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Trust and Distrust in Pension Providers in Times of Decline and Reform

Analysis of Survey Data 2004–2021

Harry van Dalen
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DESIGN PAPER 211

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Abstract

Trust in pension funds by members and in the government by the public is of essence because pension providers try to fulfill their pension promises in a fundamentally uncertain world. Reforms and crises are therefore the ultimate testing ground for pension trust. In this paper we estimate with repeated cross-sectional survey data how trust and distrust in Dutch pension funds and the government have evolved over the 2004-2021 period and what the impact of financial stability on trust in these two institutions has been. Financial stability of pension funds, approximated by their funding ratio, is shown to affect trust positively, but it does not decrease distrust significantly. Based on the estimation results, achieving a situation where the majority of the adult population trusts pension funds is likely to be attained at funding ratios of 115 or higher. Financial stability of government (measured by the government debt over GDP ratio) does not affect either the trust or distrust in the government as pension provider. Underlying drivers of distrust and trust such as personal characteristics are also notable: self-employed workers are more prone to distrust pension funds than employees. Women are more likely than men to take a neutral position.

Samenvatting

Het vertrouwen van burgers in pensioenfondsen en de overheid is van groot belang omdat deze instituties zekerheid proberen te bieden in een onzekere wereld. Hervormingen en crises zijn daarom belangrijke toetsstenen om te bepalen hoe robuust dat vertrouwen is. In dit paper schatten wij de ontwikkelingsgang van vertrouwen en wantrouwen in pensioenfondsen en de overheid voor de periode 2004–2021 en welke rol de financiële stabiliteit van beide instituties heeft gespeeld in de toe- en afname van vertrouwen. Financiële stabiliteit van pensioenfondsen, benaderd als de gemiddelde dekkingsgraad, beïnvloedt het vertrouwen positief, maar heeft geen duidelijke invloed op wantrouwen. Gegeven de schattingsresultaten is het mogelijk dat de meerderheid van de bevolking vertrouwen heeft in pensioenfondsen wanneer de dekkingsgraad 115 of hoger is. De financiële stabiliteit van de overheid, gemeten als de schuld/bbp ratio, heeft geen effect op vertrouwen of wantrouwen in de overheid. Onderliggende drijvende krachten van vertrouwen en wantrouwen zoals persoonlijke kenmerken van burgers zijn ook van belang: zelfstandigen koesteren meer wantrouwen richting pensioenfondsen dan werknemers. Vrouwen nemen vaker dan mannen een neutrale positie is: zij zullen veel minder vaak vertrouwen of wantrouwen uitspreken.

1. Introduction

Trust in pension providers is a principle that underlies every pension insurance contract (Barr & Diamond, 2006). The future is uncertain and, as a consequence, pensions, whether offered by pension funds or the government, are by their very nature incomplete contracts as not every possible contingency can be covered. The governance structure that underlies pension contracts is therefore essential to making pension plans credible and trustworthy (Admati, 2021; Besley & Prat, 2005). The fact that most governments belonging to the OECD (2017) are either considering or already implementing pension reforms is a reflection of the incompleteness of pension contracts. Pension programs may have turned out to be financially unsustainable in light conditions of population ageing or to be out of tune with the requirements of the labor market, where lifetime jobs have become rare and contractual flexibility a force to be reckoned with. Especially pension funds that offer defined benefit contracts are likely to face the need of reforms as their promises are vulnerable to increasing life expectancies or low interest rates (Bovenberg & Gradus, 2015). The Dutch pension system may be a case in point. Even though the system is ranked by pension experts as among the best in the world (see the annual Mercer Global Pension Index), according to the Dutch government the old system is "teetering". And as it stresses in its justification of pension reform plans: "Without innovation, the chances are high that trust in our pension system will erode even further" (p. 4, Ministry of Social Affairs and Employment (2020)).

The consequences of pension policy decisions in terms of the trust of participants or of the public at large are easily posed but rarely made concrete. In this paper we firstly examine the development of trust in pension providers over the past two decades for the case of the Netherlands. Secondly, we examine whether changes in trust are linked to the financial sustainability of these pension providers.

Understanding how trust and distrust in pension providers develop is essential for two reasons. First of all, a shock in pension policy is likely to be accompanied by a loss of trust when vested interests are at stake, but the key issue is whether trust is restored when the dust has settled or is instead replaced by distrust. If the latter is likely to occur, pension providers may either become more risk-averse or averse to take necessary corrective reforms. A second reason why the development of trust over time is an important issue is that changes in the level of trust may affect individual decisions on savings, investment, and work over the lifespan. So far, these dynamic issues of trust have not been addressed well in pension literature, for plausible reasons. The current academic literature on pension trust – which is limited but gradually

growing and gaining attention – relies mostly on cross-sectional studies. The examination of trust in pension providers (Hauff, 2014; Van Dalen & Henkens, 2018; Van der Cruijsen, de Haan, & Roerink, 2021a; Vickerstaff, Macvarish, Taylor-Gooby, Loretto, & Harrison, 2012) relies on a diverse body of literature on trust in organizations and institutions, and that in turn draws on insights from disciplines such as economics, marketing, psychology, management, and political science. The essence of measuring and explaining trust revolves around the assumption that trust is both a trait of the trustee (a pension provider) – i.e. the perceived trustworthiness - and of the trustor – the person who has to trust others – i.e. the propensity to trust (cf. Mayer, Davis, and Schoorman (1995)). The perceived trustworthiness of financial institutions is shown to consist of a multitude of characteristics, although in most studies the elements of ability, benevolence, and integrity are key to understanding trust (Pirson & Malhotra, 2011; Van Raaij, 2016; Vickerstaff et al., 2012). Van Dalen and Henkens (2018) show that the perceived integrity, competence, stability, and benevolence of pension providers matter when it comes to assessing their trustworthiness. Much less is known about changes in trust over time and the structural factors affecting the pension industry that influence these changes.

The difficulty in assessing and comparing developments across time is that such exercise is not only impacted by the events of the day, such as crises or policy reforms, but also by the composition and characteristics of birth cohorts that make up a population. Changes in trust may relate to the entry and exit of generations/cohorts entering the work force. These generations may reflect a different composition of the workforce (e.g., the percentage of self-employed) and different levels of education. And new cohorts may also reflect a different spirit or attitude towards pensions, as different generations may have been confronted with different capital market experiences or economic crises (Malmendier & Nagel, 2011; Sunde & Dohmen, 2016) and thus be affected in their outlook or behavior with respect to their trust in financial institutions.

A key element in the perception of pension providers as trustworthy is the *perceived* financial stability (Van Dalen & Henkens, 2018). However, the trust literature rarely employs real-time indicators of pension providers such as the asset position of a pension fund or a government's debt level in situations where the government acts as pension provider. Obviously the lack of research on such issues is partly affected by the lack of longitudinal data on track changes in the level of trust in pension funds as a group, or the lack of data on individual pension funds in a cross-sectional setting.

A final point not yet covered in the current literature on pension trust is the distinction between trust and distrust. Even though trust surveys are based on data that

could enable a more fine-grained analysis, the research itself generally focuses on trust as if it is a binary choice – you either trust a person or institution, or you don't. However, this base category – not expressing trust – could be a mixture of neutrality or lack of trust. We deviate from this standard practice in this paper by examining whether there are asymmetric reactions across time between persons who trust and persons who distrust pension providers to developments in financial stability. An important reason for looking into this issue is insights in other disciplines where trust and distrust lead to greater understanding of the reactions of people to actions of organizations (Kramer, 1999; Van de Walle & Six, 2014). In our study of pension trust this distinction might enlarge our insight into how trust is built and regained. A common saying that captures the concerns of organizations is that "trust takes years to build, seconds to break, and forever to repair". The asymmetry that is part of radical changes in trust can only be examined by looking closely how people who have lost trust and people who still have trust differ in their response to, for example, the financial stability of pension providers.

In this paper we will explain differences in trust and distrust in Dutch pension providers across time, using repeated cross-sectional survey data gathered at eight measurement points covering the 2004-2021 period. The central research questions in this paper are (1) are there substantial differences across time in trust and distrust, and (2) does the financial stability of pension funds and government – as approximated by their funding ratio and debt position, respectively – play a role in this and, if so, to what extent? The data used to answer these questions have been collected uniformly by one research institution (Centerdata, Tilburg University). The trust of individuals in pension providers is measured and analyzed for two pension providers: the government as provider of the state pension, and privately organized pension funds that offer a supplementary pension on top of the state pension.

The outline of the paper is as follows. In Section 2 we present a brief literature overview of the relationship between pension trust and financial stability. In Section 3 we then offer some context on the Dutch situation for these two aspects. Section 4 covers issues concerning the operationalization of the concepts, the details of the data, and the methodology that are used to answer the two research questions. Section 5 reports on the estimation results, and Section 6 concludes with a discussion of the results obtained.

2. Theories of trust and distrust

The importance of trust in economic life resounds in a statement by Arrow (1972): "Virtually every commercial transaction has within itself an element of trust, certainly any transaction conducted over a period of time." A common definition of trust is that an individual or an institution – the trustee – will perform actions that are beneficial (or at least not detrimental) to the party – the trustor – that enters into a contract. This can be a formal contract but often the contract is informal, i.e., behavioral rules that are embodied in social norms and practices. In the case of pension contracts, time is an important element as pension finance covers a lifetime, and, depending on the type of contract, this may also involve substantial risk pooling within and between generations. Trust in the financial institutions that organize and finance pension programs on behalf of individuals is therefore essential, but lapses in trust are also understandable given the uncertain nature of the world and the number of stakeholders involved.

In economics much weight is attached to analysis of trust by focusing on direct interactions and subsequently distilling 'revealed' levels of trust based on laboratory experiments.[1] Increasingly, attitudinal measures of trust are considered informative because they offer more opportunities to include real life elements that come into play in economic transactions (cf. Sapienza, Toldra-Simats, and Zingales (2013)). In the case of pension institutions, laboratory experimental outcomes have limited ecological validity. That is because, in countries where enrolment in pension programs is mandatory, direct interactions (which figure prominently in laboratory experiments) between trustors (participants in pension programs) and the trustee (the pension provider) are rare.

To gain insight in the development of trust in pension institutions it is important to develop domain-specific measures of trust in institutions. In this paper we focus on so-called broad-scope trust, which is the trust in a group of financial institutions, such as pension funds. However, we also focus on the government as pension provider, and one can say that this paper thus also focuses on narrow-scope trust because there is only one provider when it comes to state pensions, namely the

1 In economic theory, trust is always involved in economic interactions and is often captured in game-theory terms such as trust games. These are games in which actions of trustors reveal their trust by investment decisions that can be reciprocated or abused by the trustee (see Berg, Dickhaut, and McCabe (1995)). See Johnson and Mislin (2011) for a meta-analysis of the various experimental outcomes.

government. The key hypothesis in this study is that financial stability is a direct driver of trust and distrust in pension funds and in the government as pension provider.

The reason why financial stability is regarded as an important element in increasing the trustworthiness of financial institutions is that solvent organizations can make good on their promises, offering a stable pension benefit or stable pension premiums in the case of pension funds. As shown by Van Dalen and Henkens (2018), stability as perceived by the population at large is one of the key predictors of trust in pension funds. This conclusion is based on a cross-sectional study which raises questions about causality and a common method bias. For a more solid test of the relationship between financial stability and trust we need to incorporate in the analyses financial indicators that are specific to the various pension providers.

The reason for examining both *trust* and *distrust* of pension providers is linked to developments within the trust literature in organization science (Kramer, 1999), psychology (Schul, Mayo, & Burnstein, 2008), and political science (Bertsou, 2019; Van De Walle & Six, 2014). This literature indicates that a distinction between trust and distrust may be important as both groups may consist of altogether different types of people, and these differences may translate to divergent reactions. For example, Schul, Mayo, and Burnstein (2004) and Schul et al. (2008) show, by means of experiments, that individuals use different strategies depending on whether the environment is characterized by trust or distrust (as manipulated by the setup of the experiment). When individuals sense they should be on guard, they are likely to ignore routine strategies that have proven to be optimal and are regularly used in standard environments. When an environment is in a state of flux, it might be beneficial to be distrustful since the routines and decisions made under normal circumstances are no longer optimal. However, sticking to being distrustful under normal circumstances may also have the side effect of using routines that are not adapted to such circumstances. The empirical political science literature shows a growing distrust towards political and public institutions, which in turn leads to deep-seated discontent and erosion of support for the government. However, one should be careful to take a one-sided view of the concept of distrust since it does not necessarily have a negative connotation, as can be distilled from the work of classical liberal writers (see Hardin (2002) for an overview). Distrust can be an essential building block of the checks and balances in democracies, as vigilant citizens might be a stimulus for trustees to perform well and perhaps to also offer insights or information that would not come to light from persons who fully trust the government. Of course, when distrust is based on deep-seated discontent and interaction is cut off, the virtues of distrust

disappear and distrust become a threat to the existence of an institution, in a manner akin to the analysis of exit, voice and loyalty within organizations and states by Hirschman (1970). The positive side of distrust can been found in the option of voice: airing complaints and trying to get heard, in the hope that things will improve while remaining loyal. The negative side of distrust becomes visible when loyalty and hope for improvement are lost and voice is no longer seen as an option. At that point the option of exit – voting with your feet – becomes real. Given that, in most societies, private pensions are intertwined with decisions made and regulated by governments, it is not only important to focus on pension funds but also on the government, plus to see how distrust and trust in these two institutions fare over time.

3. Context: pensions in the Netherlands

To understand the issue of trust in the Dutch context, it is necessary to keep in mind the key players that figure prominently in the provision of pensions, plus the most prominent developments that have taken place in recent decades that may have stuck in the minds of the Dutch population.

3.1 Benefits and premiums

In the Netherlands, most employees accumulate pension rights within a three-pillar system: (1) a basic public pension plan (AOW) provided by the government; (2) a mandatory supplementary pension plan largely sponsored by employers and provided and managed by pension funds; and (3) individual voluntary pension savings. To this day the public pension – financed on a pay-as-you-go basis – plus the supplementary pension provisions are for most Dutch residents the basic elements of what they consider "their pension". It should, however, be mentioned that developments are currently taking place which may lead to a different outlook for future workers. Increasingly the self-employed will have to find ways – or be forced – to accumulate pension savings (Hershey, van Dalen, Conen, & Henkens, 2017), and high income employees may also be required to supplement their pension savings with voluntary savings, as a cap is placed on the level of income covered by second pillar pension provisions. The Dutch government is pulling back as a sponsor for these arrangements. It restricts the coverage of gross income to 112,189 euros (annual amount for 2021), but pressure is mounting to lower this cap substantially.

Both the state and the supplementary pensions have been defined in terms of benefits, with premiums and taxes endogenously derived, whereas by January 1, 2023 a new pension system based on defined contributions (DC) will replace the current defined benefit (DB) system. This is expected to give rise to more variable pension benefit outcomes than is currently the case. However, the new system also provides for some intergenerational risk sharing, making this system *de facto* a collectively defined contribution (CDC) system.

3.2 Governance

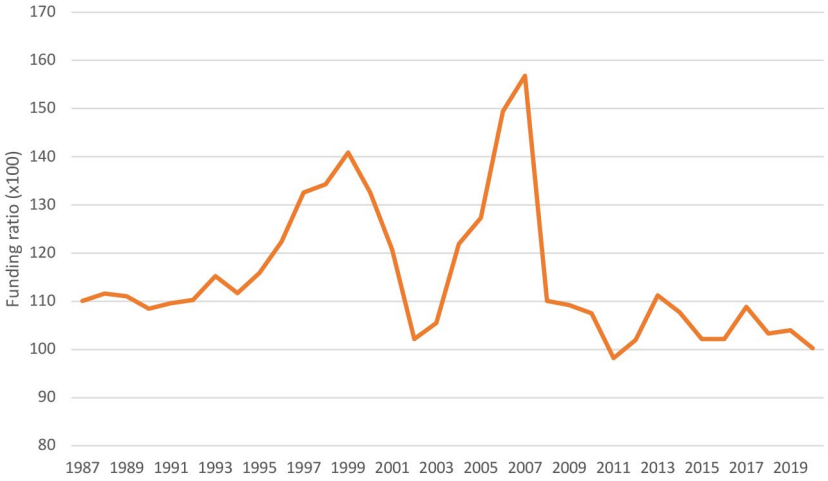
The governance of Dutch pensions is perhaps more complex than the systems found abroad. The supplementary pension plans are agreed upon at a collective level, in sectors of industry or in large companies, between the social partners: employers or their representative organization and employees, represented by the trade unions. When an employer offers a supplementary pension scheme, participation by

employees in that particular scheme is mandatory. Although most Dutch employees accumulate their pension rights with pension funds, a small but growing number of employees is covered by insurance companies that offer DC pensions. Pension funds are non-profit organizations, where key policy decisions are made by the social partners. Employees and pensioners can also be represented in the participants' council, which issues both solicited and unsolicited advice to the board of directors of the fund. However, in actual practice, most funds have outsourced their administration and/or asset management to for-profit pension organizations. Two organizations are involved to supervise and regulate pension funds and insurers: De Nederlandsche Bank (the Dutch central bank, DNB) and the Netherlands Authority for the Financial Markets (AFM). Under the Pensions Act and the Financial Supervision Act, DNB closely monitors the financial and management operations of Dutch pension providers. The task of the AFM is more limited but may gain more prominence under the new pension system. By law, pension providers are obliged to provide certain information to their stakeholders. The AFM checks that pension providers meet these requirements.

3.3 Expectations

In the Netherlands, approximately two third of the pension premium is paid or sponsored by the employer and the remaining third by the employee. Dutch employees until now mostly have a DC pension plan. In the past, the related benefits were promised in terms of a certain percentage (usually 70 to 75 percent) of the employee's

Figure 1: Average funding ratioa of Dutch pension funds, 1987-2020



(a) Funding ratio is defined as total assets divided by total liability provisions for current and future pensioners ('voorziening pensioenvoorziening') discounted by the risk-free market interest rate.
Source: CBS Statline and DNB Pension Statistics

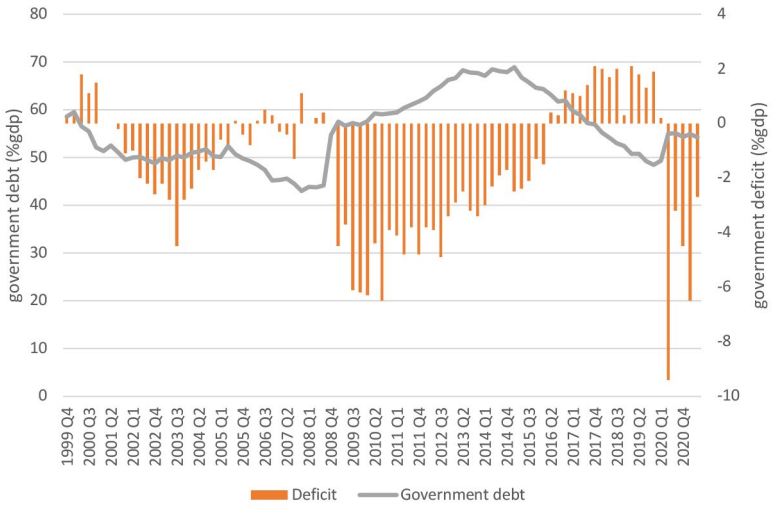
final pay, based on 40 years of contributions. Over time, however, this ambition has been toned down to guaranteeing the benefit to a percentage of the average pay over the employee's career. And during the last ten to fifteen years, pension funds have come to realize that the promises they made in the past are untenable; consequently, no indexation of pension rights and benefits has been applied for the majority of pensioners during that period. Increases in life expectancy, the various crises on the stock market, and the historically low interest rates have made it difficult to match assets with future liabilities. The development over time of the funding ratio of Dutch pension funds – total assets divided by total liabilities to present and future pensioners – is presented in Figure 1.

This figure clearly shows the impact of a number of crises on the financial sustainability of pension funds. The current century has been a volatile period for pension funds, a result of both the credit crisis and the subsequent stock market crash, as well as the fall of interest rates to historically low levels. To interpret this figure, one should keep in mind that a funding ratio of 100 percent implies that a pension fund has no resources to adjust the pension entitlements of its participants for inflation. Under the current Pensions Act, pension funds with a funding ratio of 104 or lower must take corrective action in coordination with the Dutch pension regulator to bring the funding ratio to a safer level (between 104 and 110). In addition, pension funds may adjust the benefits for inflation once the funding ratio has reached 110 or higher. An earlier vignette study in 2008 among trustees of Dutch pension funds by Van Dalen, Henkens, Koedijk, and Slager (2012) shows that conservatism may be at play in granting extra indexation of pension benefits. Their study shows strong asymmetries in the decisions on indexation (and other key instruments). Even at a funding ratio of 130, which trustees at that time considered optimal, only limited indexation (or none at all) was their preferred choice. Based on the strict monitoring by the pension regulator DNB, one could say that the funding ratio is more or less internalized by the Dutch pension industry. A major reason why DNB puts so much emphasis on strictly monitoring the funding ratio is the dominance of defined benefit (DB) pensions in the Dutch situation, which was regarded as tantamount to guarantees cast in stone. To maintain their promises, pension funds have to accumulate more buffers than pension providers, such as insurance companies, that offer defined contribution contracts. This aspect is perhaps illustrative of a country whose pension history is firmly based on defined benefit (DC) contracts, which in turn leads to all kinds of dilemmas that are related to how one views or perceives the pension contract: as a complete or as an incomplete (or implicit) contract (cf. Clark and Monk (2008)).

A pension fund is required to maintain a buffer that is capable of absorbing financial shocks. For example, if stock prices drop sharply, such a buffer may prevent a pension fund from facing a funding deficit. The level of that buffer is expressed as the "required funding ratio". A pension fund is financially healthy if it meets the required funding ratio. The specifically required funding ratio is not the same for every pension fund. Those that take greater risks with their investments have a higher mandatory funding ratio, as they need a higher buffer to absorb financial setbacks. The mandatory funding ratio therefore reflects the risk level that a pension fund faces. This can therefore mean that a specific pension fund may be perfectly healthy, e.g., if its funding ratio is 110 percent, whereas another fund is only safe at 120 percent.

The other central party that we examine in this paper, relevant to understand trust in the era which we are going to examine, is the central government in its role as pension provider. Since the start of this century, the pension system has been under scrutiny, leading to the termination of early retirement arrangements in 2005. However, in the aftermath of the credit crisis of 2008, the Dutch government decided to take concrete steps to reform the pension system, and in 2011 it agreed, in consultation with the social partners, to raise the statutory retirement age to 66 by the year 2020 and to 67 by the year 2025. One year later, the plans were revised and Dutch pension law was amended whereby the retirement age of 66 would be achieved by the year 2019 and the age of 67 by the year 2023. However, in June 2015 the statutory retirement age was raised even higher. After all, the government was encountering

Figure 2: Government debt and budget deficits and surpluses in the Netherlands (% GDP), 1999 Q4–2021 Q2



Source: CBS Statline

fiscal pressures, starting in 2012, from the Structural Growth Pact of the EMU, since the national debt level exceeded the threshold level of 60 percent and as the government's long-run budgetary position did not look promising. Earlier research by Parlevliet (2017) on acceptance of Dutch statutory retirement age reform showed that until 2012 the Dutch general public supported a higher retirement age, but in 2013 this support plummeted. Increasing the state retirement age was key to solving this pressure, and by the year 2022 the pension age would be linked to the average life expectancy. This abrupt change met with a strong negative reaction from the trade unions. Older workers especially were caught by surprise (Van Solinge & Henkens, 2017), but the rapid increase in retirement age also led to considerable concerns among employers (Van Dalen, Henkens, & Oude Mulders, 2019).

As can be seen in Figure 2, the financial crisis led to an abrupt jump in the government debt ratio as well as to years of relatively high budget deficits. By mid-2016 a series of budget surpluses were followed again by a steep rise of the national debt, plus by budget deficits to finance the consequences of the Covid pandemic. In June 2019 the government and social partners finally agreed upon the transition to a new pension system. The new pension rules are expected to come into force no later than on January 1, 2023. By January 1, 2027 at the latest, employers, employees, and pension providers must have brought their pension schemes with pension accruals in line with the new system. In the intervening period, employers' organizations, trade unions, and pension providers can make agreements about the new pension schemes and about how the transition from the current Defined Benefit system to the new Defined Contribution system will be made.

4. Data and methodology

4.1 Data

We used data collected by surveys that were designed to measure trust in pension funds at eight points in time, namely the years 2004, 2006, 2009, 2011, 2014, 2015, 2020, and 2021. The response rates of the various survey years varied from 65 to 81 percent (see appendix A1). The fieldwork was carried out by Centerdata of Tilburg University, the first six years through the Center panel (2004–2015) and the last two years through the LISS panel. Both are mainly internet panels. The Center panel used in this paper weres between1,800 to 2,200 respondents, whereas the LISS panel had approximately 7,500 individuals who can participate, although most sample sizes were tailored to specific projects, as the two surveys used in the current paper: 1,625 and 2,876. All individuals in the panels were selected on the basis of a true probability sample of households drawn by Centerdata from the Statistics Netherlands population register.

The total sample in this study included 16,352 respondents. The attrition rates in the panels were quite high so that this dataset was not suitable for analysis of changes in trust over time at the individual level. For purposes of this paper the data were analyzed as a repeated cross-sectional survey dataset.

4.2 Dependent variables

Our central measures of trust revolve around the question whether respondents trust the two most dominant institutions in the Dutch pension system: (1) the government as provider of the state pension (AOW) in the first pillar, and (2) pension funds as the most dominant organizations that provide a supplementary pension in the second pillar. The question that operationalizes and captures trust in these two institutions was: "To what extent do you trust the following institutions in offering a comfortable pension?", with answer categories: (1) no trust, (2) little trust, (3) neutral, (4) some trust, and (5) a lot of trust. Distrust is defined as the state where respondents express little or no trust (1–2), and trust is the state where they express some or a lot of trust (4–5).[2] Obviously these are broad-scope measures of trust in pension funds and not trust measures of the specific pension funds of participants (Van der Cruijsen et al., 2021a). Because the general population is asked to respond to these questions, the trust question about pension funds will be somewhat abstract for individuals who

2 For a full overview of the distribution of answers across the various sample for these five categories, see Table A2 in the appendix.

Table 1: Descriptive statistics

	Frequencies (%)
Trust in pension funds as pension provider	
Distrust	22.3
Neutral	31.0
Trust	46.7
Trust in government as pension provider	
Distrust	29.8
Neutral	32.1
Trust	38.1
Year	
2004	12.6
2006	11.1
2009	12.4
2011	13.0
2014	13.1
2015	11.6
2020	9.6
2021	16.7
Age (in years)	Mean = 52.8 years (s.d.=16.3)
Birth year[a]	
1920–1929	1.9
1930–1939	9.6
1940–1949	19.6
1950–1959	22.3
1960–1969	17.3
1970–1979	16.5
1980–1989	8.8
1990–1999	4.0
Labor force position	
Employee	46.5
Self-employed	4.5
Pensioners	25.1
Unemployed	2.4
Disabled	4.3
Other	17.2
Level of education[b]	
Elementary	5.2
Lower vocational	24.4
Intermediate vocational	20.4
Intermediate general	11.2
Higher professional	25.9
University	12.8
Gender *Ref= permanent x 18 years*	
Male (reference)	51.9
Female	48.1
Partner status	
No partner (reference)	24.9
Partner	75.1
N =	N=16,352

(a) See Table A3 for how cohorts are distributed across the various survey years.
(b) Educational categories are based on highest attained educational level: elementary = primary school; lower vocational = vmbo; intermediate general = havo, vwo; intermediate vocational = mbo; higher professional = hbo; university.

have no employment history and have thus not accumulated supplementary pension rights, whereas the government will by its very nature as provider of a state pension be more concrete since everyone is covered by a state pension.

To explain the development of trust over time we used the following set of variables: (1) year of birth, converted into specific birth cohorts[3], (2) gender, (3) partner status (with partner or not), (4) highest attained educational level, and (5) primary position on the labor market (employee, self-employed, disabled, unemployed, retired, and a residual group with positions outside the official labor market, such as student, household caretaker, volunteer, unpaid labor within the household, or family business unpaid work with a social security benefit). To capture the financial situation of the pension funds in general, we used the funding ratio as calculated in Figure 1 in the quarter preceding the survey data collection period; where quarterly data were unavailable (at the start of the observation period), we used data for the year preceding the data collection period (see Table A5 in the appendix). Table 1 contains an overview of the descriptive statistics of the variables used. This table shows that in the full sample, the level of trust in pension funds (47%) is higher than that in the government as pension provider (38%). Distrust is lower for pension funds (22%) than for the government in its role as pension provider (30%).

4.3 Method

To be able to analyses trust and distrust as a discontinuous outcome variable, we apply multinomial logistic analyses in which the categories 'trust' and 'distrust' are compared to the category of respondents who took a 'neutral' position.[4] When analyzing repeated cross-sectional survey data, one should be careful not to interpret the estimation results as giving insight into how specific individuals change their level of trust or distrust over the sample period 2004-2021. The current data structure mainly

3 The number of observations per cohort across the various samples, as well as the levels of trust across cohorts for the various sample years, is presented in Table A3 in the appendix.

4 To test the proportional odds assumption underlying an ordered logistic analysis, we applied the Brant test (Brant, 1990). This shows that this form of analysis violates the parallel regression assumption. In that respect, the multinomial logit is a more appropriate form of regression analysis.

provides insight into how the opinion of an aggregate population or group changes and how trust or distrust is affected by the financial stability of pension providers. Aside from this interpretation aspect of repeated cross-sectional data, there are also some methodological and econometric challenges involved in using age-period-cohort (APC) analysis using repeated cross-sectional data, as noted by a diverse set of authors, starting with Heckman and Robb (1985) and more recently by Fosse et al. (Fosse & Winship, 2019; Fosse, Winship, & Daoud, 2020) and Bell and Jones (2014). The main issue revolves around the identification problem. This arises because there is an exact linear dependence between age, period, and cohort (Period = Age + Cohort). Every solution to this problem gives the reader a second- or third-best view of what is happening to some outcome variable in terms of these APC variables. Only by imposing strong assumptions can this technical conundrum be solved. As Bell (2020) notes in a review article about the array of 'solutions' to the APC problem: "None of these methods solve the identification problem – rather they acknowledge that methods are limited by assumptions." Heckman and Robb (1985) propose, for dealing with this problem, assuming specific measured variables that serve as a proxy to the underlying unobserved variables.

To discover whether the financial solvency of pension funds is related to trust and to what extent this issue plays a role in the mind of pension fund members, we will replace the yearly effects by the average funding ratio of pension funds. The number of periods that we analyses is too limited to analyses and discuss age and cohort effects in depth. As such, we only included cohorts as a control variable in our model. For both our models of trust/distrust in pension funds and in government, two versions are estimated. The first version includes the survey year as a predictor variable, plus a set of control variables that includes birth cohorts, the workforce position, the level of education, gender, and partner status (cf. Parlevliet (2017)). To correct for within-respondent effects (i.e. the presence of respondents being included in more than one wave[5]), we will use the clustering option to generate robust standard errors. In the second version we replace the year dummy variables by an indicator of financial stability: the funding ratio for the case of pension funds and public debt for trust in the government. In this second version we use robust standard errors, allowing not only for within-respondent correlation in the analyses but also for intra-year correlation by means of two-way clustering, to handle the multilevel structure of the data.

5 Of the overall sample of respondents, 38 percent appear more than once in the dataset.

5. Results

The results of the multinomial logit analyses of trust and distrust in pension funds and the government are presented in Table 2 in terms of average marginal effects, in other words the marginal effect of changing the values of covariates on the probability of observing a specific outcome (being distrustful, neutral or trustful). For instance, for individuals with a university education the average probability of lack of trust or being neutral towards pension funds goes down by 0.09, respectively 0.15, while the average probability of trust in pension funds goes up by 0.24 (summing up by definition to zero), compared to the reference category of those with only elementary education.

The first three columns contain the results for pension funds, while the fourth, fifth and sixth columns contain those for the corresponding models for the government in its role as state pension provider. The coefficients in both models show that trust and distrust in pension funds as well as in the government differ over time. To gain more refined insight into this development, the predicted margins for trust levels across the years (controlling for all individual level variables included in the model) are presented in two separate figures. Figure 3 displays the percentage of trust in pension funds and the government for the successive survey years between 2004 and 2021. Figure 4 displays the levels of distrust in pension funds and the government across the same sample period.

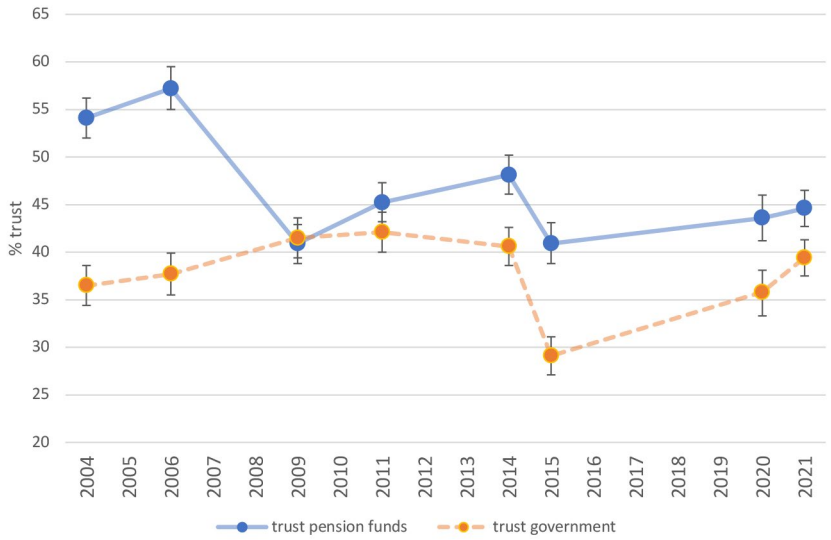
As one can see in these two figures, at the start of this century the Dutch population had considerable trust in pension funds and were considerably distrustful about the government as pension provider. With the emergence of the credit crisis in 2008, the level of distrust in the government became less prominent, while *trust* in pension funds *declined sharply* and *distrust rose considerably*. In the years following the crisis people regained some trust in pension providers, although their distrust did not decline. It is, however, worth noting that in times of crisis the trust in these two institutions can switch rank: whereas pension funds experienced a sharp decline in trust, the government gained some trust. In 2009 both the government and pension funds were considered to be equally trustworthy in the eyes of the population. This was a unique moment in time because in times without any crisis the government has a significantly *lower* level of trust compared to pension funds. This 'crisis effect' on the level of trust in government could be due to the fact that the Dutch government in 2009 came to the rescue of banks that were 'too big to fail' (such as ING and ABN AMRO) and indirectly prevented a further crash for pension funds.

Table 2: Explaining trust and distrust in pension providers by the Dutch public in the period 2004-2021, average marginal effects

	Trust in pension funds						Trust in government					
	Distrust		Neutral		Trust		Distrust		Neutral		Trust	
Year (base =2004)	Dy/dx	s.e.	Dy/dx	s.e.	Dy/dx	s.e.	Dy/dx	s.e.	Dy/dx	s.e.	Dy/dx	s.e.
2006	-0.03**	0.01	0.00	0.01	0.04	0.01	-0.03*	0.01	0.02	0.01	0.01	0.01
2009	0.07***	0.01	0.06***	0.01	-0.13***	0.02	-0,07***	0.01	0.02	0.01	0.05*	0.02
2011	0.06***	0.01	0.03*	0.01	-0.09***	0.01	-0.05***	0.01	-0.01	0.01	0.06***	0.01
2014	0.09***	0.01	-0.03*	0.01	-0.06***	0.02	0.01	0.01	-0.05***	0.01	0.04**	0.01
2015	0.12***	0.01	0.01	0.01	-0.13***	0.02	0.10***	0.02	-0.02	0.01	-0.07***	0.01
2020	0.12***	0.01	-0.01	0.01	-0.10***	0.02	0.07***	0.02	-0.06***	0.02	-0.01	0.02
2021	0.06***	0.01	0.03*	0.02	-0.09***	0.01	-0.02	0.01	-0.01	0.02	0.03*	0.01
Birth cohort (base = 1920-1929) *Ref= permanent x no partner*												
1930-1939	0.05	0.02	0.06*	0.03	-0.11**	0.04	0.08**	0.03	0.07*	0.03	-0.16***	0.04
1940-1949	0.08**	0.02	0.03	0.03	-0.12**	0.04	0.14***	0.03	0.07*	0.03	-0.21***	0.04
1950-1959	0.09***	0.02	0.04	0.03	-0.13***	0.04	0.16***	0.03	0.07*	0.03	-0.23***	0.04
1960-1969	0.14***	0.02	0.10**	0.03	-0.24***	0.04	0.14***	0.03	0.10**	0.03	-0.24***	0.04
1970-1979	0.17***	0.02	0.10**	0.03	-0.28***	0.04	0.14***	0.03	0.09**	0.03	-0.23***	0.04
1980-1989	0.18***	0.02	0.14***	0.03	-0.32***	0.04	0.14***	0.03	0.12***	0.03	-0.26***	0.04
1990-1999	0.14***	0.02	0.22***	0.04	-0.36***	0.04	0.12**	0.03	0.17***	0.04	-0.29***	0.04
Labor force (base = employee)												
Self-employed	0.12***	0.02	-0.00	0.02	-0.11***	0.02	0.05*	0.02	0.02	0.02	-0.07***	0.02
Pensioners	-0.04**	0.01	-0.02	0.02	0.06***	0.02	0.02	0.02	-0.01	0.01	-0.01	0.02
Unemployed	0.04	0.02	0.02	0.02	-0.06*	0.03	0.06*	0.02	0.03	0.02	-0.08**	0.02
Disabled workers	0.06**	0.02	0.05*	0.02	-0.11***	0.02	0.09***	0.02	-0.03	0.02	-0.06*	0.02
Other	0.01	0.01	0.03*	0.01	-0.04**	0.01	0.01	0.01	0.01	0.01	-0.02	0.01
Education (base = elementary)												
Lower vocational	0.02	0.02	-0.07**	0.02	0.05*	0.02	-0.02	0.02	-0.02	0.02	0.04	0.02
Intermediate vocational	-0.02	0.02	-0.08***	0.02	0.10***	0.02	-0.05*	0.02	-0.02	0.02	0.07***	0.02
Intermediate general	-0.03	0.02	-0.12***	0.02	0.15***	0.02	-0.10***	0.02	-0.05*	0.02	0.15***	0.02
Higher professional	-0.06***	0.02	-0.12***	0.02	0.18***	0.02	-0.12***	0.02	-0.05*	0.02	0.17***	0.02
University	-0.09***	0.02	-0.15***	0.02	0.23***	0.02	-0.17***	0.02	-0.10***	0.02	0.26***	0.02
Gender (base = male) *Ref= permanent x 18 years*												
Female	0.01	0.01	0.06***	0.01	-0.07***	0.01	-0.02	0.01	0.06***	0.01	-0.04***	0.01
Partner (base = none)												
Partner	0.01	0.01	-0.00	0.01	-0.01	0.01	0.04***	0.01	-0.02*	0.01	-0.02*	0.01
Pseudo R^2	0.05							0.03				

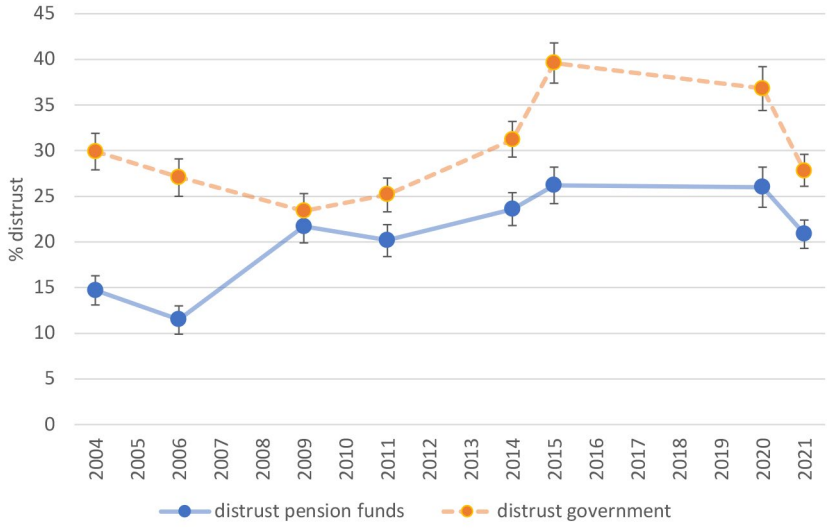
N = 16,352 Note: estimated with multinomial logit with neutral category as the base category; *** p < 0.001 **p<.01 *p<0.05. Dy/dx = average marginal effects of covariates (x) on outcomes of distrust, neutral, and trust (y). (a) standard errors controlled for cluster effects at respondent level. Due to rounding errors the marginal effects across outcomes may not add up to zero.

Figure 3: Trust in pension funds and government across time



Note: Trust levels are predicted margins based on models presented in Table 2. Bars denote 95% confidence intervals.

Figure 4: Distrust in pension funds and government across time



Note: Trust levels are predicted margins based on models presented in Table 2. Bars denote 95% confidence intervals.

The sudden drop in trust in both pension funds and the government between 2014 and 2015 may be ascribed to the fact that the Dutch government decided to speed up the rate at which the statutory retirement age was set to increase, thereby lowering the long-term government expenditures on state pensions.[6] Because supplementary pensions and the state pension are intertwined, the blame for increasing the state pension age appears to have been shifted to the government and to a far lesser extent to the pension funds. Figures 3 and 4 show a widening of the gap in trust and distrust between these two pension providers. After 2015 we see a slight recovery in trust in the government. This might be related to the pension reform concluded in 2020, where the government reduced the pace of increase of the state pension age in response to political pressure from various sides.

Next to the year dummies in Table 2, several individual level factors proved to be relevant to understand how trust in pension providers is perceived differently by individual citizens. The results in the first column shows that distrust in pension funds is more likely and trust less likely among younger birth cohorts, the self-employed, and disabled persons. The outcome that young birth cohorts are more distrustful may relate to the fact that their involvement and interest in pensions is generally low. However, the outcome that the self-employed are particularly distrustful is a novel element. This might reflect the fact that self-employed persons are excluded from participating in pension funds as soon as their status changes from employee to self-employed. And if they wish to accumulate pension reserves, they are then confronted with the fact that their pension premiums are far higher than for the privileged position of employee. (In the Netherlands the employer generally pays two third of the total premium and the employee one third.) However, it may also signal a characteristic of self-employment. Sometimes self-employed persons are forced into their new working position as a result of a reorganization or downsizing exercise within their former working environment (Hershey et al., 2017). In other cases, self-employed workers are not true entrepreneurs. According to Kwon and Sohn (2021), self-employed persons and entrepreneurs tend to work in different trust settings, with the self-employed in settings that are highly monitored, where they meet what Rousseau, Sitkin, Burt, and Camerer (1998) call 'calculus-based trust'; a form of trust based on rational choice, focused on the short run (contrary to relational trust, with repeated interaction).

6 The Raising of the State Pension Age and Standard Pension Retirement Age Act ('*Wet verhoging AOW- en pensioenrichtleeftijd*') was approved by the Upper House on June 4, 2015, and the survey was held one month later. The unexpected surprise and the dismay among workers (especially older workers close to retirement) was in that respect an element that may explain the sharp fall in trust as measured between June 2014 and July 2015. The initially announced phased increase in the state pension age was apparently not that disturbing, but the fact that the government broke an earlier promise and plan may well have led to this drop in trust (cf. De Beer et al. 2017).

The results in the third column of Table 2 show that these structural indicators are more important for understanding the differences in *trust* in pension providers among different participants in society. Younger birth cohorts are less likely to appear in the trust category.[7] Also, disabled workers and self-employed persons are less likely to display trust in pension funds. The educational gradient is strong, with especially higher educational levels being much more likely to have trust in pension funds. Table 2 also reveals that women are more likely to belong to the neutral category; they are less likely to trust pension funds. This insight might be related to the results found in the neuro-economic laboratory trust experiments by Zak, Borja, Matzner, and Kurzban (2005), who showed the presence of distinct gender differences in physiological reactions to signals of distrust. According to these authors it "suggests that men in our experiment had an aggressive reaction when they received a signal of distrust, while women did not."

The results of trust and distrust in pension provision by the government are presented in the fourth to sixth columns of Table 2. These results show that distrust is more likely among disabled workers and less likely among those with the highest level of education. Trust in the government has a clearly positive association among those with a high level of education. Also, with respect to the pension provision of the government, the self-employed are less likely to express trust, and women, same as in the case of pension funds, are more likely to take a neutral position.

Table 3 presents the results of the models where the year dummies (of Table 2) are replaced by indicators of financial stability as a proxy for underlying unobserved variables. For the multinomial logit model on trust/distrust in pension providers, we included the average funding ratio of Dutch pension funds as a group as predictor. In the corresponding model for the state pension provision by the government, we included public debt (as a percentage of GDP) as a predictor variable.

The results show that the average marginal effect of a higher funding ratio is associated with a higher probability among the overall population having trust in pension funds. The average marginal effect of the funding ratio on being distrustful

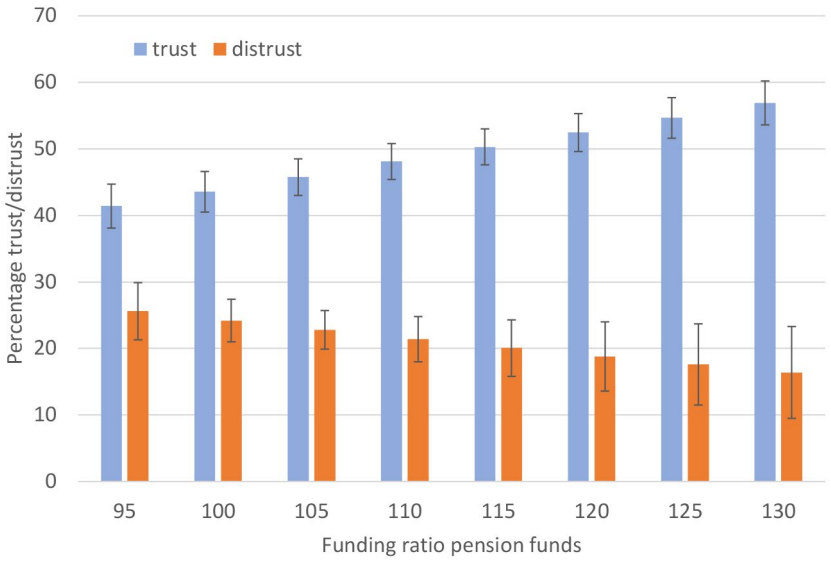
7 These cohort effects are difficult to truly pinpoint, as noted in the methodology section on the APC identification problem. This can also be seen as an age effect, as similar models that use age group dummies instead of cohort dummies show. The older the respondent, the greater the trust in pension providers.

Table 3: Explaining trust and distrust in pension providers by the Dutch public in the period 2004–2021 with proxy variables for financial stability, average marginal effects

	Trust in pension funds						Trust in government					
	Distrust		Neutral		Trust		Distrust		Neutral		Trust	
	Dy/dx	s.e.	Dy/dx	s.e.	Dy/dx	s.e.	Dy/dx	s.e.	Dy/dx	s.e.	Dy/dx	s.e.
Funding ratio (x 10^{-2})	−0.27	0.16	−0.17	0.12	0.44***	0.06	–	–	–	–	–	–
Government debt ratio (% GDP) (x 10^{-2})	–	–	–	–	–		0.24	0.26	−0.15	0.13	−0.08	0.26
Birth cohort (base = 1920–1929) *Ref= permanent x no partner*												
1930–1939	0.05*	0.02	0.07	0.05	−0.12*	0.05	0.08*	0.03	0.08	0.04	−0.16**	0.06
1940–1949	0.10***	0.02	0.04	0.04	−0.14**	0.04	0.15***	0.03	0.07*	0.03	−0.22***	0.04
1950–1959	0.12***	0.02	0.04	0.03	−0.16***	0.04	0.18***	0.03	0.06*	0.04	−0.24***	0.05
1960–1969	0.17***	0.03	0.10**	0.04	−0.27***	0.04	0.16***	0.04	0.09*	0.04	−0.25***	0.04
1970–1979	0.20***	0.03	0.10**	0.03	−0.30***	0.03	0.15***	0.03	0.08*	0.04	−0.23***	0.04
1980–1989	0.22***	0.03	0.13***	0.03	−0.35***	0.03	0.17**	0.05	0.10*	0.04	−0.27***	0.05
1990–1999	0.18***	0.03	0.21***	0.04	−0.39***	0.05	0.14***	0.04	0.14**	0.05	−0.29***	0.05
Labor force (base = employee)												
Self-employed	0.12***	0.02	−0.00	0.02	−0.12***	0.02	0.05***	0.01	0.02	0.02	−0.07**	0.02
Pensioners	−0.01	0.02	−0.02	0.01	0.04	0.03	0.04	0.03	−0.02	0.02	−0.02	0.02
Unemployed	0.05*	0.02	0.01	0.02	−0.07**	0.02	0.07**	0.02	0.02	0.01	−0.09***	0.03
Disabled workers	0.07***	0.02	0.05**	0.02	−0.12***	0.01	0.09**	0.03	−0.03	0.02	−0.06*	0.03
Other	0.01	0.02	0.03**	0.01	−0.04*	0.01	0.01	0.02	0.01	0.02	−0.02	0.021
Education (base = elementary)												
Lower vocational	0.03	0.02	−0.07***	0.02	0.04*	0.02	−0.01	0.02	−0.02	0.02	0.04*	0.02
Intermediate vocational	−0.01	0.02	−0.09***	0.02	0.09***	0.03	−0.04**	0.01	−0.03	0.01	0.07***	0.01
Intermediate general	−0.03	0.02	−0.12***	0.02	0.14***	0.02	−0.10***	0.02	−0.05*	0.02	0.15***	0.02
Higher professional	−0.05*	0.03	−0.12***	0.02	0.18***	0.03	−0.12***	0.02	−0.05**	0.02	0.17***	0.02
University	−0.08**	0.02	−0.15***	0.02	0.23***	0.02	−0.17***	0.02	−0.10***	0.03	0.27***	0.03
Gender (base = male) *Ref= permanent x 18 years*												
Female	0.01	0.01	0.06***	0.01	−0.08***	0.01	−0.01	0.01	0.06***	0.01	−0.04***	0.01
Partner (base = none)												
Partner	0.01	0.01	−0.00	0.01	−0.01	0.01	0.04**	0.01	−0.02	0.01	−0.02	0.01
Pseudo R^2	0.04							0.02				

N = 16,352 Note: estimated with multinomial logit with neutral category as the base category; *** p < 0.001 **p<.01 *p<0.05. Dy/dx = average marginal effects of covariates (x) on outcomes of distrust, neutral, and trust (y). (a) standard errors controlled for cluster effects within years and at respondent level, by means of two-way clustering. Due to rounding errors the marginal effects across outcomes may not add up to zero.

Figure 5: Levels of trust and distrust in pension funds for various funding ratios



Note: Trust levels are predicted margins based on models presented in Table 3. Interval bars denote 95% confidence intervals.

(and neutral) is negative, as one would expect, but this effect is not statistically significant.[8] When we turn to the effect of public debt levels on trust/distrust in government, the results show no statistically significant effect. Of course, compared to the funding ratio of pension funds, public debt is an imperfect measure, since the total public debt is the result of various government spendings and not just the government's pension expenditures. We also experimented by using public budget deficits (as a percentage of GDP) as an alternative predictor, but this also did not affect the level of trust and distrust in the government as pension provider.
To capture the size of the effects of the estimated response of trust to changes in the average funding ratio of pension funds in more detail, we present Figure 5: the predicted margins of trust and distrust (based on the model in Table 3) in relation to the funding ratio of pension funds (ranging from 95 to 130).

The figure shows a clear association of the level of trust with the average funding ratio. With a funding ratio of 95, the percentage of respondents who show trust in pension funds is predicted to be 41 percent. With a funding ratio of 130, the

8 As a robustness check for the funding ratio effect, we also examined a version that includes age as a continuous variable. This yielded the following set of marginal effects of the funding ratio: distrust −0.22 (s.e. 0.14); neutral −0.19 (s.e. 0.10); and trust 0.41 (s.e. 0.09). Hence the funding ratio coefficient hardly changes, the age coefficient is insignificant for all outcomes ($p < 0.05$), and the cohort coefficients are also not affected in any significant manner.

percentage of respondents showing trust is predicted to be 57 percent. A situation where the majority of the adult population trusts pension funds is attained, based on the estimation results, at funding ratios of at least around 115.

The situation is, however, slightly different when it comes to distrust. Although we see in Figure 5 a decrease in the percentage of distrust across the various funding ratios (from 26 percent in case of a funding ratio of 95 to 16 percent in case of a funding ratio of 130), the differences are smaller than in the case of trust and not statistical significant (see first column of Table 3). These findings suggest that some asymmetry in the relationship between the funding ratio and trust and distrust exists. A high funding ratio is clearly associated with a high trust level but a high funding ratio is clearly not associatedwith a low level of in distrust as displayed in the figure by the wider confidence intervals for the lower and higher ends of the depicted funding ratios.

6. Conclusion

Trust and distrust in pension providers in the Netherlands in the early years of this century has been shown to be volatile. Before the Great Recession the level of trust was high and the level of distrust low. Once the consequences of the crisis became clear for pension funds, trust in pension providers dropped considerably and distrust increased, but as we show in this paper these reactions are not symmetrical. We also examined whether the financial stability of pension funds and the national government – as measured by objective indicators for both institutions – played a role in understanding the development of trust and distrust. In the day-to-day strict regulation of Dutch pension funds by the Dutch central bank, the funding ratio is a key indicator, as it determines whether a pension fund needs to cut pension benefits or can increase them to adjust them for inflation or maintenance of living standards. These decisions are particularly relevant for pension fund members whose pension rights are at stake. Hence, one would expect this indicator to indirectly have a large impact on trust in pension funds. As for the government, we have examined the national debt level as the prime indicator of financial stability, but our results indicate that for the government as state pension provider this indicator plays no significant role in matters of trust. For pension funds, the funding ratio does significantly affect trust, but when it comes to distrust compared to neutrality the effect of changing funding ratios is hardly noticeable (see Table 3).

Besides this key finding, it is also noteworthy to see how important personal characteristics are as underlying drivers of trust or distrust. In particular, the self-employed are more prone to distrust pension funds (and less likely to trust them) than other members of the workforce. This is an important finding in view of the current discussion about increasing the involvement of the self-employed in generating supplementary pension rights. In part this may be a reflection of the situation that faced the self-employed during the sample period, when there were limited affordable possibilities to accumulate pension rights. In the upcoming reform more options will be available for the self-employed to participate on a voluntary basis in the pension fund of their particular work sector. The lower level of trust of the self-employed may signal that their interest in participating in pension funds will be modest. The finding that pensioners are generally more likely to trust pension funds than employees is noteworthy, perhaps to be ascribed to the fact that – despite all upheavals during the sample period – pension funds still largely managed to honor their promises within the strict regulatory rules set by the Dutch central bank. For the Netherlands, Van Dalen and Henkens (2015) show, for instance, that most individuals fully blame

the banks and insurance companies for the dire position they found themselves in during the Great Recession, whereas, with regard to the pension funds, they were far more likely to say that their financial position was either beyond their control or only partially their own fault.

Finally, women are more likely than men to take a neutral position as they are less likely to express trust or to distrust. This neutral position could be a reflection of the traditional gender roles in the Netherlands, where men tend to work fulltime, whereas women work part-time. The interest of men in pensions is thus likely to be higher as they make more contributions to occupational pension schemes than women. Although this pattern is slowly changing in the Netherlands, this divide will certainly still be visible among the older generations. A recent survey shows that, despite the current change, women are less interested in and less knowledgeable about pension issues (Van Dalen & Henkens, 2021a), and similar findings about the handling of pension affairs can be found in Bucher- Koenen, Lusardi, Alessie, and Van Rooij (2017). This may be a worrisome development, as fundamental changes in pension systems are taking place that may turn out to be unpleasant surprises for women who do not take notice of these developments, should they become widowed or divorced (cf. insights of the English case of pension reform (Holman, Foster, & Hess, 2020)). A final important finding is that age as well as educational level have a strong effect on trust: older generations are more likely to trust pension funds and the government than younger generations; and persons with higher education are far more likely to trust both pension providers. The lower educated are more likely to distrust pension funds. To a certain degree, the educational effects are to be expected since education and financial literacy are highly correlated. These trust effects are well-documented in the pension trust literature (Van Dalen & Henkens, 2018; Van der Cruijsen et al., 2021a; Vickerstaff et al., 2012).

Policy implications

As we come to the end of this paper we also want to reflect on the implications of these regression analyses for the everyday practice of pension institutions. The first clear message is that the funding ratio, as indicator of the financial stability of pension funds, *matters* in the eyes of the general population. However, as our estimates show, there is asymmetry in the way the funding ratio affects the trust level of the population. A funding ratio increase appears to correspond with a significant positive effect on those who express trust, whereas there is not a clear indication as to whether this increase leads to lower distrust compared to being neutral (see Table 3).

We also considered the issue of trust in the government in its role as state pension provider. For the period under review, estimates show that the prime indicator of financial soundness of the government – public debt as a percentage of GDP – has no noticeable impact on the level of trust or distrust that the general population has in the government as pension provider. An alternative indicator – the fiscal deficit as a percentage of GDP – also did not generate any impact. To some extent this is surprising compared to the indicator of pension funds, because in day-to-day practice both the funding ratio and the public debt level can have consequences once they exceed a certain threshold level. A possible interpretation of this asymmetric reaction across pension providers is that a funding ratio below a predetermined threshold has direct consequences for the pension rights of pension fund members, whereas the consequences of a public debt level above the threshold of 60 percent of GDP are dispersed and not necessarily aimed at pensions. On the other hand, when the consequences of exceeding this threshold focus on the pension domain – as was the case in 2015, when the increase of the state pension age was accelerated – trust is deeply affected. This goes to show that financial indicators may not tell the entire story. That is why, in the case of the COVID-19 crisis, the soaring public debt did not directly impact the level of trust: the Structural Growth Pact rules were not seen to apply to the exceptional circumstances of this crisis.

A third policy implication that we wish to point out may be that different stakeholders have different reasons to trust pension institutions. Pensioners generally have a higher level of trust than employees, while the self-employed are less trustful than employees, just like the higher educated have more trust than the lower educated. And although one cannot pinpoint this, there are signs that older persons are more trustful than younger persons. This may be a reflection of the transition that the Dutch pension system has undergone, but it could also be that for workers the pension uncertainty still has to resolve itself, whereas for pensioners their retirement situation has already crystallized. These differences in propensities to trust make it difficult to communicate pension measures, certainly for the government, but also to a high degree for pension funds. With the coming transition to a new pension system, this will be particularly challenging.

Finally, there is the issue that controlling the level of trust in pension funds may to a considerable extent be beyond their ability. Van Dalen and Henkens (2021b) show that trust in political and societal institutions has a considerable impact on the level of trust in pension funds. Given that the past few years have seen a considerable switch to a distrust of these institutions, this element may be particularly troubling for pension funds (and, for that matter, insurance companies that offer pension

contracts), because it makes pension funds partly dependent on what happens outside their own domain.

These policy implications obviously need to be interpreted with caution. After all, the stated findings are bound by some of the limitations of the dataset used. The number of repeated cross-sectional surveys is limited to eight years covering a time span of 18 years, and extending this study by an additional number of years would perhaps have generated more robust insights. Second, the relations between funding ratio and the level of trust do not permit us to make claims about which transmission mechanisms are at play in generating trust at the micro-level. However, other research indicates that pension fund members are likely to appreciate the consequences of having a high or a low funding ratio. For individual pension fund data we have shown earlier (Van Dalen & Henkens, 2015) that downgrading of pension rights – a step to be considered once the funding ratio drops below a threshold – clearly lead to higher distrust and lower trust in a specific pension fund. Van Zaal (2017) shows in a more refined manner for pension fund members how indexation of pension rights can increase and downgrading of pension rights can decrease trust, compared to participants who do not experience a change in pension rights. However, one should be aware that, besides the financial consequences, there can be different reasons why citizens trust financial institutions (Van Dalen & Henkens, 2018; Van Esterik-Plasmeijer & Van Raaij, 2017), and future research has to await how this can be refined in the case of pension providers. Third, one should remember that this paper focuses on overall trust in pension funds. In general, this is lower than the trust that current and former employees have in their own pension fund (cf. Van der Cruijsen, de Haan, and Roerink (2021b)). Finally, our study did not control for the financial literacy of respondents and whether changes in financial literacy are an important factor in understanding the trends in trust in pension institutions.

Discussion

This empirical analysis to understand the development of trust is relevant, for there are some concerns. After all, policymakers are tempted to think that increasing the funding ratios of pension funds will completely regain the trust that existed during the golden age of pension funds, when funding ratios of 120 and higher were common (at one time reaching a peak of 158). The Dutch pension reform that is planned for the coming years will put the trust in the pension system and its providers to the test. The lessons we can learn from the past several decades is that trust is likely to drop when radical changes occur in a pension system that basically remained the same for fifty years, but that it can recover once the dust of the reform has settled

and people have not lost trust completely. But perhaps a more nuanced view on trust and distrust will help to put the rise and fall of trust in perspective. Trust is in itself obviously good as it stimulates the division of labor and the outsourcing of activities, such as pension saving, which they are not well equipped to handle themselves. And distrust can be a positive quality of people, because someone who distrusts will be more vigilant in assessing the actions and statements of individuals and organizations when normal times cease to be normal (Posten & Mussweiler, 2013; Schul et al., 2008). However, neither blind trust nor stubborn or deep distrust is likely to be beneficial to an institution that is based on long-term promises. Blind trust can have its downsides because an organization may then feel that whatever it does is fine, and under conditions of weak governance or regulation trust may trigger misconduct or malfeasance on the side of the trustees. If distrust becomes deep distrust, this can set in motion a process of higher levels of regulation and hence increase the transaction costs of doing business (Aghion, Algan, Cahuc, & Shleifer, 2010). Especially in turbulent times, pension providers and regulators should be aware of both sides, as neither blind trust nor deep-seated distrust is a healthy sign.

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Appendix

Table A1: Sampling properties

Sample	Timing of fieldwork	N	Response rate
2004 (CentERpanel)	November	2070	65%
2006 (CentERpanel)	October	1823	69%
2009 (CentERpanel)	January	2039	73%
2011 (CentERpanel)	March	2129	79%
2014 (CentERpanel)	June	2145	71%
2015 (CentERpanel)	July	1934	71%
2020 (LISS panel)	February	1625	81%
2021 (LISS panel)	February–March	2876	81%

Table A2: Frequencies of trust levels in pension funds and the government (as pension providers), 2004–2021

	Periods								
	2004	2006	2009	2011	2014	2015	2020	2021	Total average
Pension providers: Trust in pension funds									
No trust	2.9	3.7	5.3	3.4	4.2	5.8	5.4	4.6	4.4
Little trust	13.2	9.2	18.0	18.0	21.6	22.2	23.5	18.2	17.9
Neutral	29.1	29.3	35.1	31.8	26.4	30.2	29.8	34.4	31.0
Some trust	40.4	40.5	32.5	36.7	36.7	33.4	33.1	32.6	35.7
Lot of trust	14.4	17.3	9.1	10.1	11.0	8.5	8.1	10.2	11.1
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Trust in government									
No trust	6.9	8.2	5.1	5.8	6.0	12.6	9.4	7.4	7.5
Little trust	23.0	18.8	18.4	19.6	24.6	28.0	27.3	20.2	22.3
Neutral	33.0	34.6	34.7	32.0	28.0	30.9	28.6	34.0	32.1
Some trust	30.1	30.3	34.4	34.8	34.5	24.9	30.0	32.4	31.6
Lot of trust	7.0	8.1	7.4	7.9	6.9	3.6	4.7	6.0	6.5
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table A3: Two-way cross-classified data structure in pension trust data – number of observations in each cohort-by-period cell

	Periods								
Birth cohorts:	2004	2006	2009	2011	2014	2015	2020	2021	total
1920–1929	92	66	55	44	24	17	6	10	314
1930–1939	285	252	254	253	190	185	62	92	1,573
1940–1949	374	310	425	478	405	454	274	483	3,203
1950–1959	468	420	443	517	398	466	332	605	3,649
1960–1969	397	305	332	380	318	289	300	501	2,822
1970–1979	310	335	362	320	493	301	204	375	2,700
1980–1989	133	119	108	91	268	156	209	348	1,432
1990–1999	0	6	48	40	48	33	176	308	659
Total	2,059	1,813	2,027	2,123	2,144	1,901	1,563	2,722	16,352

Table A4: Trust (% some/a lot of trust) in pension funds and government by birth cohorts, across sample years

Trust in government								
Birth cohorts:	2004	2006	2009	2011	2014	2015	2020	2021
1920–1929	50%	68%	59%	–	–	–	–	–
1930–1939	49%	46%	51%	47%	34%	21%	43%	37%
1940–1949	37%	43%	41%	40%	37%	26%	26%	35%
1950–1959	30%	32%	40%	40%	38%	26%	32%	39%
1960–1969	33%	35%	33%	43%	40%	27%	34%	38%
1970–1979	34%	38%	43%	46%	40%	29%	38%	36%
1980–1989	31%	21%	31%	38%	37%	33%	34%	37%
1990–1999	–	–	–	–	–	–	40%	37%
Trust in pension funds								
1920–1929	67%	60%	65%	–	–	–	–	–
1930–1939	71%	72%	50%	54%	50%	44%	51%	46%
1940–1949	60%	68%	46%	50%	60%	47%	39%	49%
1950–1959	52%	55%	43%	44%	52%	44%	55%	54%
1960–1969	45%	51%	33%	39%	39%	31%	40%	39%
1970–1979	44%	46%	31%	43%	35%	31%	34%	34%
1980–1989	40%	34%	32%	30%	32%	35%	34%	32%
1990–1999	–	–	–	–	–	–	32%	27%

Note: Cells with less than 50 observations are not reported. Weighted by age, gender, and education.

Table A4: Data used to measure time effects in trust[a]

Sample	Timing of fieldwork	Public debt (% gdp)	Government deficit (% gdp)	Funding ratio pension funds
2004	November	51.7	−1.4	105.5
2006	October	47.4	0.5	127.3
2009	January	54.7	0.0	95.5
2011	March	59.2	−3.9	106.7
2014	June	67.1	−3.0	111.2
2015	July	66.7	−2.4	108.9
2020	February	48.5	1.9	104.0
2021	February–March	54.3	−4.5	100.3

(a) based on the level registered in the quarter preceding the fieldwork.

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