

Swedish Pension Reform of 1999

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ABSTRACT

This thesis studies the Swedish pension reform of 1999 on taxpayer pressure. It aims to bridge the gap in the literature by providing an empirical assessment of this reform. It starts by defining taxpayer pressure as the ratio of the average pension amount paid out per capita to the average amount contributed per capita and estimates the effect of the reform on it in two ways. First, by constructing of a counterfactual of the required contribution rate to maintain today's level of payouts in the absence of reform. Second, by estimating an ordinary-least-squares regression of the taxpayer pressure on the lagged reform dummy and net migration. The main findings of this thesis are that the Swedish national AP funds, that were used to store excess contributions and buffer the system in times of need, were central to the policy's success. Second, following the policy change, a higher taxpayer pressure is observed indicating that the success of the reform came partially at the cost of reducing the average pay-out in relation to the average pay-in.

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List of Abbreviations:

PAYG: Pay-As-You-Go

DC: Defined Contribution

DB: Defined Benefit

NDC: Notional Defined Contribution

ATP: Tilläggspension or the earning related supplementary pension under the old system

ABM: Automatic Balancing Mechanism

1. INTRODUCTION

Since the 1990s, when the World Bank published their report calling for the reform of pension systems, policymakers have been aware of the effects of ageing populations and the need for action (The World Bank 1994). With the proportion of retirees relative to taxpayers increasing with every year, and projected to further increase, the pay-as-you-go (PAYG) systems are proving to become more unsustainable (European Commission 2024). In order to combat this, the World Bank proposed the three-pillar structure: the first is mandatory publicly managed, the second is mandatory, fully funded privately managed, and the third is the private pensions. This thesis focuses on the Swedish pension reform of the first pillar in 1999.

The aim of the thesis is to answer the research question of how the introduction of a funded¹ element to the first pillar of the Swedish pension system affected taxpayer pressure. This thesis defines taxpayer pressure as the relation of the amount contributed to the amount paid out. How much does the average taxpayer need to put in in order to receive the average pension upon retirement? To measure this, the ratio of the average pay-out per capita to the average pay-in per capita is calculated for 1995-2023. This sort of empirical research not only bridges the gap in the literature, that has so far provided mostly descriptive analysis of the reform, but provides policymakers with an important measure of the effectiveness of such a policy change as well as the per capita cost and benefit.

In summary, the key elements of the Swedish pension reform were as follows (Sundén 2006):

- 1) Introduction of a funded element (premium pension) alongside the PAYG element (income pension) in the first pillar.
- 2) Transitioning from a defined benefit (DB) to a notional-defined contribution (NDC) scheme. This fixes the obligations of the contributors to the system rather than promising specific payouts to current retirees.

¹ 'Funded' refers to the accumulation of assets that is invested later on paid out to the retirees in contrast to PAYG systems that have a redistributory effect across generations.

- 3) Instead of using the best 15 years of income as a measure for the calculation of pension payouts, individuals earn credits for every Swedish Crown contributed to the system. These are then recorded as the liabilities owed by the system to future retirees.
- 4) Introduction of the Automatic Balancing Mechanism (ABM) that would reduce the indexation of pension liabilities (credits) if the assets were to ever fall below liabilities reducing the need to take on additional debt to finance the liabilities.
- 5) Reform of the AP funds (Allmän Pension²), Swedish public pension funds used to provide a buffer in times of economic downturn, to become more diversified yielding higher returns.

To answer this research question, a two-part empirical analysis is conducted. First, a counterfactual scenario is constructed to estimate the stress that the system would have experienced today in the absence of reform with the current demographic conditions. Since the contribution rate in Sweden has been fixed at 18.5%, the hypothetical contribution rate, that would have been needed to achieve the same payouts under the old system as those that actually happened is taken as a measure of pressure. In other words, what would the contribution rate need to be today in order to maintain the same level of average payout per capita. For this, the basic notion of the PAYG system is utilized where the total amount contributed equates the total amount paid out, excluding administration costs from the calculation. Second, an ordinary-least-squared (OLS) specification is estimated with the taxpayer pressure on the left-hand-side and the five-year lag of the reform dummy and net migration index on the right-hand-side. The latter is important as it affects the total number of contributors and possibly the average wage which are discussed in more detail in subsequent sections. Two baseline regressions without lags and the net migration index are estimated as well.

The main results this thesis puts forth are twofold. From theoretical research, it is seen that the AP funds had a significant, positive effect on the policy's success. They have been consistently used to cover liabilities in the years where contributions fell short. In fact, one of the key concerns in the 90s was that the AP funds would run out by early 2010s and the demographic pressure would be too high for the system to function (Könberg, Palmer, and Annika 2006, 459). Secondly, in the five years following the reform, taxpayer pressure is

² Swedish for general pension. There are four Swedish AP funds used as buffer if contributions fall short.

approximately 0.115 units higher, on average. This suggests that the stabilizing effect came at the expense of a lower average payout per capita. Moreover, approximately 3.2 taxpayers are needed for every pensioner indicating a sustainable proportion and a more optimistic outlook than what was projected in the 1990s (Klevmarken 2002). These findings support existing research that the reform has been a success rendering the Swedish pension system more sustainable, but nearly 25 years later is in need of revision (Aspegren, Durán, and Masselink 2019; Strandhäll 2017).

From a macroeconomic perspective, the reform can be described as partial prefunding which shifts the risk of unfunded liabilities from the government to future retirees. This provides the possibility of higher returns in the future, but also forces the retirees to bear the risks of market volatility. Stability of the system comes from directly linking future payouts to today's contributions creating higher incentives to work reducing the possibility for future tax hikes.

This thesis utilizes 13 datasets to estimate the effect of the policy change on taxpayer pressure. Data on pension payouts and pensionable income is obtained from the Swedish Statistical Yearbooks (Statistiska Centralbyrån 1998–2006), and from Pensions Myndigheten (2005–2024; 2004–2023) for data post 2004. Eurostat (1992–2020) provides statistics on the number of workers and net migration statistics is taken from Macro Trends (1960–2025). The number of pensioners is taken from Pensionsmyndigheten (1985–2002; 2003–2024), and the yearly average wage is obtained from the OECD (1995–2023). Last, but not least, data on AP fund balances, net flows and returns is obtained from the annual reports on each of the four funds found on their official websites (Första AP-fonden 2014–2024; Fjärde AP-fonden 2001–2014; 2014–2024; Andra AP-fonden 2001–2024; Tredje AP-fonden 2000–2023).

Importantly, the data utilized is not perfect for several reasons. Prior to 2005, due to lack of availability, the variables of interest have not been measured for the purpose of analysis resulting in lower accuracy. One example being pensionable income. After 2004, clean data on pensionable income can be found and downloaded with minimal cleaning required. Prior, however; a proxy using total income earned is constructed, the exact steps for which are described in more detail later on. These kinds of manipulations introduce additional variation, thus affecting the results.

This thesis fills a research gap present in the literature. There are many published works on the Swedish reform itself providing extensive descriptive analysis of the old and new systems with limited empirical elements (Aspegren, Durán, and Masselink 2019; Klevmarken 2002; Pensionsmyndigheten 2024; Sundén 2006). There is also literature providing empirical analysis of other pension reform (Borsch-Supan 2004; Holzner, Jestl, and Pichler 2022). The gap lies in econometric estimation of the reform. Expenditure on pensions is one of the largest as proportion of GDP. It is important to know the actual effect of a policy change as such to be able to determine how to act in the future and which policy recommendations to make. The reform's implementation took more than 10 years, from the time of introduction and design to the time of experiencing benefits. Reform reversals could be even more expensive than their implementation (Baksa, Munkacsi, and Nerlich 2020). This thesis aims to estimate the effect of the policy empirically, and pave a path for future research with a replicable methodology that could be applied on cleaner data, such as microdata.

In the following sections, the structure of pension systems will be outlined in more detail. Namely, PAYG, DC, DB and NDC. Similar reforms to Sweden will be discussed briefly before moving on to the actual case study where more detail of the reform will be provided. Then, before the empirical analysis, a descriptive analysis of the main variables of interest will be provided to see the bigger picture of economic and demographic conditions during 1995-2023. This thesis concludes with a discussion of the results and a main policy recommendation to establish funds to be used as buffers to offset demographic shocks.

2. LITERATURE REVIEW

In 1994, the World Bank published a landmark report titled "Averting the Old Age Crisis: Policies to Protect the Old and Promote Growth." (The World Bank 1994). This report became a foundational text for global pension reform discussions in the late 20th and early 21st centuries. It warned that traditional pay-as-you-go pension systems, which dominated in many countries, were becoming financially unsustainable due to demographic shifts such as aging populations and declining birth rates. The report argued that without significant reform, countries would face mounting fiscal burdens that could threaten both economic growth and the financial security of future retirees.

The World Bank proposed a new framework often summarized as a "three-pillar model" for pension systems. The first pillar was to be a publicly managed, mandatory pension aimed at preventing poverty in old age. The second pillar was a mandatory, privately managed, fully funded pension based on individual savings. The third pillar was a voluntary, additional savings mechanism to supplement the first two. This structure aimed to balance social protection, economic efficiency, and personal responsibility. The report emphasized the need to strengthen the link between contributions and benefits, encouraging work and saving while limiting the redistributive and fiscal pressures of public pensions (The World Bank 1994).

Pension systems around the world are typically categorized by their financing methods and benefit structures. A pay-as-you-go (PAYG) system is financed by current workers' contributions, which are immediately used to pay benefits to current retirees, without building up individual savings. By contrast, a funded system involves accumulating savings over time, with individual or collective contributions invested to finance future retirement benefits. Unfunded systems are synonymous with PAYG, relying on ongoing contributions rather than pre-accumulated assets.

Within these financing models, pension schemes can be structured as either defined benefit (DB) or defined contribution (DC). In DB schemes, retirees are promised a specific benefit, typically based on salary history and years of service, with the financial risk borne by the plan sponsor (often the government or employer). In DC schemes, individuals' retirement income depends directly on the contributions made and the investment returns achieved, shifting the financial risk to the individual. Additionally, pension systems may include basic

pensions (universal or means-tested minimum benefits) and occupational or voluntary private pensions that supplement the public system (European Commission 2024).

Some countries, such as Sweden and Italy, have introduced notional defined contribution (NDC) systems, which mimic DC logic by linking pension benefits to lifetime contributions, but operate within a PAYG framework without actual investment funds. Contributions are recorded in notional accounts which become system liabilities to future retirees, and benefits are adjusted based on demographic and economic factors (Marano 2006; Sundén 2006). Other countries such as Poland (Michal 1998) and Hungary (Palacios and De Rezende Rocha 1998) have also introduced pension reforms as well as partial or full reversals later on.

One notable publication that seeks to answer a similar research question as this thesis, and is one of the only empirical analyses on the topic out there. The paper examines the trend of pension reform in Europe, particularly the increased popularity of a multi-pillar architecture, a move from DB to DC and a lower dominance of PAYG systems. The risks associated with private DC schemes are examined, particularly in the context of market fluctuations. The authors argue that although pension schemes by design are consumption smoothing, private DC schemes could potentially increase macroeconomic fluctuations. It is a panel research that estimates the effect of private DC schemes on GDP volatility, consumption and investment of 35 OECD countries (Holzner, Jestl, and Pichler 2022).

While these publications are insightful and important, they do little to answer empirically the effect of such pension reform on the taxpayers. After all, at their core, pensions are consumption smoothing mechanisms aimed at preventing financial hardship in retirement and excessive stress during working years. They are a social guarantee for the elderly who have become structurally dependent in a capitalist system (Townsend 1981). The core contribution of this research is the establishment of an empirical framework in the evaluation of a pension system reform as unique as this where no controls can be observed.

In the following section, a more in-depth look will be taken at the reform that occurred in Sweden in 1999. These are several reasons for this country being the choice for the case study. Firstly, it has sufficient data pre and post reform. Secondly, this pension reform is still present today and has not been dismantled like in Hungary or Poland. Second, this reform was a clear legislation that was passed and thus a part of the Swedish

law, and there is a clear before and after. Unlike the Netherlands that have de-facto pension fund coverage of the majority of the population, but no clear legislation and Switzerland which had waves of reforms implemented since the 70s (Marano 2006; Michal 1998; Palacios and De Rezende Rocha 1998; Sundén 2006; Westerhout, Ponds, and Zwaneveld 2024). This is by no means an exhaustive list.

a) Sweden Case Study

In response to demographic pressures and sustainability concerns, Sweden implemented significant reforms of its public pension system in 1999. Previously, the pension system comprised a basic universal pension (Folkpension), funded from taxes rather than contributions, and an earnings-related supplementary pension known as Tilläggspension (ATP), which was calculated based on an individual's highest 15 earning years with the condition that they meet at least 30 working years in Sweden. This type of calculation had a redistributory effect from individuals with a flatter lifetime earnings curve (typically low-income workers) to those with a steeper lifetime earnings curve (typically high-income earners). Furthermore, at the time Sweden had five national AP funds that were used to store excess contributions to be used as buffers in times of need. These AP funds were quite criticized as they were nationally invested, not diversified and had low returns (Sundén 2006).

Although the reform officially started in 1999, it was planned since the early 1990s and had a transitional stage. Firstly, the contribution rate had been set higher than what the system required, in order to keep the excess in the AP funds. So much so, that at the time of the reform, the Swedish AP funds had sufficient enough balances to pay for five years' worth of pension payouts. During the transition period of 1995-99, individual pension accounts were set up for those born after 1938. During this time, individuals were paying 16.5% into the pay-as-you-go and 2% into the individual accounts. After 1999, this went on to change to 16% into the pay-as-you-go and 2.5% into the individual accounts (Sundén 2006).

The 1999 reform transitioned the system to a structure emphasizing lifetime earnings through the introduction of the Inkomstpension (income pension), a notional defined-contribution scheme (NDC), and the Premiepension (premium pension), a fully funded defined-contribution (DC) component. These changes aimed to enhance transparency, equity, and fiscal sustainability by closely aligning benefits with individual

contributions accumulated over an entire working career. The structure of the system after the reform can be seen in Figure 1 (Aspegren, Durán, and Masselink 2019; Sundén 2006).

The Notional Defined Contribution (NDC) system, first introduced by Buchanan (1987), works through designing credit point system for the taxpayers. For every Swedish Crown paid into the system, taxpayers acquire one Swedish Crown point that is owed to them upon retirement. A system as such has several advantages: it prevents politicians from overpromising higher pension payouts in the future by linking contributions to payouts, and it is self-stabilizing in nature. This makes it a special form of the pay-as-you-go system because although these contributions are still funding current retirees, taxpayers still have notional individual accounts.

The Automatic Balancing Mechanism (ABM), another element of the reform, adjusts the indexation of these based on the overall financial health of the system. Essentially, if assets, the actual physical funds in the system, drop below liabilities, what the system owes to the current and future retirees, the ABM would reduce the indexation of these credits preventing the government from taking on more debt, essentially reducing payouts. ‘Indexation’ means the rate at which the notional balances are growing. This is set to the wage growth rate by default. To reduce such indexation would mean to reduce the rate at which the notional account balances are growing to prevent the funding gap from worsening (Sundén 2006).

The AP funds were also affected by the reform. The fifth national AP fund was closed down and the other four were reformed such that the investments were diversified yielding higher returns. The excess contributions were distributed equally to each of these four funds. In regard to the premium pension scheme, individuals had

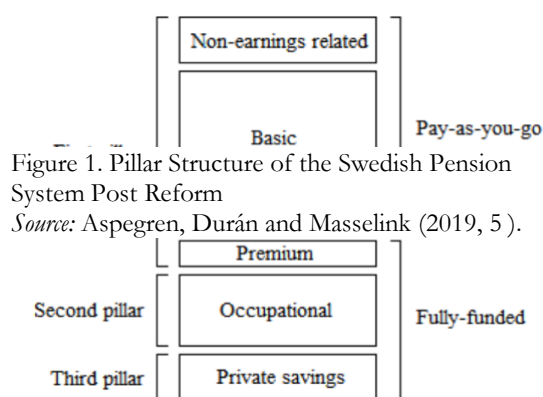


Figure 1. Pillar Structure of the Swedish Pension System Post Reform
Source: Aspegren, Durán and Masselink (2019, 5).

the choice between over 400 eligible pension funds with the 7th AP fund being chosen automatically in the absence of an alternative choice (Pensionsmyndigheten 2024).

Following the reform, the ATP (supplementary pension under the old system) system was closed to new accruals, but those individuals who acquired rights to it prior to the reform remained eligible for it. Specifically, the Swedish pension reform fundamentally altered the 1st pillar of the pension system leaving the 2nd (occupational pensions) and 3rd (private pensions) unchanged as previously shown in Figure. 1 (Aspegren, Durán, and Masselink 2019).

The main elements of the reform are summarized in Table 1.:

Aspect	Before the Reform	After the Reform (1999 onward)
Structure	- Basic universal pension (Folkpension) - Earnings-related ATP pension - Five national AP funds	- Income pension (Inkomstpension), a notional defined-contribution (NDC) scheme - Premium pension (Premiepension), fully funded DC - Four reformed AP funds with diversified investments
Calculation basis	Best 15 years of earnings (with at least 30 years of work history)	Lifetime earnings for each Swedish Crown contributed are credited (NDC approach)
Contribution rates	18% to PAYG	16% to PAYG (Inkomstpension) + 2.5% to funded (Premiepension)
AP Funds	- Five national AP funds - Nationally invested - Low returns	- Fifth fund closed; four reformed AP funds - Diversified investments - Higher returns
Supplementary pension (ATP)	Active accrual	Closed to new accruals, but existing rights preserved
Automatic Balancing Mechanism (ABM)	Not in place	Introduced to adjust indexation of notional credits when assets fall below liabilities
Premium pension investment choice	No individual investment choice	Over 400 pension funds available; 7th AP Fund as default choice

Table 1: Summary of Changes of the Swedish Pension Reform (Author's Work).

Hence, the main question this thesis aims to answer is the effect of introducing a funded component into the 1st pillar on taxpayer pressure. To begin, it is necessary to define taxpayer pressure and the reason behind this being the variable of interest. The PAYG system is designed in a way that its sustainability largely depends on the balance of the number of taxpayers relative to the number of retirees. In a society where the phenomenon of ageing populations is prominent, such a system becomes vulnerable to the decrease of contributions per

retiree. To combat this, policymakers typically utilize several options: increasing the retirement age, increasing the contributions or lowering retirement benefits.

3. METHODOLOGY

a) Data Sources

In the following section, the data sources utilized in the empirical analysis, are described in more detail. The data being looked at is a time-series data for Sweden stretching from 1995 to 2023 encompassing data before and after the reform. In general, one of the key limitations of this thesis is the lack of perfect data. Meaning that not all of the variables have been measured exactly for the purpose of analysis, and have not been measured consistently over time. Specifically, after 2005 clean data was obtained measuring exactly what was intended, but prior to 2005 there was a need for proxies and manipulation which will now be described. The methodology is completely replicable with data and code found in this repository³.

After 2005, clean data on pensionable income and pension payouts has been obtained from the Swedish Pensions website Pensionsmyndigheten (2004-2023; 2005-2024). Prior to 2004, pensionable income had to be constructed from total income earned (Official Statistics of Sweden 1991-2023). According to Swedish law, pensionable income is considered to be that below 7.5 times the income base amount (IBA) in that year and above 1 time the IBA. Because the total income earned is available in bins, and microdata is not available, major understatement of pensionable income was observed when trying to calculate it through the floors and ceilings set up by the IBA (Pensionsmyndigheten 2024).

Hence, pensionable income was taken to be 82% of pensionable amount. This number was determined by calculating the percentage of pensionable income from total income earned for the observed data between 2004 and 2023. A consistent trend was observed with minimal variation of 82%-84% of total income earned for 2004-2023 respectively. Hence, the lower bound of these numbers was taken to calculate pensionable income prior to 2004.

Furthermore, historical data 1995-2004 on pension payouts, has been manually compiled through the Swedish Statistical Yearbook (Statistiska Centralbyrån 1998–2006) with data on 1999 not being provided in any of the

³ GitHub repository: <https://github.com/karnaikhmariia/Swedish-Pension-Reform-1999>

annual reports and recorded as missing in the dataset (Appendix, Figures I-VII). This value for total and average pension payouts was then imputed using the average from the years 1998 and 2000.

The choice to stop data collection in 1995 was made due to the fact that a change in accounting principles, from cash-based to accrual accounting, occurred in 1993 affecting the data reported until 1994 (Paulsson 2006). Including such data would have introduced additional breaks and discrepancies to already not clean data, so the decision was made to omit it.

Data on AP fund balances, net flows and returns was obtained from the annual reports on each of the four national funds and manually compiled since there is no ready dataset (Andra AP-fonden 2001; Första AP-fonden 2014; Fjärde AP-fonden 2001; 2014; Tredje AP-fonden 2000). It was then aggregated by summing up the total balances, and net flows and averaging the returns in order to obtain one dataset representing the state of the Swedish national AP funds.

Data on the number of pensioners was obtained from Pensionsmyndigheten (1985-2002; 2003-2025), on number of workers from the Eurostat (1992-2020), and on net migration from MacroTrends (1960-2024). Another caveat was the number on pensionable income workers. During exploratory data analysis, it was uncovered that the number of pensionable income workers obtained from Pensionsmyndigheten was not the same as the number of workers obtained from the Eurostat. Both these figures followed similar trends, however. Hence, once again a proportion of the two was calculated in order to determine just by how much the number of workers provided by the Eurostat is overestimating the number of pensionable income workers, taking the average across 2004-2023 a 1.09 ratio was obtained. Hence, the number of pensionable income workers was reduced by this proportion. In the end, there was still a discrepancy of less than 2% between the number of workers and the number of pensionable income workers. Both the number of reconstructed pensionable income workers and actual number of pensionable income workers as well as the difference between the number of workers and pensionable income workers can be seen in the Appendix (Figures IX, X).

As a general rule, raw data is stored separately, and is given meaningful file names without any direct modification. This data was then cleaned with all the manipulations documented in code allowing for clear and reproducible results. To work with, data was transformed into tidy data format, where each observation is a

row, each variable is a column, and each table has a unique meaning. It was then merged together in preparation for the main empirical analysis that is outlined in the subsequent sections.

b) Economic and Demographic Conditions

After gathering the data, exploratory data analysis had been performed to uncover the trends in the variables of interest. First, we start by looking at the demographic conditions and how they evolved in Sweden across time. Namely, the number of workers and the number of pensioners.

From Figure 2., several trends can be observed. Firstly, the number of pensioners is consistently lower than the number of workers. Second, the trends in both are showing a similar upward increase. Third, there is a significant spike in the number of workers in 2001, as well as an increased difference between them and the number of pensioners.

From this, we move on to the average pay-out and pay-in. Figure 3. Shows these trends from 1995 to 2024. Here, we observe the average pay-out per capita is higher than average pay-in per capita. This makes sense, as in a healthy pension system, several workers are needed to support one pensioner to avoid undue pressure. From 1997-2000, however; a drop in the average payout is observed with a subsequent increase from 2000-2004 aligning with an increase in the number of workers as shown in Figure 1.

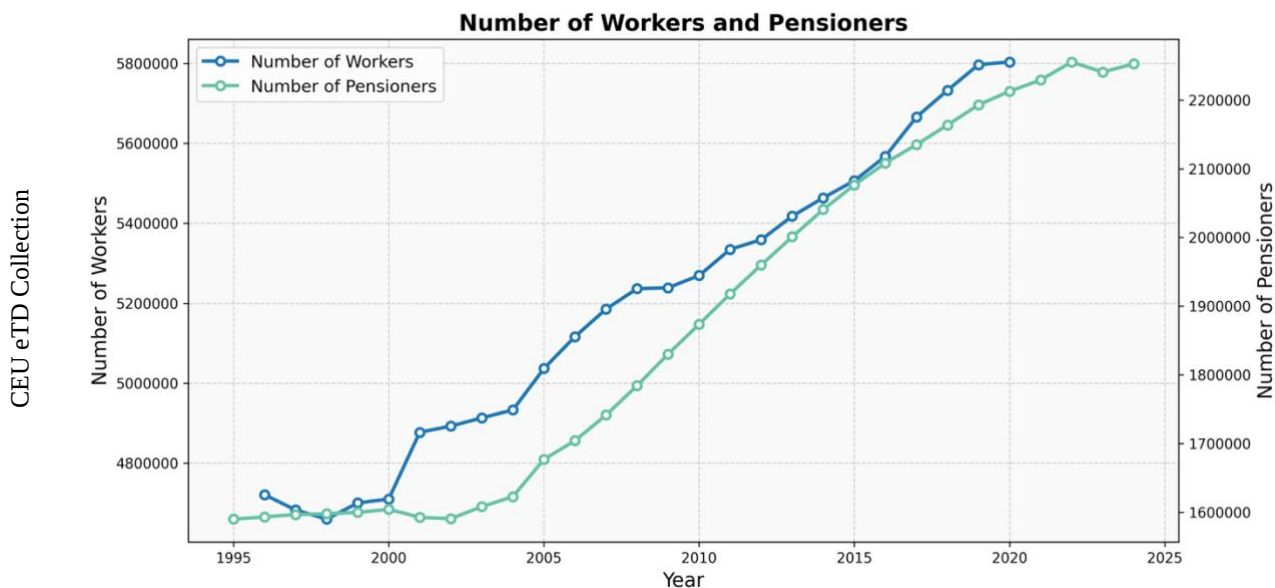


Figure 2: Number of Workers and Pensioners, Sweden 1995-2020.

Sources: Data from Pensionsmyndigheten (1985-2002; 2003-2025; 2004-2023; 2005-2024), Eurostat (1992-2020).

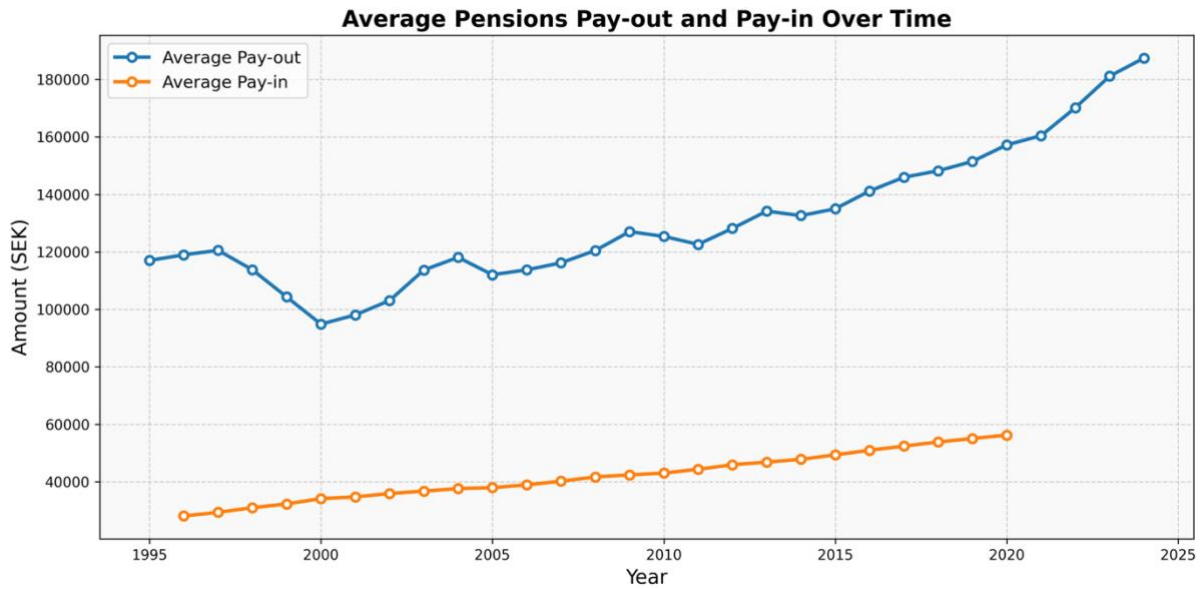


Figure 3: Average Pension Pay-out and Pay-in Over Time.

Source: Data from Statistiska Centralbyrån (1998–2006), Pensionsmyndigheten (1985-2002; 2003-2025; 2004-2023; 2005-2024), Eurostat (1992-2020).

Regarding the AP funds, since their re-establishment and reform in 1999, their total balances (Figure 4.) have grown significantly to be more than 4 times the starting amount at the end of 2023. Until 2008, the funds have been experiencing positive net flows from the contributions (Figure 5.).

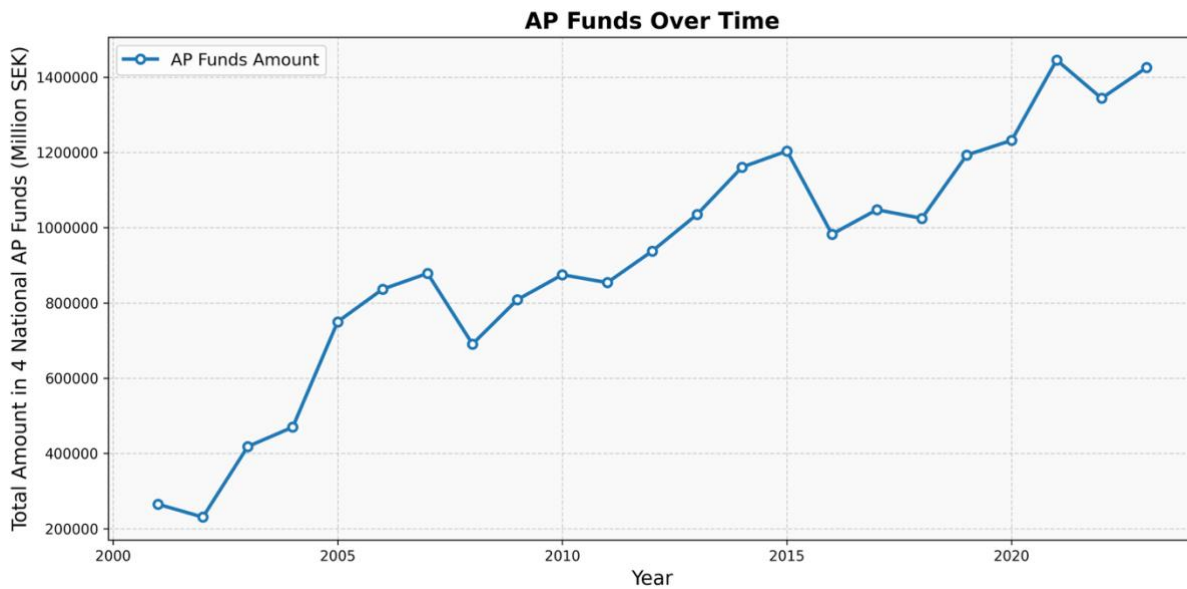


Figure 4: AP Funds Balances Over Time.

Source: Data obtained from Första AP-fonden (2014–2024); Fjärde AP-fonden (2001–2014; 2014–2024); Andra AP-fonden (2001–2024); Tredje AP-fonden (2000–2023).

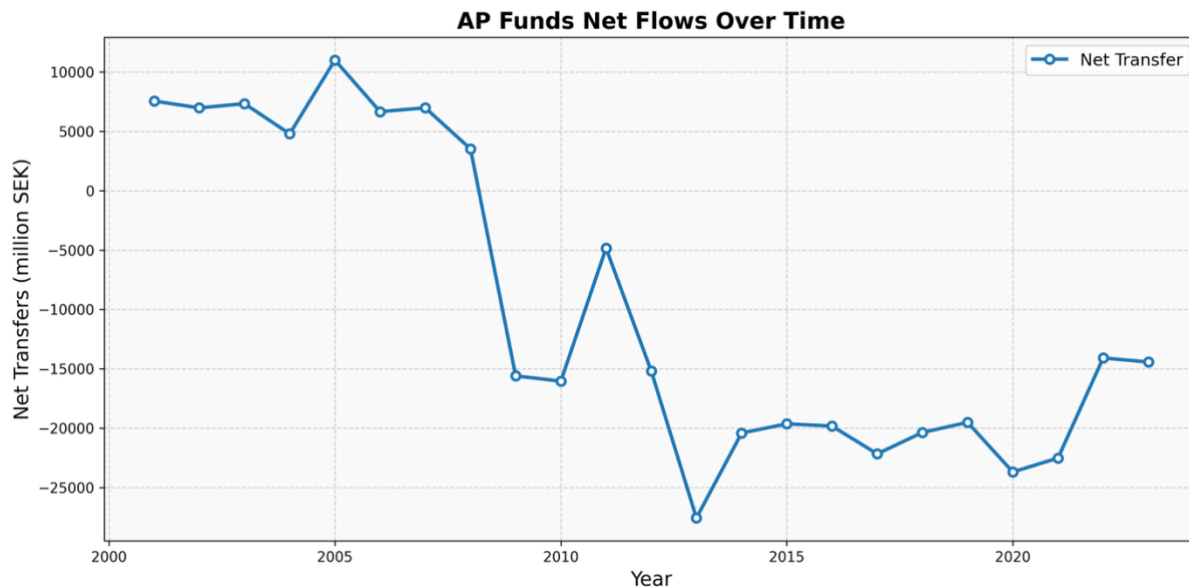


Figure 5: Net Flows of AP funds Over Time.

Source: Data obtained from Första AP-fonden (2014–2024); Fjärde AP-fonden (2001–2014; 2014–2024); Andra AP-fonden (2001–2024); Tredje AP-fonden (2000–2023).

Afterwards, however; the system required more buffers, especially in the years following the Global Financial Crisis and Covid-19. The fact that net flows have been consistently negative since 2008, and yet total balances continue to rise, indicates signs of a successful reform that has sufficient mechanisms in place to finance contribution shortcoming when needed. In other words, the return on these funds is sufficient enough to allow to steady growth of balances despite negative net flows.

c) Construction of the Counterfactual Scenario

The first step of the analysis to see what would have happened to the stress on the system with the current demographic conditions in the absence of reform. For this, a measure of the stress on the system in the form of the hypothetical contribution rate under the old system, that would have been needed to achieve the same payouts as those that actually happened is calculated. It is done so by going to the basics of the pay-as-you-go system: total amount paid in is equal to the total amount paid out minus some administration fees which are excluded from this analysis due to being negligible and also unknown in their exact quantity.

$$\text{Total Amount Paid Out} = \text{Contribution Rate} \times \text{Total Pensionable Income}$$

Rearranging for the contribution rate we obtain the following:

$$\text{Required Contribution Rate} = \frac{\text{Total Amount Paid Out}}{\text{Total Pensionable Income}}$$

Using actual data for both amount paid out and pensionable income to calculate the hypothetical contribution rate (Figure 6.). From this graph, several things can be observed. Firstly, following the year 2000, there is a steady upward trend which coincides with key economic downturns such as the Global Financial Crisis in 2008 and Covid-19. Secondly, there is a large, uncharacteristic spike from 1995 – 2000 which could be attributed to several factors. Both empirical and theoretical research surrounding the economic and demographic conditions at the time has been conducted in order to explain this spike.

Beginning with the theoretical aspect, it is necessary to look at the economic conditions during that time. Indeed, this was right after the Swedish Financial Crisis of the early 90s. During the crisis, employment, wages and pensionable income were all severely negatively impacted. Several banks had collapsed, the government was taking on more and more public debt and unemployment skyrocketing. During the crisis, the vulnerabilities of the financial sector and the pension system were exposed. Hence, it is understandable why in a defined benefit system, where the liabilities to current retirees remain unaffected, an increased stress on the system is observed. The DB placed an increasing strain on workers to meet pension pay-out obligations with tough economic conditions and rising dependency ratios. In fact, this pension reform can be viewed as a means to deal with the crisis in the first place. The Swedish government needed to act fast in order to free up the economy with reforms to the welfare state being on the forefront of structural reforms. (Trésor-Economics 2012).

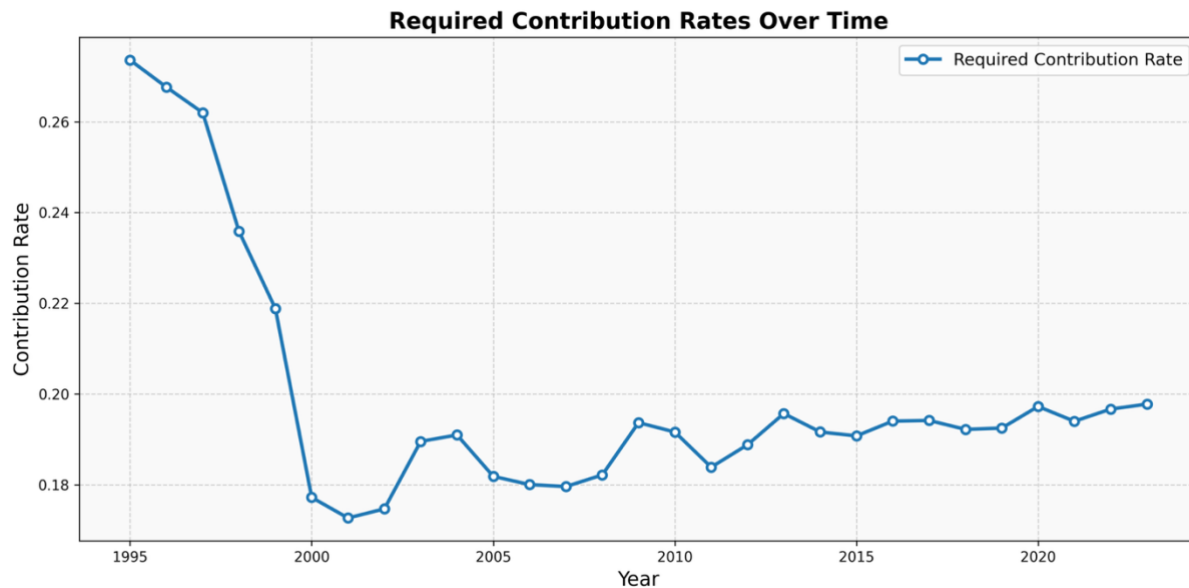


Figure 6: Required Contribution Rate Over Time

Source: Data from Statistiska Centralbyrån (1998–2006), Pensionsmyndigheten (1985–2002; 2003–2025; 2004–2023; 2005–2024), Eurostat (1992–2020).

Then, an empirical analysis is conducted first looking at the average payout (Figure 3.), and at the number of workers (Figure 2.). Since no breaks are observed in the average wage, it is not suspected to be a reason behind the spike (Appendix, Figure VIII.) A dip in the average payout is observed in the years prior to the year 2000, as well as the number of workers being lower in 1996–2000 than in 2001–2004. These are both factors affecting the calculation of our counterfactual either directly by being present in the formula (average payout) or indirectly by affecting the pensionable income. Hence, in order to understand if the variation in the calculated contribution rate can be explained by the change in average payout, a ratio of the two is taken. The following graph (Figure 7.) shows that there is still some unaccounted-for variation not explained by the change in average payout.

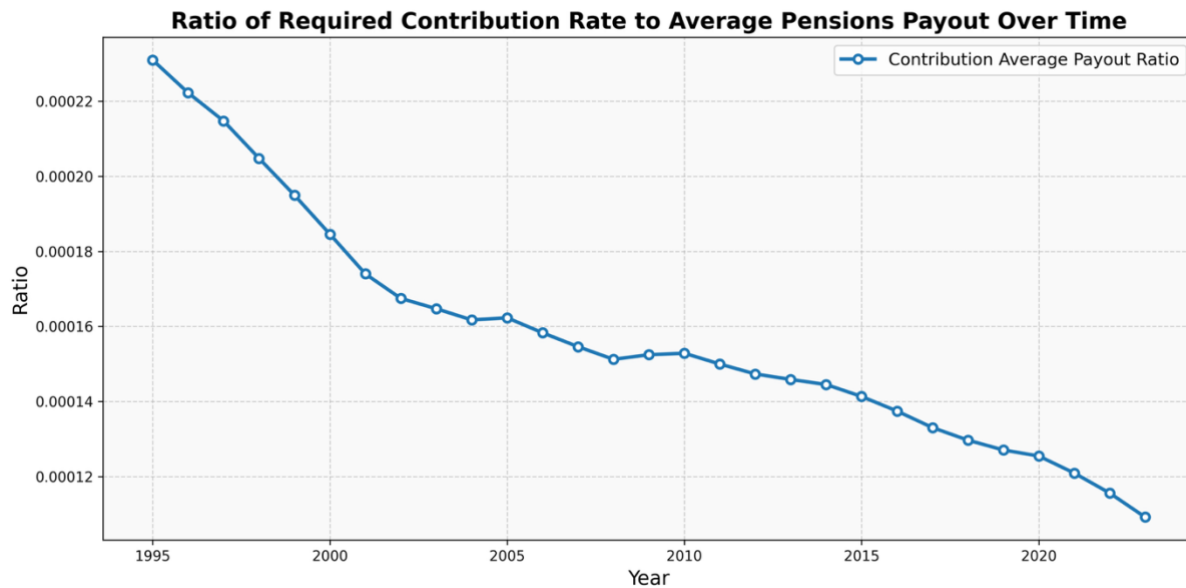


Figure 7: Ratio of Required Contribution Rate to Average Pensions Payout Over Time

Source: Data from Statistiska Centralbyrån (1998–2006), Pensionsmyndigheten (1985–2002; 2003–2025; 2004–2023; 2005–2024), Eurostat (1992–2020)

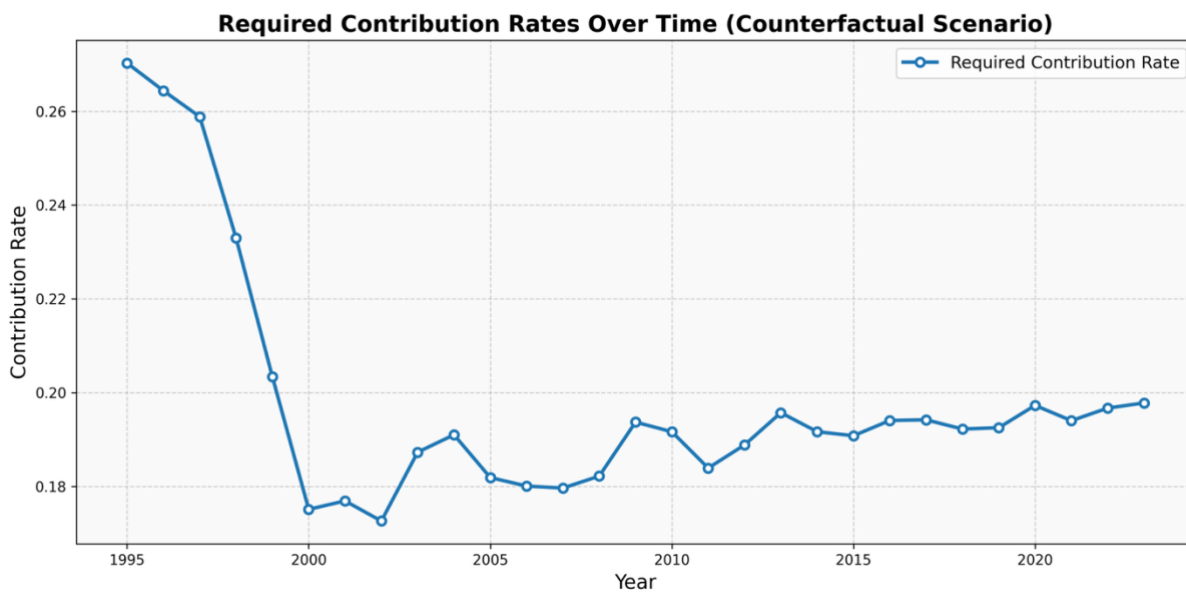


Figure 8: Required Contribution Rate Post Number of Workers Adjustment

Source: Data from Statistiska Centralbyrån (1998–2006), Pensionsmyndigheten (1985–2002; 2003–2025; 2004–2023; 2005–2024), Eurostat (1992–2020).

The second step is to see whether the change in the number of workers is what contributed to this spike in the hypothetical contribution rate. We start by calculating the percentage increase in the number of workers from 2000 to 2001, and then reducing the number of workers from 2000–2004 by this percentage. The aim is to understand if the number of workers had remained at similar levels, would the hypothetical contribution be

just as high. From Figure 8 we see that there is indeed some increase in 2000 in the hypothetical contribution rate, but this change is minor and does not explain the full variation.

In conclusion, the Swedish financial crisis, increase in the number of workers and decrease in the average pay-out all contribute to the spike in the hypothetical contribution rate. However, from this analysis alone, it cannot be determined if these variables fully explain it, and further research is needed to determine the exact reasons behind the spike. In the subsequent section, the chosen OLS specification is described and followed by the discussion of its results.

d) Specification

Returning to the original research question at hand, this section sets out the empirical specification used to estimate the effect of the Swedish pension reform on taxpayer pressure. It outlines the regressions used, variable choices, and rationale behind the empirical approach.

In order to estimate the effect of the pension reform on taxpayer pressure, an OLS regression is estimated with the following form. Taxpayer pressure, or the ratio of the average amount paid out per capita to the average amount paid in per capita, is on the left-hand-side.

$$\frac{\text{average amount paid out per capita}}{\text{average amount contributed per capita}} = \alpha + \beta \cdot \text{reform_lag5} + \gamma \cdot \text{net_migration_lag5} + \varepsilon$$

5-year lagged reform dummy, which is 0 prior to 1999 and 1 after, along with the lagged net migration index. The latter is important because if there are many people migrating to Sweden, the number of contributors becomes higher, this would affect the total amount contributed. An increase in the labor force could drive down wages, thus driving down the average pay-in. We cannot though guess the magnitude of these forces without further analysis, so the variable is included as a confounder. Another important aspect to consider, is net migration forms an unwanted mechanism in our specification (Békés and Kézdi 2021). It affects taxpayer pressure, but is also affected by the reform dummy because if people believe this to be a good reform they will migrate to Sweden to receive better pensions in the future, and vice versa. The aim of this specification is to purely estimate the effect of the reform on taxpayer pressure excluding possible effects of migration. Hence,

including it in the specification will account for that and the effect of net migration will be controlled for in the coefficient of the reform dummy.

A five-year lag was taken for two reasons: the first being that the effects of policy reforms in general are observed after some time. The system needs to adjust to function properly, there is a transitional period, and the variables being measured typically don't respond immediately to the change. Secondly, when looking at the data of amounts paid out by the premium pension system, payouts are not observed until 5 years following the reform. The lag of the net migration is taken as well prevent spurious correlations of the two variables which might overinflate the estimated effect. Two other baseline regressions are estimated alongside this one. The first, simply with the reform dummy, and the other with the reform dummy and net migration index.

The following interpretation of the outcome variable is applied: if it increases, then the taxpayer pressure goes down. This is because receivers get higher payouts than contributors must pay into the system. And vice versa, if the outcome variable decreases, then the taxpayer pressure goes up for the same reason. The intercept in this specification is not meaningless, but tells us the number of contributors in the system financing one retiree. In the following section, the estimates of the regression are interpreted and explained.

e) Results

The results of the specification are shown in Table 2. The first two columns present the baseline regressions, which include only the reform dummy and then the reform dummy alongside the net migration index. The lower magnitude of the reform dummy coefficient when the net migration index is introduced suggests that part of the variation in the payout/pay-in ratio is indeed captured by changes in net migration.

The main regression, displayed in the third column, includes the five-year lagged reform dummy and the lagged net migration index. The coefficient of interest is the five-year lagged reform dummy, which indicates that, in the five years following the reform, taxpayer pressure was approximately 0.115 units higher on average controlling for net migration. These results are marginally significant at the 10% level. In real terms, it can be interpreted that before the reform, 1 Swedish Crown contributed yielded 3.294 Crown in retirement as shown by the intercept. In other terms, 3.294 taxpayers are needed to support one retiree. After the reform,

this estimate is 0.115 lower, meaning that now 1 Swedish Crown contributed yields 3.179 Crowns in retirement. This represents a taxpayer pressure that is 3.5% higher, on average, approximately.

It is important to note that there is not sufficient confidence that the right-hand-side variables capture the endogenous variation in the outcome variable, hence; a causal interpretation of the results cannot be used. The internal validity, which is the measure of the extent to which the chosen specification measures the true average treatment effect, of these results is compromised. This is one of the main limitations of this research. External

Regression Results for Payout/Pay-in Ratio

<i>Dependent variable: payout_payin_ratio</i>			
	Reform (1)	Reform + Migration (2)	Lagged Reform + Migration (3)
Intercept	4.258*** (0.109)	4.143*** (0.123)	3.294*** (0.087)
net_migration		0.025* (0.014)	
net_migration_lag5			-0.002 (0.015)
reform_dummy	-1.062*** (0.119)	-1.084*** (0.115)	
reform_dummy_lag5			-0.115 (0.071)
Observations	25	25	21
R ²	0.776	0.804	0.171
Adjusted R ²	0.766	0.786	0.079
Residual Std. Error	0.218 (df=23)	0.209 (df=22)	0.121 (df=18)
F Statistic	79.781*** (df=1; 23)	45.022*** (df=2; 22)	1.856 (df=2; 18)
Note:	* p<0.1; ** p<0.05; *** p<0.01		

Table 2: Regressions Summary Result.

validity, which is extent to which the general patterns of this research can be generalized to another use case, for example another country wishing to adopt a similar framework (Békés and Kézdi 2021).

External validity would be high if the subjects and circumstances of the new research are similar to the ones in this research (Békés and Kézdi 2021). Other Nordic countries or countries with similar economic and political conditions would be great examples. On the one hand, since this reform is very unique to Sweden, external validity would be low if generalization were to be made to other countries. On the other hand, the reform

follows mainstream economic principles that could be applied elsewhere successfully. For example, successful establishment of a fund that would buffer the pension system when needed would indeed offset the effect of ageing populations. The question is if such fund can be established and maintain its independence from the government in order to function effectively. As discussed in the next section, Sweden placed high values on collective risk sharing and solidarity which contributed to the success of this policy reform.

In the following section, the finding of the regression, counterfactual and literature review will be discussed in broader macroeconomic terms. It discusses how the transition to an NDC system from a DB shifts the risks to the future retirees themselves and creates stronger working incentives by linking contributions to payouts. The effects on inequality are discussed as well and the section ends with a policy recommendation drawn from the research.

4. DISCUSSION AND POLICY RECOMMENDATION

This Swedish pension reform fundamentally altered the pension system by introducing a paradigmatic shift from a defined-benefit to a notional defined-contribution structure. As previously discussed, the latter term means that instead of pension payouts being calculated based on the best 15 years of income, contributors collect credit for every Swedish Crown contributed which are then recorded as future liabilities of the system. The Automatic Balancing Mechanism (ABM) then adjusts the indexation of these liabilities if the assets of the system were to ever fall below them. This way, individual benefits are explicitly linked to lifetime contributions providing more financial stability to the system through increasing working incentives and reducing the possibility of future need for tax hikes.

In macroeconomic terms, such reform stabilizes the system's expenditure commitments relative to the GDP, therefore; the need to take on additional deficit in the future is reduced. Hence, such a system mitigates the risk of unfunded liabilities more robustly than a typical pay-as-you-go framework. In addition, the closer link between pension benefits and lifetime contributions strengthens labor supply incentives. Workers face stronger incentives to participate in the labor market and to extend their careers, knowing that contributing more directly increases their own retirement income. Nevertheless, the shift from collective pooling to individual premium pensions also transfers risk to households, exposing retirement incomes to market volatility and macroeconomic fluctuations (Barr and Diamond 2008). Such risks include the cyclicity of investment returns and potential volatility in capital markets. The Automatic Balancing Mechanism contributes to this as well by reducing pension indexations. The results of the specification support this notion by showing a higher taxpayer pressure in the five years post reform.

These finding also align with the notion that the reform may come at the cost of sufficient benefits for certain population groups. In particular, those that do not follow a mainstream income progression that the system counts on. This would include individuals with long periods of part-time work, those without sufficient contribution years or fragmented work histories such as single mothers. Although there are elements of Swedish pension system that aim to reduce this, such as the basic pension for those not qualifying for the income and premium pensions, the increased exposure to potential inequalities cannot and should not be ignored. This thesis, however; does not study the effect of the reform on inequality due to lack of data prior to 2004.

Moreover, the introduction of a funded element to the pension system (the premium pension) implies a deeper integration of pension systems with capital markets. The funds stored in the individual accounts are invested in risky assets and generate a return. Hence, this could mean higher saving and investment in the long run benefiting the economy as a whole.

This brings us to our next part. The introduction of a state-managed funded element of the pension system makes this a unique reform. It resembles the notion of privatization, but is better described as partial prefunding or marketization of the public pension system as the state retains its central role. It shifts the risk of unfunded liabilities from the government to the future retirees. This system offers them higher rewards, but also exposes them to the shocks of the market enforcing them to also bear the risks. It is important to note, however, that Sweden placed a lot of emphasis on maintaining their deep social values. It has a long history of solidarity, a commitment to collective welfare, risk pooling and redistribution. Hence, even with this kind of reform, we can see elements of the Swedish value system through the publicly owned AP Funds, premium pension accounts regulated by the state, and a guaranteed pension for those not qualifying for an Income pension scheme.

Looking at Sweden, and the increasing unsustainability of pension systems in Europe (European Commission 2024), a natural question emerges. Can this reform, or elements of it, be replicated elsewhere. The answer is not a one-size-fits-all, but should be assessed depending on the country in question. Notably, political and economic stability is key, effective financial institutions are needed to implement and regulate the reform. The AP funds have played a significant role in stabilizing the system not only in the years that it had been maturing, but consistently since 2008, demonstrated by negative net flows (Figure 5.).

One policy recommendation emerging from this research is the establishment of a buffer fund similar to the AP funds in function. To achieve this, the contribution rates would need to be temporarily raised in order to allow for a surplus. This would then be invested, generating a return and providing a buffer when needed. At the very least, when demographic conditions worsen in a few years, such fund could be used to mitigate the effects of that. It is important to note, that any such fund would need to be sufficiently diversified, not invested

nationally as that would defeat the purpose of having a funded element, and effectively managed by an entity independent of the pay-as-you-go system.

Overall, the Swedish case demonstrates a set of tradeoffs in return for broader macroeconomic advantages. The system is indeed more stable to demographic changes over 25 years after the reform and has proven to be successful although partially at the expense of a higher taxpayer pressure.

5. CONCLUSION

To sum up, this thesis has looked at general pension system structures and the key literature surrounding that. It had described the prominent types of pension systems: pas-as-you-go, defined contribution, defined benefit, and notional defined contribution. Taking Sweden as a case study, it attempts to fill the research gap present in the literature of quantitatively estimating the effect of the pension reform in 1999 on taxpayer pressure.

It defines taxpayer pressure as the ratio of the average amount paid in per capita to the average amount paid out per capita. In other words, how much needs to be contributed on average, to obtain the average pension pay-out in retirement. It estimates the effect of the reform on taxpayer pressure empirically in two ways. First, by constructing a counterfactual of the hypothetical contribution rate that would be required by the system today in the absence of reform to maintain the same level of pay-out observed today. Second, by estimating an OLS regression with the taxpayer pressure as the LHS variable and the 5-year lag reform dummy along with the 5-year lag net migration index as RHS variables.

The main results are that a higher taxpayer pressure after the reform is observed suggesting that its success partially came from lowering the average pay-out per capita in relation to the average pay-in per capita, and that the AP funds were a big part in stabilizing the system. The policy recommendation stemming from this research is the establishment of a buffer fund that can offset the effects of ageing populations albeit at the expense of temporarily increasing contribution rates.

The main contribution of this thesis is the provision of a framework in the evaluation of a policy change as unique as this one. With better data, such as microdata, more accurate results can be achieved in future research.

6. APPENDIX

413 Sjukförsäkring, folkpension, allmän tilläggspension, arbetsskadeförsäkring och delpension: inkomster och utgifter, milj. kr Sickness insurance, basic pension, supplementary pension, work injury insurance and part-pension, income and expenditure

	1995	1996	1997	1998
Sjukförsäkring Sickness insurance				
Inkomster Income	68 273	68 323	70 129	61 965
Sjukförsäkringsavgift	42 539	38 125	31 668	59 335
Allmän sjukförsäkringsavgift ¹	21 656	30 198	38 461	2 630
Statsbidrag ²	4 078	—	—	—
Utgifter Expenditure	53 340	51 697	49 025	65 991
Föräldraförsäkring	..	14 210	13 282	14 128
Sjukförsäkring ³ , dag ersättning m.m.	..	32 809	31 268	22 636
Läkemedel	..	..	..	13 440
Förtidspension, folkpension ⁴	..	..	..	13 529
Administration	..	4 678	4 475	2 258
Över-/underskott under året Surplus/deficit during the year	14 933	16 626	21 104	-4 026
Avgiftstäckning, % Extent of coverage of expenditure	120	132	143	94
Folkpension Basic pension				
Inkomster	72 117	70 958	70 023	56 102
Folkpensionsavgift	39 059	42 228	43 673	53 153
Statsfinansierade förmåner	2 719	2 644	2 665	2 723
Statsbidrag (restpost)	30 339	26 086	23 685	226
Utgifter	72 117	70 958	70 023	56 088
Ålderspension	53 030	52 910	52 781	52 617
Förtidspension	14 449	13 461	13 511	..
Änke- och omställningspension	1 633	1 655	793	476
Bätpension	286	288	287	286
Vårdbidrag	1 430	1 496	1 567	1 656
Hustrutillägg	240	166	105	57
Handikappersättning	944	968	979	996
Folkpensionsavgiftens andel av avgiftsfinansierade utgifter, % Basic pension charge as a proportion of expenditure financed by charges	56	62	65	99
Allmän tilläggspension, ATP Supplementary pension				
Inkomster	145 307	143 209	144 842	147 344
ATP-avgift	80 734	84 897	87 733	92 026
Socialavgift	74 005	77 136	79 980	40 001
Egenavgift	6 729	7 761	7 753	52 025
Räntor m.m. (netto)	64 573	58 312	57 110	55 318
Utgifter	113 934	118 586	122 423	125 684
Ålderspension	79 070	82 950	86 045	88 900
Förtidspension	22 960	23 190	23 478	23 610
Änke- och omställningspension	10 602	11 101	11 425	11 718
Bätpension	612	623	630	634
Administration	690	722	847	822
Överskott under året	31 373	24 623	22 418	21 660
Avgiftens andel av utgifter, % Charges as a proportion of expenditure	71	72	72	73
Fondbehållning 31 dec. Fund balance	572 769	597 392	619 811	641 470
Arbetsskadeförsäkring Work injury insurance				
Inkomster	9 266	10 148	10 488	11 088
Arbetsskadeavgift	8 947	9 939	10 288	10 903
Statliga skadeersättningar	319	209	200	185
Utgifter	7 176	6 712	6 305	6 255
Arbetsskadefonden	6 857	6 503	6 105	6 070
Skadeersättningar	6 474	6 125	5 880	5 824
Administration	383	378	225	246
Statliga skadeersättningar	319	209	200	185
Överskott under året	2 090	3 436	4 183	4 833
Avgiftstäckning, %	130	153	169	180
Fondbehållning 31 dec. ⁵	-19 347	-15 911	-11 727	-6 894
Delpension Part-pension				
Inkomster	2 415	2 070	2 053	2 294
Delpensionsavgift	1 354	1 440	1 491	1 579
Räntor m.m.	1 061	630	562	715

388 Försäkringsväsen Insurance

Figure I: Pension Contribution and Payouts, Sweden 1996-1998 (Statistisk årsbok, 2000)

466 Socialförsäkringens inkomster och utgifter 2000, milj. kr Social insurance income and expenditures, SEK m

Försäkringsgren Type of insurance	Inkomster Income				Utgifter Expenditures			Överskott ¹ Surplus
	Avgifter Fees	Statliga medel enl. lag Government money statutory	Övrigt ² Other	Summa Total	Utbetalningar Payments	Administration	Summa	
Sjukförsäkring ³ Sickness insurance	74 574	12 574	—	87 148	84 559	2 589	87 148	0
Sjukvårdsförmåner Health care benefits	—	2 117	—	2 117	2 001	116	2 117	—
Handikappersättning Disability allowance	—	1 116	—	1 116	1 036	80	1 116	—
Arbetskadador Work injury	12 290	190	—	12 480	7 343	312	7 655	4 825
Bilstöd Car allowance	—	241	—	241	209	32	241	—
Assistansersättning Attendance allowance	—	5 392	1 654	7 046	6 960	86	7 046	—
Ålderspension Old age pension								
Via AP-fonden ⁴ Via the AP fund	144 274	—	28 704	172 978	138 840	1 655	140 495	32 483
Via statsbudgeten ^{5, 6} Via national budget	7 745	3 297	—	11 042	10 842	200	11 042	0
Premiepensionssystemet ⁴ Premium pension scheme	21 556	—	—	21 556	0	635	635	..
Efterlevandepensioner Survivor's pension	14 790	0	—	14 790	13 806	49	13 855	935
Bostadstillägg, BTP Housing supplement, BTP	—	9 844	21	9 865	9 641	224	9 865	—
Delpension Partial pension	41	188	—	229	211	18	229	0
Föräldraförsäkring Parental insurance	19 141	0	—	19 141	16 488	603	17 091	2 050
Barnbidrag Child allowance	—	18 957	—	18 957	18 878	79	18 957	—
Bostadsbidrag till barnfamiljer m. fl. Housing allowance for families with children, etc.	—	4 764	—	4 764	4 373	391	4 764	—
Vårdbidrag för handikappade barn Care allowance for handicapped children	—	2 114	—	2 114	1 986	128	2 114	—
Underhållsstöd Maintenance support	—	3 343	1 850	5 193	4 831	362	5 193	—
Pensionsrätt för barnår Child-rearing pension right	—	3 240	—	3 240	3 240	..	3 240	—
Övrig ersättning ⁷ Other payments	30	81	122	233	222	11	233	0
Ej fördelad administration ⁸ Administration, not included above	—	1 148	—	1 148	—	1 148	1 148	—
Totalt¹ Total	294 441	68 606	32 351	395 398	325 466	8 718	334 184	..

¹ Överskott: summering är ej meningsfull på grund av att inkomsterna i premiepensionssystemet utgörs av reserveringar.

² Underhållsskyldiga, kommuner, räntor med mera.

³ Utbetalningar: inkl. förtidspension, havandeskapspenning, närståendepension samt statliga ålderspensionsavgifter.

⁴ Avgifter: inkl. statliga ålderspensionsavgifter.

⁵ Avgifter: det kan anses att de ålderspensionsavgifter som låg över "taket" på 8,07 prisbasbelopp delvis finansierade folkpensioner under år 2000.

⁶ Statliga medel enl. lag: år 2000 inflöt 1 403 milj. kr i folkpensionsavgifter som avsåg år 1998. Det kan anses att även dessa avgifter delvis finansierade de folkpensioner som utbetalades under år 2000.

⁷ Exkl. utbetalningar inom arbetsmarknadsområdet och ersättningar till värmpliktiga.

⁸ I huvudsak försäkringskassornas utgift för förändring av pensionsskuld och delar av Riksförsäkringsverkets administration.

Källa: Riksförsäkringsverket.

Figure II: Social Insurance Income and Expenditure, Sweden 2000 (Statistisk årsbok, 2000)

488 Socialförsäkringens inkomster och utgifter 2001, milj. kr Social insurance income and expenditures, SEK m

Försäkringsgren Type of insurance	Inkomster Income				Utgifter Expenditures			Överskott ¹ Surplus
	Avgifter Fees	Statliga medel enl. lag Government money statutory	Övrigt ² Other	Summa Total	Utbetal- ningar Payments	Admini- stration	Summa	
Sjukförsäkring ³ Sickness insurance	82 546	13 811	–	96 357	93 353	3 004	96 357	0
Sjukvårdsförmåner Health care benefits	–	2 377	–	2 377	2 198	179	2 377	–
Handikappersättning Disability allowance	–	1 145	–	1 145	1 060	85	1 145	–
Arbetskadior Work injury	13 077	176	–	13 253	7 246	376	7 622	5 631
Bilstöd Car allowance	–	260	–	260	226	34	260	–
Assistansersättning Attendance allowance	–	6 444	1 896	8 340	8 238	102	8 340	–
Ålderspension Old age pension								
Via AP-fonden ⁴ Via the AP fund	156 811	–	–25 036	131 775	143 564	1 943	145 507	–13 732
Via statsbudgeten ⁵ Via national budget	10 803	0	–	10 803	10 116	100	10 216	587
Premiepensionssystemet ⁶ Premium pension scheme	18 376	–	–	18 376	0	442	442	..
Efterlevandepensioner Survivor's pension	16 109	0	–	16 109	14 007	58	14 065	2 044
Bostadstillägg, BTP Housing supplement, BTP	–	10 683	13	10 696	10 420	276	10 696	–
Delpension Partial pension	0	266	–	266	260	6	266	0
Föräldraförsäkring Parental insurance	20 849	0	–	20 849	18 002	802	18 804	2 045
Barnbidrag Child allowance	–	21 232	–	21 232	21 108	124	21 232	–
Bostadsbidrag till barnfamiljer m. fl. Housing allowance for families with children, etc.	–	4 371	–	4 371	3 994	377	4 371	–
Vårdbidrag för handikappade barn Care allowance for handicapped children	–	2 180	–	2 180	2 053	127	2 180	–
Underhållsstöd Maintenance support	–	2 885	1 884	4 769	4 380	389	4 769	–
Pensionsrätt för barnår Child-rearing pension right	–	3 276	–	3 276	3 276	..	3 276	–
Övrig ersättning ⁸ Other payments	–	45	127	172	166	6	172	0
Ej fördelad administration ⁷ Administration, not included above	–	650	–	650	–	650	650	–
Totalt¹ Total	318 571	69 801	–21 116	367 256	343 667	9 080	352 747	..

¹ Överskott: summering är ej meningsfull på grund av att inkomsterna i premiepensionssystemet utgår av reserveringar.

² Underhållsskyldiga, kommuner, kurskillnader och räntor med mera.

³ Utbetalningar: inkl. förtidspensioner, havandeskapspenning, närståendepenning samt statliga ålderspensionsavgifter.

⁴ Avgifter: inkl. statliga ålderspensionsavgifter.

⁵ Avgifter: det kan anses att de ålderspensionsavgifter som låg över "taket" på 8,07 prisbasbelopp delvis finansierade folkpensioner under 2001.

⁶ Exkl. utbetalningar inom arbetsmarknadsområdet och ersättningar till värmpliktiga.

⁷ I huvudsak försäkringskassornas utgift för förändring av pensionsskuld.

Källa: Riksförsäkringsverket (www.rfv.se).

Figure III: Social Insurance Income and Expenditure, Sweden 2001 (Statistisk årsbok, 2003)

501 Socialförsäkringens inkomster och utgifter 2002, milj. kr Social insurance income and expenditures, SEK m

Försäkringsgren Type of insurance	Inkomster Income				Utgifter Expenditures			Överskott ¹ Surplus
	Avgifter Fees	Statliga medel enl. lag Govern- ment money statutory	Övrigt ² Other	Summa Total	Utbetal- ningar Payments	Admini- stration	Summa	
Sjukförsäkring ³ Sickness insurance	86 020	15 920	–	101 940	98 734	3 206	101 940	0
Sjukvårdsförmåner Health care benefits	–	2 147	–	2 147	1 969	178	2 147	–
Handikappersättning Disability allowance	–	1 277	–	1 277	1 177	100	1 277	–
Arbetssskador Work injury	13 620	168	–	13 788	7 273	369	7 642	6 146
Bilstöd Car allowance	–	249	–	249	212	37	249	–
Assistansersättning Attendance allowance	–	7 630	2 241	9 871	9 767	104	9 871	–
Ålderspension Old age pension								
Via AP-fonden ⁴ Via the AP fund	160 553	–	-84 542	76 011	151 562	2 081	153 643	-77 632
Via statsbudgeten ⁵ Via national budget	11 898	–	–	11 898	9 665	100	9 765	2 133
Premiepensionssystemet ⁶ Premium pension scheme	20 403	–	–	20 403	1	526	527	..
Efterlevandepensioner Survivor's pension	16 743	26	–	16 769	14 421	70	14 491	278
Bostadstillägg, BTP Housing supplement, BTP	–	10 786	11	10 797	10 514	283	10 797	–
Delpension Partial pension	0	186	–	186	182	4	186	0
Föräldraförsäkring Parental insurance	21 634	131	–	21 765	19 630	799	20 429	1 336
Barnbidrag Child allowance	–	21 127	–	21 127	21 018	109	21 127	–
Bostadsbidrag till barnfamiljer m. fl. Housing allowance for families with children, etc.	–	4 082	–	4 082	3 717	365	4 082	–
Vårdbidrag för handikappade barn Care allowance for handicapped children	–	2 242	–	2 242	2 110	132	2 242	–
Underhållsstöd Maintenance support	–	2 747	1 956	4 703	4 298	405	4 703	–
Pensionsrätt för barnår Child-rearing pension right	–	3 669	–	3 669	3 669	..	3 669	–
Övrig ersättning ⁷ Other payments	11 107	383	101	11 591	11 327	264	11 591	0
Ej fördelad administration ⁷ Administration, not included above	–	746	–	746	–	746	746	–
Totalt¹ Total	341 978	73 516	-80 233	335 261	371 246	9 878	381 124	..

¹ Överskott: summering är ej meningsfull på grund av att inkomsterna i premiepensionssystemet utgörs av reserveringar.

² Underhållsskyldiga, kommuner, kursskillnader och räntor med mera.

³ Utbetalningar: inkl. förtidspensioner, havandeskapspenning, närståendepenning samt statliga ålderspensionsavgifter.

⁴ Avgifter inkl. statliga ålderspensionsavgifter.

⁵ Avgifter: det kan anses att de ålderspensionsavgifter som låg över "taket" på 8,07 prisbasbelopp delvis finansierade folkpensioner under 2002.

⁶ Exkl. utbetalningar inom arbetsmarknadsområdet och ersättningar till vämpliktiga.

⁷ I huvudsak försäkringskassornas utgift för förändring av pensionsskuld.

Källa: Riksförsäkringsverket (www.rfv.se).

Figure IV: Social Insurance Income and Expenditure, Sweden 2002 (Statistisk årsbok, 2004)

535 Socialförsäkringens inkomster och utgifter 2003, milj. kr Social insurance income and expenditures, SEK m

Försäkringsgren Type of insurance	Inkomster Income				Utgifter Expenditures			Överskott ¹ Surplus
	Avgifter Fees	Statliga medel enl. lag Government money statutory	Övrigt ² Other	Summa Total	Utbetal- ningar Payments	Admini- stration	Summa	
Föräldraförsäkring Parental insurance	22 143	168	–	22 311	21 551	896	22 447	-136
Barnbidrag Child allowance	–	21 057	–	21 057	20 956	101	21 057	–
Bostadsbidrag till barnfamiljer m. fl. Housing allowance for families with children, etc.	–	3 960	–	3 960	3 595	365	3 960	–
Vårdbidrag för funktionshindrade barn Care allowance (for disabled children)	–	2 380	–	2 380	2 232	148	2 380	–
Underhållsstöd Maintenance support	–	2 551	1 979	4 530	4 127	403	4 530	–
Pensionsrätt för barnår Child-rearing pension right	–	3 831	–	3 831	3 831	..	3 831	–
Sjukförsäkring ³ Sickness insurance	108 278	2 958	–	111 236	107 512	3 724	111 236	9 695
Sjukvårdsförmåner Health care benefits	–	3 058	–	3 058	2 829	230	3 058	–
Handikappersättning Disability allowance	–	1 287	–	1 287	1 200	87	1 287	–
Aktivitetsstöd Activity support	9 684	183	–	9 867	9 684	183	9 867	–
Arbetskadador Work injury	7 665	196	–	7 861	6 371	394	6 765	1 096
Bilstöd Car allowance	–	252	–	252	215	37	252	–
Assistansersättning Attendance allowance	–	8 808	2 477	11 285	11 165	120	11 285	–
Ålderspension Old age pension								
Via AP-fonden ⁴ Via the First National Pension Fund	165 107	–	82 058	247 165	155 410	2 359	157 769	89 396
Via statsbudgeten ⁵ Via national budget	12 515	12 241	–	24 756	24 643	130	24 774	–
Premiepensionssystemet ⁶ Premium pension scheme	20 267	–	–	20 267	11	285	296	..
Efterlevandepensioner Survivor's pension	17 115	1 081	–	18 196	16 656	74	16 730	1 498
Bostadstillägg, BTP Housing supplement, BTP	–	11 381	–	11 381	10 977	403	11 381	–
Äldreförsörjningsstöd Maintenance support for the elderly	–	642	–	642	634	8	642	0
Del pension Partial pension	–	106	–	106	104	2	106	–
Övrig ersättning Other payments	41	163	61	266	216	35	251	–
Ej fördelad administration ⁶ Administration, not included above	–	580	–	580	–	580	580	–
Totalt¹ Total	362 815	76 884	86 575	526 274	403 919	10 565	414 485	..

¹ Överskott: summering är ej meningsfull på grund av att inkomsterna i premiepensionssystemet utgörs av reserveringar.

² Underhållsskyldiga, kommuner, kursskuldhäder och räntor med mera.

³ Utbetalningar: inkl. sjuk- och aktivitetsersättning, havandeskapspenning, närståendepenning samt statliga ålderspensionsavgifter.

⁴ Avgifter: inkl. statliga ålderspensionsavgifter.

⁵ Administration: inkl. Försäkringskassorna.

⁶ I huvudsak försäkringskassornas utgift för förändring av pensionsskuld.

Källa: Riksförsäkringsverket (www.rfv.se).

Figure V: Social Insurance Income and Expenditure, Sweden 2003 (Statistisk årsbok, 2005)

535 Socialförsäkringens inkomster och utgifter 2004, milj. kr
Social insurance income and expenditures, SEK m

Försäkringsgren Type of insurance	Inkomster Income				Utgifter Expenditures			Överskott ¹ Surplus
	Avgifter Fees	Statliga medel enl. lag Govern- ment money statutory	Övrigt ² Other	Summa Total	Utbetal- ningar Payments	Admini- stration	Summa	
Föräldraförsäkring Parental insurance	22 742	118	–	22 860	23 029	826	23 855	-995
Barnbidrag Child allowance	–	20 974	–	20 974	20 873	101	20 974	–
Bostadsbidrag till barnfamiljer m. fl. Housing allowance for families with children, etc.	–	3 951	–	3 951	3 614	337	3 951	–
Vårdbidrag för funktionshindrade barn Care allowance (for disabled children)	–	2 566	–	2 566	2 415	150	2 566	–
Underhållsstöd Maintenance support	–	2 411	1 941	4 352	3 968	384	4 352	–
Pensionsrätt för barnår Child-rearing pension right	–	4 051	–	4 051	4 051	..	4 051	–
Sjukförsäkring ³ Sickness insurance	113 083	13 309	–	126 392	108 748	3 868	112 616	13 776
Sjukvårdsförmåner Health care benefits	–	3 681	–	3 681	3 425	256	3 681	–
Handikappersättning Disability allowance	–	1 293	–	1 293	1 205	87	1 293	–
Aktivitetsstöd Activity support	10 133	189	–	10 321	10 133	189	10 321	–
Arbetskadador Work injury	7 246	180	–	7 426	6 487	403	6 889	537
Bilstöd Car allowance	–	250	–	250	222	28	250	–
Assistansersättning Attendance allowance	–	10 127	2 726	12 853	12 748	105	12 853	–
Ålderspension Old age pension								
Till/från AP-fonden ⁴ To/from the First National Pension Fund	171 600	–	65 162	236 762	164 762	2 737	167 499	69 263
Till/från statsbudgeten To/from national budget	12 462	11 402	–	23 863	23 732	131	23 863	–
Premiepensionssystemet ⁴ Premium pension scheme	20 021	–	–	20 021	42	221	263	..
Efterlevandepensioner Survivor's pension	17 577	1 228	–	18 805	16 987	146	17 132	1 673
Bostadstillägg, BTP Housing supplement, BTP	–	11 359	–	11 359	10 964	396	11 359	–
Äldreförsörjningsstöd Maintenance support for the elderly	–	594	–	594	587	6	594	–
Delpension Partial pension	–	37	–	37	37	1	37	–
Övrig ersättning Other payments	46	127	72	245	218	27	245	–
Ej fördelad administration ⁵ Administration, not included above	–	-1 021	–	-1 021	–	-1 021	-1 021	–
Total¹ Total	374 909	86 825	69 902	531 635	418 246	9 378	427 625	..

¹ Överskott: summering är ej meningsfull på grund av att inkomsterna i premiepensionssystemet utgörs av reserveringar.

² Underhållsskyldiga, kommuner, kursskillnader och räntor med mera.

³ Utbetalningar: inkl. sjukpenning, sjuk- och aktivitetsersättning, havandeskapspenning, närståendepension samt statliga ålderspensionsavgifter.

⁴ Avgifter: inkl. statliga ålderspensionsavgifter.

⁵ I huvudsak försäkringskassornas redovisade förändring av pensionsskuld.

Källa: Försäkringskassan (www.forsakringskassan.se).

Figure VI: Social Insurance Income and Expenditure, Sweden 2004 (Statistisk årsbok, 2006)

500 Socialförsäkringens inkomster och utgifter 2005, miljoner kronor

Social insurance income and expenditures, SEK m

Försäkringsgren Type of insurance	Inkomster Income				Utgifter Expenditures			Överskott ¹⁾ Surplus
	Avgifter Fees	Statliga medel ent. lag Govern- ment money statutory	Övrigt ²⁾ Other	Summa Total	Utbetal- ningar Payments	Administ- ration	Summa	
Föräldraförsäkring Parental insurance	23 504	0	–	23 504	23 687	945	24 632	-1 128
Barnbidrag Child allowance	–	21 546	–	21 546	21 460	86	21 546	–
Bostadsbidrag till barnfamiljer m. fl. Housing allowance for families with children, etc.	–	3 944	–	3 944	3 605	339	3 944	–
Vårdbidrag för funktionshindrade barn Care allowance (for disabled children)	–	2 693	–	2 693	2 541	152	2 693	–
Underhållsstöd Maintenance support	–	2 356	1 875	4 231	3 811	421	4 231	–
Pensionsrätt för barnår Child-rearing pension right	–	4 319	–	4 319	4 319	–	4 319	–
Sjukförsäkring ³⁾ Sickness insurance	110 341	13 969	–	124 310	109 134	3 903	113 037	11 273
Sjukvårdsförmåner Health care benefits	–	2 995	–	2 995	2 743	252	2 995	–
Handikappersättning Disability allowance	–	1 272	–	1 272	1 173	99	1 272	–
Aktivitetsstöd Activity support	11515	200	–	11715	11515	200	11715	–
Arbetskadador Work injury	7266	133	–	7 399	6 347	396	6 743	656
Bilstdöd Car allowance	–	372	–	372	347	25	372	–
Assistansersättning Attendance allowance	–	11 454	2 987	14 441	14 335	106	14 441	–
Ålderspension Old age pension	0	0	0	0	0	0	0	–
Till/från AP-fonden ⁴⁾ To/from the First National Pension Fund	179 552	–	114 598	294 150	169 128	2 032	171 160	122 990
Till/från statsbudgeten To/from national budget	11 352	11 139	–	22 491	22 449	42	22 491	–
Premiepensionssystemet ⁴⁾ Premium pension scheme	23 805	–	–	23 805	105	252	357	..
Efterlevandepensioner Survivor's pension	18 164	1 052	–	19 216	16 903	119	17 022	2 193
Bostadstillägg, BTP Housing supplement, BTP	–	11 620	–	11 620	11 170	451	11 620	–
Äldreförsörjningsstöd Maintenance support for the elderly	–	503	–	503	483	19	503	–
Del pension Partial pension	–	–4	–	–4	–4	0	–4	–
Övrig ersättning Other payments	31	90	64	185	173	12	185	–
Ej fördelad administration Administration, not included above	–	3	–	3	–	3	3	–
Totalt¹⁾ Total	385 530	89 655	119 525	594 710	425 423	9 855	435 279	..

1 Överskott: summering är ej meningsfull på grund av att inkomsterna i premiepensionssystemet utgörs av reserveringar.

2 Underhållsskyldiga, kommuner, kursskillnader och räntor med mera.

3 Utbetalningar: inkl. sjukpenning, rehabiliteringspenning, sjuk- och aktivitetsersättning, havandeskapspenning, närståendepension samt statliga ålderspensionsavgifter.

4 Avgifter: inkl. statliga ålderspensionsavgifter.

Källa: Försäkringskassan (www.forsakringskassan.se).

Figure VII: Social Insurance Income and Expenditure, Sweden 2005 (Statistisk årsbok, 2007)

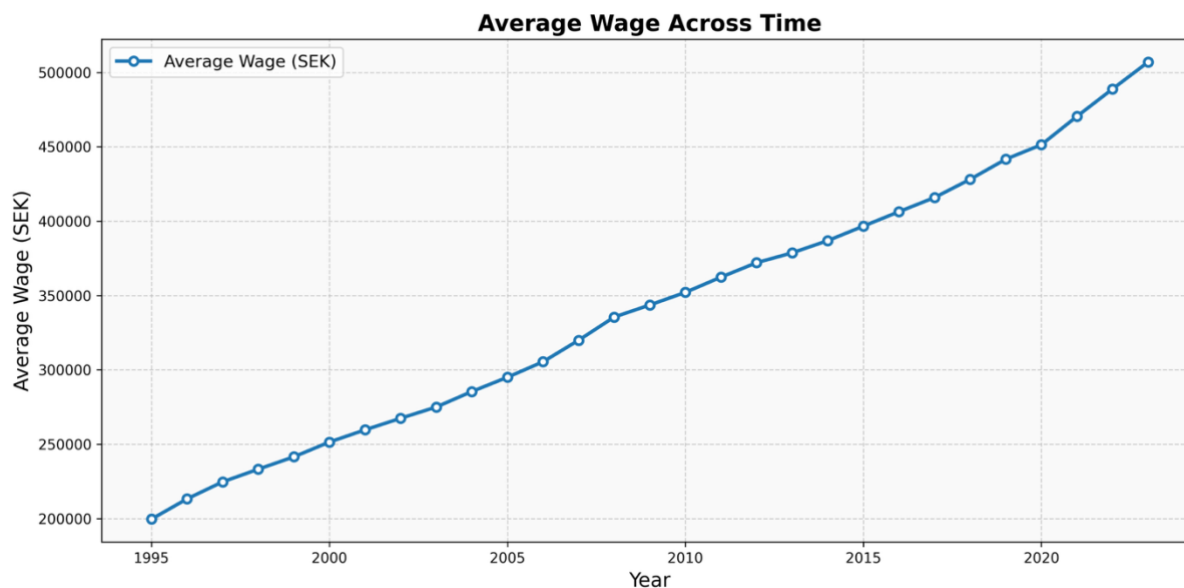


Figure VIII: Average Wage in Sweden Across Time (OECD 1995-2023).

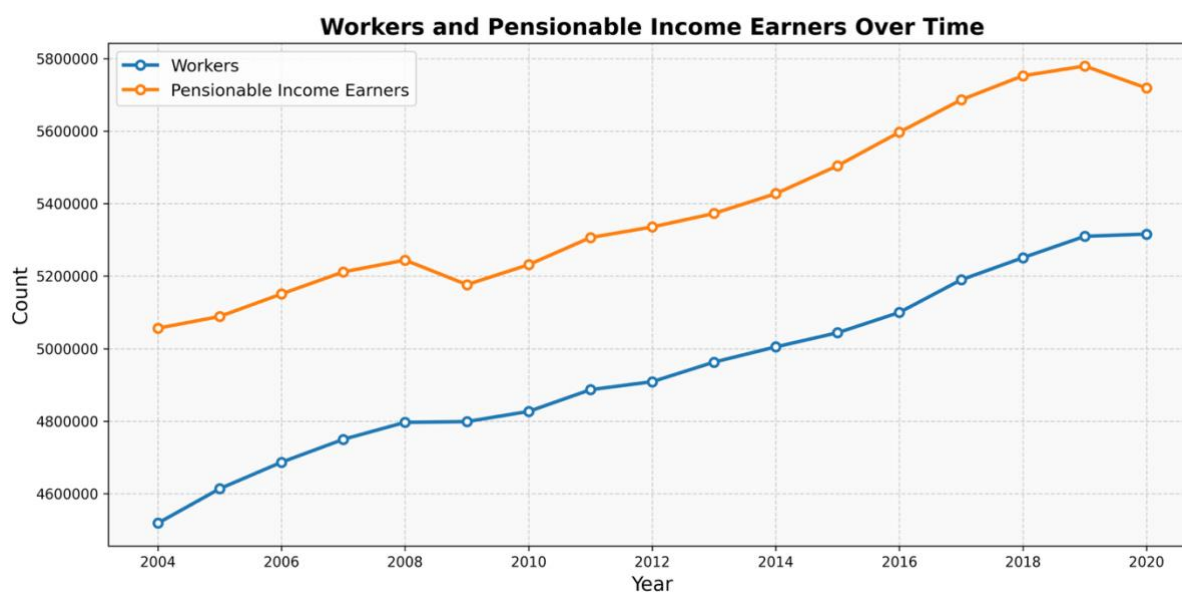


Figure IX: Average Wage in Sweden Across Time (OECD 1995-2023).

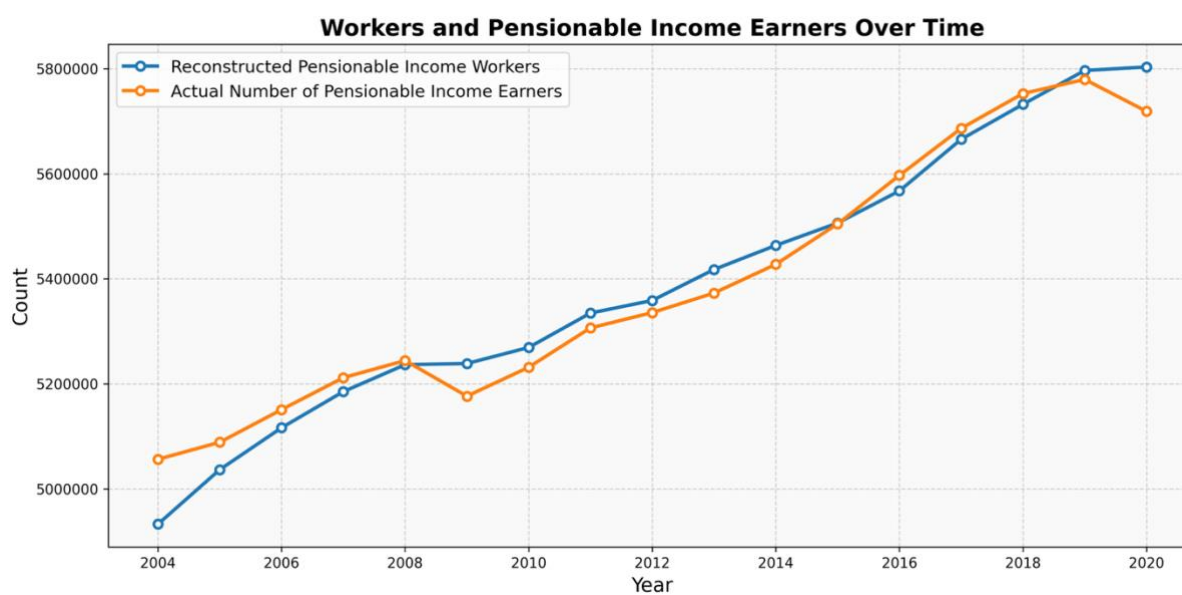


Figure X: Reconstructed Pensionable Income Workers and Actual Pensionable Income workers (OECD 1995-2023).

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