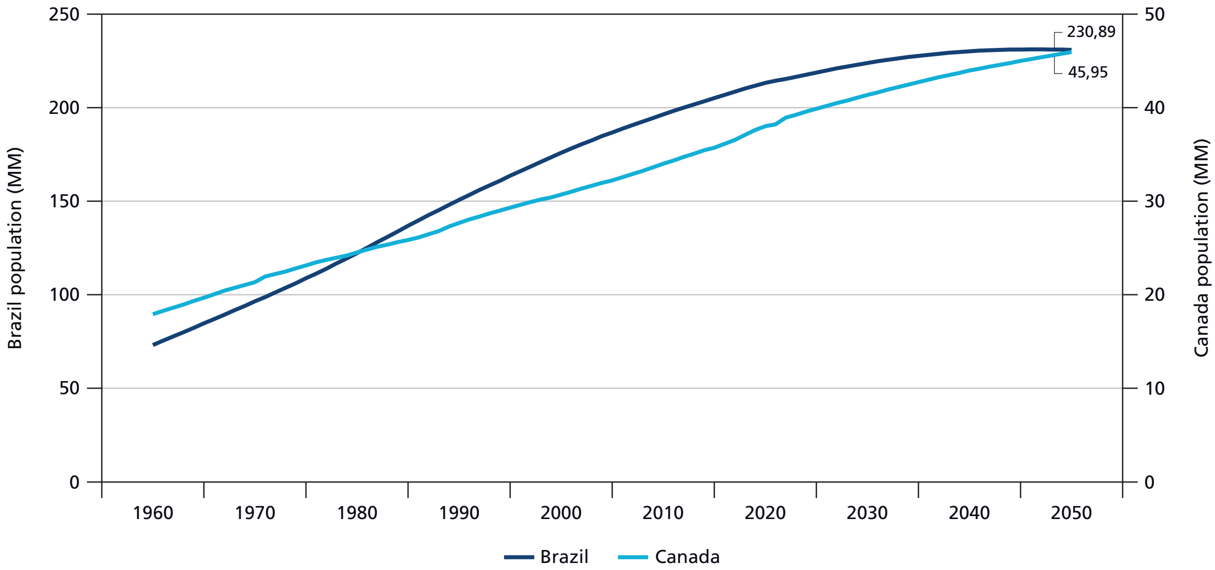
Source: IMF Fiscal Monitor, 2023.
Authors' elaboration.

FIGURE A4
General Government Overall Balance
(In % of GDP)



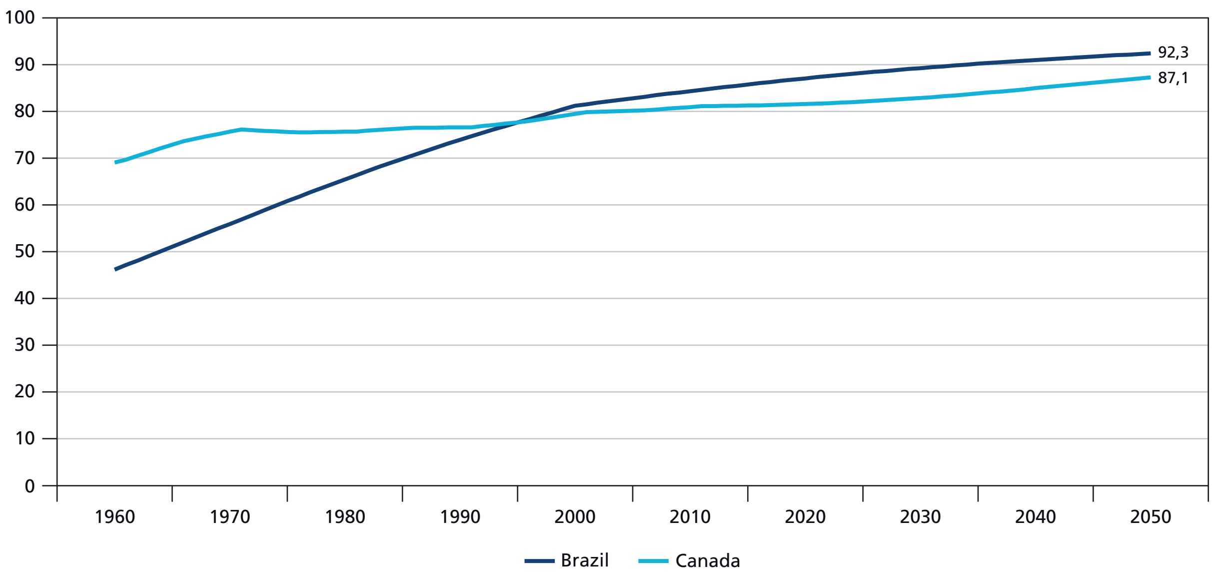
Source: IMF Fiscal Monitor, 2023.
Authors' elaboration.

FIGURE A5
Population (MM)



Source: World Bank data.
Authors' elaboration.

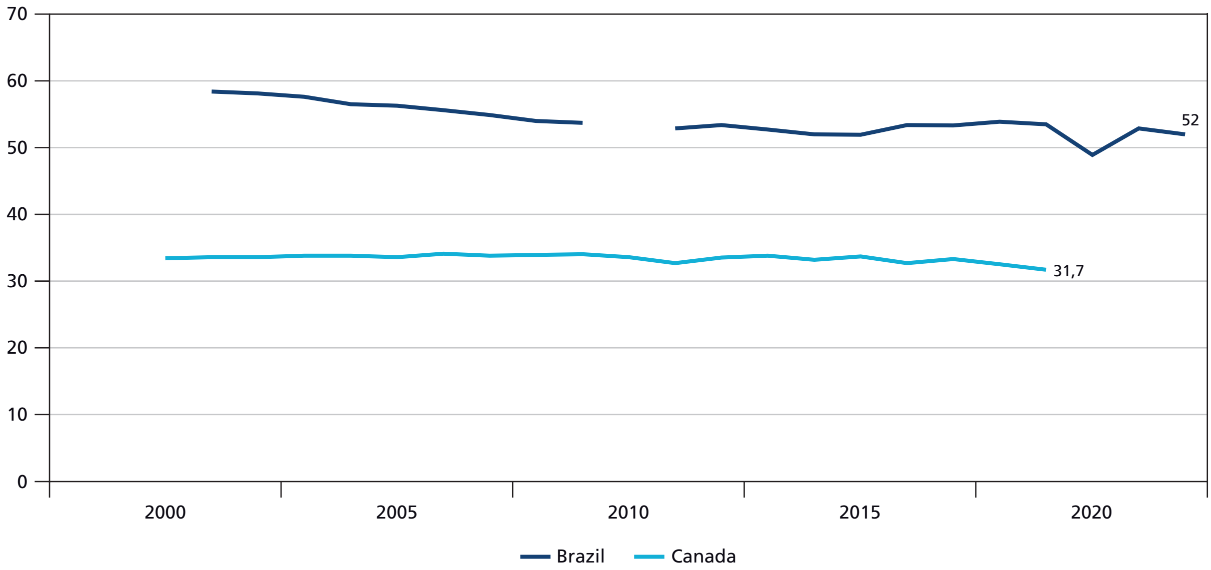
FIGURE A6
Urban Population
(In %)



Source: World Bank data.
Authors' elaboration.

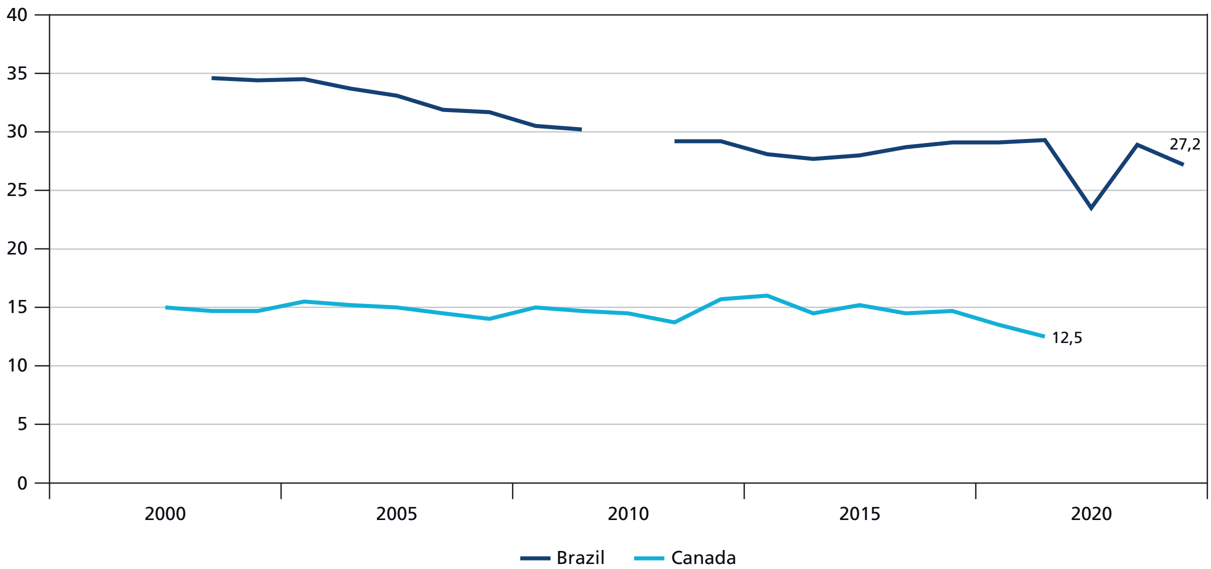
The following charts explain the PGBL numbers

FIGURE A7
Gini Index



Source: World Bank data.
Authors' elaboration.

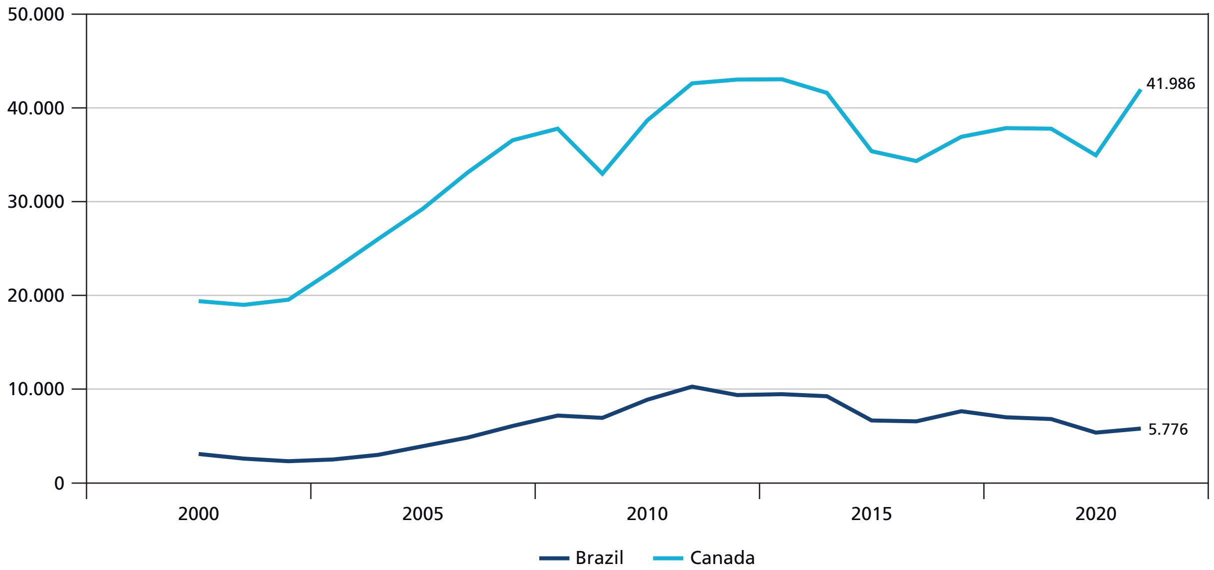
FIGURE A8
Poverty headcount ratio at societal poverty line
(In % of population)



Source: World Bank data.
Authors' elaboration.

FIGURE A9

Adjusted net national income per capita (current US$)



Source: World Bank data.
Authors' elaboration.

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