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ABSTRACT

Over the last five decades, the degree of unionisation of workers has been decreasing and, therefore, by inadvertently accepting the deterioration of labour relations, the loss of labour rights, and the increase in the exploitation of labour all over the world, workers have not genuinely contested the neoliberal agenda and the deregulation and flexibilisation of the labour market. Our argument to explain this puzzling paradox of worsening labour conditions yet a lesser degree of unionisation finds that this is due to the financialisation of workers. On the one hand, workers with financial assets tend to reduce their unionisation due to their more financially solid position, pro-capital predisposition, perceived disconnection from union priorities, access to attractive remuneration benefits, a (psychological) sense of being owners (employers) and an alignment with capital's (employers') interests. On the other hand, workers with financial liabilities tend to reduce their unionisation due to their more financially fragile position, fears of job and income loss and concerns about default, reluctance to incur the immediate costs of monthly union dues, worries about the social stigma linked to potential default and a tendency to prioritise individual interests over collective action. This paper aims to study the relation between the financialisation of workers and their unionisation by performing a time series econometric analysis centred on Portugal over the period from 1980 to 2023. Our results confirm that the financialisation of workers exerts a negative effect on the degree of unionisation in Portugal. The financialisation of workers has indeed been one of the main factors behind the deunionisation in Portugal since the 1980s.

KEYWORDS

Financialisation of Workers, Workers' Financial Assets, Workers' Financial Liabilities, Deunionisation, Portugal.

JEL CLASSIFICATION: C22, G51 and J51 and J53

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1. INTRODUCTION

Labour conditions have been worsening, workers have been losing some labour rights, and the degree of exploitation of labour has been increasing all over the world since the 1970s and 1980s (Korpi and Shalev, 1979; Gouzoulis, 2023; Feres *et al*., 2024), which is observable in the decreasing labour income share and in stagnant (or falling) wages (Gouzoulis, 2021, 2022; Barradas, 2023; Alcobia and Barradas, 2023 and 2024; Gouzoulis *et al*., 2023a); the rise of top management compensation vis-à-vis the working class and blue-collar workers and the widening of inequalities in personal income (Barradas and Lakhani, 2024; Barradas, 2024a); the proliferation of atypical work (e.g. temporary or fixed-term contracts, dispatched contracts, involuntary part-time jobs and multiple job-holding) and the prevalence of non-standard labour contracts (Kalleberg, 2000, 2009; Chan, 2023; Gouzoulis *et al*., 2023b and 2024a); the increase in job insecurity, instability, insufficient social protection, precariousness, higher flexibility, scarcer incentives and lower-paid jobs (Tridico and Pariboni, 2018; Pariboni and Tridico, 2020); the surge of emotional abuse and/or other threats (e.g. discrimination, bullying, harassment and violence) in the workplace (Buttigieg *et al*., 2011); the deterioration in the balance between work and life and the intensification of work pressure (Ayudhya *et al*., 2019); and the spread of informal work and non-contract workers (Chan, 2023).

Nonetheless, workers have been decreasing their degree of unionisation in the last five decades and, therefore, have not genuinely contested the neoliberal agenda and the deregulation and flexibilisation of the labour market. This has been because they have been inadvertently accepting the deterioration of labour relations, the loss of labour rights, and the increase in the degree of the exploitation of labour all over the world during that time (Gouzoulis, 2024). This paradox of worsening labour conditions yet a lesser degree of unionisation is quite puzzling for scholars in the field of industrial relations. Our investigation finds that this is due to the financialisation of workers and their higher and stronger engagement with the realm of finance (Lapavitsas, 2011; Van der Zwan, 2014; Gonçalves and Barradas, 2021). On the one hand, workers with financial assets tend to reduce their unionisation due to their more financially solid position, pro-capital predisposition, perceived disconnection from union priorities, access to attractive remuneration benefits, a (psychological) sense of being owners (employers) and an alignment with capital's (employers') interests (Pendleton and Robinson, 2010; Bryson and Freeman, 2012, 2018; Cappelli *et al*., 2019; Fakhfakh *et al*., 2019; Smith *et al*., 2019;

Cronert and Forsén, 2023; Kristal, 2023; Carberry *et al*., 2024). On the other hand, workers with financial liabilities tend to reduce their unionisation due to their more financially fragile position, fears of job and income loss and concerns about default, reluctance to incur the immediate costs of monthly union dues, worries about the social stigma linked to potential default and a tendency to prioritise individual interests over collective action (Kelly and Kelly, 1994; Langley, 2007; Palley and LaJeuneesse, 2007; Stockhammer, 2009; Lazzarato, 2012; Van der Zwan, 2014; Wood, 2017; Sweet, 2018; Gouzoulis, 2023, 2024).

This paper aims to study the relation between the financialisation of workers and their unionisation by performing a time series econometric analysis centred on Portugal over the period from 1980 to 2023. This paper presents at least four different contributions to the existing literature about this matter. First, this paper clarifies from a theoretical point of view the mechanisms through which the financialisation of workers through the side of both financial assets and financial liabilities has favoured their deunionisation since the 1980s. Note that the literature on industrial relations has neglected the potential negative effects of the financialisation of workers through the side of financial assets on their unionisation, despite the higher theoretical and empirical development associated to the negative effects of this financialisation through the side of financial liabilities on their unionisation (Kelly and Kelly, 1994; Langley, 2007; Palley and LaJeuneesse, 2007; Stockhammer, 2009; Lazzarato, 2012; Van der Zwan, 2014; Wood, 2017; Sweet, 2018; Gouzoulis, 2023, 2024). Second, this paper identifies the determinants of unionisation in Portugal, paying particular attention to the expected negative impact caused by the financialisation of workers, for which the empirical evidence is quite limited. Gouzoulis (2024) is the only exception, in confirming a negative relation between the financialisation of workers through the side of financial liabilities and their unionisation in the cases of Japan, Sweden and South Korea. Third, this paper is centred on Portugal, for which empirical evidence is non-existent. Portugal is a very interesting case in a context in which we have also observed a general increasing trend of financialisation of workers through the side of both financial assets and financial liabilities and a strong decline in their degree of unionisation (Figure 1). This seems to suggest that these two stylised facts could be strongly interconnected, mainly if we take into account that Portuguese workers are the most financialised and the least unionised of the European Union (Barradas, 2022a; Waddington *et al*., 2023; Romão and Barradas, 2024). Fourth,

this paper also presents the economic effects of the statistically significant estimates, which allows us to better identify the main factors behind the deunionisation in Portugal since the 1980s (McCloskey and Ziliak, 1996; Ziliak and McCloskey, 2004).

We rely on an aggregate equation to address the determinants of unionisation in Portugal by following a macroeconomic approach, according to which unionisation depends on the financialisation of workers and other control variables that have been theoretically and empirically identified in the literature as important determinants behind the deunionisation in the last five decades all over the world (financialisation of corporations, inflation rate, industrial workforce, public workforce, and degree of globalisation). Our estimates were produced by employing the fully modified ordinary least squares (FMOLS) estimator (Phillips and Hansen, 1990), the canonical cointegration regression (CCR) estimator (Park, 1992) and the dynamic ordinary least squares (DOLS) estimator (Saikkonen, 1992; Stock and Watson, 1993), given that our variables are integrated of order one and, at the same time, cointegrated.

We conclude that the financialisation of workers has had a negative effect on unionisation in Portugal, especially through the side of financial assets, due to their being widespread within workers in comparison to financial liabilities. The financialisation of workers has indeed been one of the main factors behind the deunionisation in Portugal since the 1980s. We also conclude that the decline in industrial workforce has also exacerbated the fall in the degree of unionisation in Portugal since the 1980s, in a context in which a positive inflation rate and the expansion of public workforce were not enough to reverse the general decreasing trend of unionisation in Portugal since the 1980s.

The rest of this paper is structured as follows. In Section 2, we describe the theoretical mechanisms and the empirical evidence about the financialisation of workers, through both the side of financial assets and that of financial liabilities, and their deunionisation. Section 3 presents the model specification and hypotheses. The data and econometric methodology are described in Section 4 and Section 5, respectively. Section 6 displays the empirical results and discusses them. Finally, Section 7 provides the main conclusions.

2. REVIEW OF THE LITERATURE ON FINANCIALISATION AND (DE-) UNIONISATION OF WORKERS

It is widely acknowledged that the ideas promoted by Reagonomics and Thatcherism have been widely disseminated all over the world since the 1970s and 1980s, which has happened concurrently with a strong transformation of the financial system at the level of liberalisation, deregulation and privatisation of the financial institutions (Barradas, 2020, 2022b; Gouzoulis *et al*., 2024b). Consequently, the financial system has grown greatly and obtained a general increasing dominance over and penetration in the real economy, the general society, and the everyday life of workers, a phenomenon that is commonly referred to as financialisation (Van der Zwan, 2014).

One distinctive feature related to financialisation is the higher and stronger engagement of workers, including low income, low wealth and middle class ones, with the realm of finance (Lapavitsas, 2011; Van der Zwan, 2014; Gonçalves and Barradas, 2021) through not only the acquisition of financial assets (e.g. currency, deposits, bonds, stocks, investment fund stocks, worker stock options, life insurance pensions, other insurance products, money market funds, cryptoassets and financial derivatives) but also the contractualization of financial liabilities (e.g. mortgage credits, car loans, consumer credits, credit cards with high credit limits or without any credit limits, overdraft bank charges with small penalties or without any penalties and student loans).

The financialisation of workers through the side of financial assets has favoured a general increasing trend of workers' financial wealth all over the world since the 1970s and 1980s (Barradas, 2022a). This trend has been supported by the proliferation of remuneration schemes in the form of stocks and/or stock options (Grigoryeva, 2024) and in the form of profit-sharing (Orhangazi, 2008); the strong wave of privatisation of several public corporations occurring through public offerings in order to promote the so-called 'popular capitalism' (Barradas *et al*., 2018); the retrenchment of welfare states, which has produced a decrease in the quantity and/or quality of public provision (e.g. housing, health, education, pensions, transportation) and, consequently, a rise in the demand for private provision through own housing, private health insurance, life insurance pensions and other similar financial assets (Finlayson, 2009; Lapavitsas, 2013); the presence of tax systems that are more favorable to income from capital (e.g. interest, dividends, rent and capital gains) vis-à-vis income from labour (e.g. wages) (Kus, 2012); the general absence

of taxes related to inheritances and large fortunes that have resulted in an accumulation of financial assets across different generations (Genschel *et al*., 2024); the development of financial technology (e.g. cashless payment systems, internet banking, mobile banking, blockchain, peer-to-peer lending, robo-advisors, regtech, insurtech, fast and automated trading platforms) that has improved the financial inclusion and a wider democratic access to financial services and financial assets (Vuković *et al*., 2024); the improvement in the levels of educational attainment and their beneficial impact on financial literacy and participation in financial markets (Lusardi, 2019); the lesser degree of risk aversion on the part of the baby-boomer generation vis-à-vis previous generations and the rise in the demand for riskier financial assets (Cynamon and Fazzari, 2008); the persistence of low interest rates and an increased appetite for riskier financial assets (Hein, 2012); the existence of asset price inflation (e.g. in stock prices) that have increased (decreased) the demand (supply) of financial assets (Hein, 2012); and the spread of irrational behaviour in the financial markets for short-term gains and speculative income (Lee and Siddique, 2021). All of these developments have, in combination, increased the notional or virtual wealth of workers, which, by serving as collateral, has relaxed their credit constraints and allowed them to leverage and to accumulate more and more financial assets over time (Hein, 2012; Westcott and Murray, 2017).

The financialisation of workers through the side of financial liabilities has promoted a general increasing trend of workers' indebtedness all over the world since the 1970s and 1980s to unprecedented and unsustainable levels, even reaching historical maximum levels, especially up to the Great Recession (Barradas and Tomás, 2023; Romão and Barradas, 2024). This trend has been fostered by the loosening of financial regulations and the progressive relaxation of lending constraints (Justiniano *et al*., 2019); the higher availability of credit supported by financial innovation (e.g. debt securitisation and the 'originate to distribute' strategies of financial institutions) that have eased the access of financial institutions to funding at lower costs (Hein, 2012; Barradas *et al*., 2018); technological progress (e.g. credit scoring models) that have improved the analysis of the credit risk of potential borrowers (Cynamon and Fazzari, 2008); the emergence of new financial instruments (e.g. home equity loans and credit cards) in the field of credit (Barradas, 2022a); the strong competition between financial institutions and the adoption of aggressive commercial policies in the credit segment (Stockhammer, 2009); the persistence of low interest rates and cheaper costs of borrowing (Hein, 2012); the

availability of new and irresistible goods and services (e.g. mobile phones and other technological devices) for the majority of workers (Barba and Pivetti, 2009); the consumerist influence of advertising, marketing and the mass media (Cynamon and Fazzari, 2008); the aforementioned lesser risk aversion of the baby-boomer generation vis-à-vis previous generations with regard to their financial decisions and a more relaxed attitude about incurring debt (Cynamon and Fazzari, 2008); the drop in the labour income share and the stagnant (or falling) wages, which has fostered the demand for credit in order to prevent a loss in the standard of living (Barba and Pivetti, 2008); the increase in top management's compensation vis-à-vis the working class and blue-collar workers and the widening of inequalities in personal income, which has also stimulated the demand for credit in order to aspire to the lifestyle of the richest (Frank *et al*., 2014); and the aforementioned retrenchment of welfare states, which has also boosted the demand for credit in order to satisfy basic needs that were previously fully satisfied by the state and/or to cover some risks that previously were fully covered by the state (Finlayson, 2009; Lapavitsas, 2013). All of these developments have, in combination, resulted in a deterioration of creditworthiness standards and a lessening in collateral requirements by contributing to a democratisation of credit even for low income, low wealth and middle-class workers (Cynamon and Fazzari, 2008; Hein, 2012).

The literature has particularly focused on the causes around the financialisation of workers, but few attempts have been made to discuss its consequences, especially with regard to industrial relations and the observable deunionisation since the 1970s and 1980s all over the world (Gouzoulis, 2024). Our investigation finds that workers have been decreasing their degree of unionisation because they are strongly financialised through the side of both financial assets and financial liabilities.

With regard to the side of financial assets, we identify at least six potential mechanisms through which this financialisation could contribute to deunionisation. First, workers with financial assets are in a more financially solid position, which reduces their incentives to obtain collective support and to be unionised (Bryson and Freeman, 2012). Second, workers with financial assets tends to be (at least unconsciously) stronger defenders of capital, which leads them to be less unionised given the harmful impact of that on the capital income share and on the prices of financial assets and, consequently, on their financial wealth (Tippet *et al*., 2024). As pointed out by Smith *et al*. (2019), there is no longer a distinction between workers and capitalists, in a context in which the

majority of workers are also capitalists by receiving simultaneously income from working (labour) and income from ownership (capital). Third, workers with financial assets, especially those with higher wages, could perceive unionisation as less useful, by considering that trade unions are more focused on protecting the interests of low income, low wealth and middle-class workers instead of their own interests (Cronert and Forsén, 2023; Kristal, 2023). Fourth, workers with financial assets, especially those with higher wages that could also assume management positions, receive more attractive remuneration schemes and a lot of fringe benefits (e.g. health insurance, pension plans, credit cards, car, flexible schedules, childcare), which could decrease the appeal of unionisation (Kristal, 2023). Fifth, workers with financial assets feel (psychologically) like owners (employers), which improves their commitment, motivation, expectations, reciprocity and productivity and minimizes absenteeism, turnover intentions and conflicts in their workplaces (Carberry *et al*., 2024), which makes their unionisation redundant. These workers have more positive views of their employers and believe that they have more influence on the corporation, its strategy and performance (Carberry *et al*., 2024). Sixth, having workers with financial assets helps to solve agency problems because they have their interests more aligned with the financial interests of their employers (Pendleton and Robinson, 2010; Bryson and Freeman, 2018; Cappelli *et al*., 2019), betters their relations with them (Green and Hewood, 2010), and, therefore, lessens tensions and conflicts with them (Fakhfakh *et al*., 2019), which potentially results in a better work environment and improved job security (Olsen, 2024), which motivates them to be less unionised.

On the side of financial liabilities, we identify at least four potential mechanisms through which the financialisation of workers could also contribute to their deunionisation. First, workers with financial liabilities are in a more financially fragile position, which motivates a more self-disciplined attitude and risk-averse behaviour in their workplaces, due to the fear of losing their jobs (and income) and the risks of default, which prevents them from being unionised because of the fears of being permanently replaced and/or dismissed in the medium and long term (Langley, 2007; Stockhammer, 2009; Lazzarato, 2012; Wood, 2017; Sweet, 2018; Gouzoulis, 2024). This happens due to the strong deregulation and flexibilisation of labour relations since the 1970s and 1980s all over the world, which has weakened the positive relation between the power of trade unions and protection from dismissal (Emmenegger, 2014; Gouzoulis, 2024) and the

tendency of employers to replace and fire unionised workers (Stelzner, 2017; Gourevitch, 2018; Gouzoulis, 2024). Second, workers with financial liabilities are more reluctant to be unionised in order to preserve their jobs and a steady flow of income until they repay their existing debts and, thus, avoid a potential default (Gouzoulis, 2023, 2024). Note that unionisation implies the payment of monthly union dues, which naturally contributes to a loss of income in the short term that ultimately could compromise their financial obligations, in a context in which the decision to join a trade union and their benefits only occurred in the medium and long term (Palley and LaJeuneesse, 2007). This happens because nonunionised workers could be 'free-riders' by receiving the benefits obtained by unionised workers, particularly in cases with wider bargaining coverage (Olson, 1965; Freeman and Medoff, 1984; Bryson, 2008). Third, workers with financial liabilities prefer to be nonunionised in order to be protected from potential social stigma that would arise in case of default by reflecting a certain incompetence to successfully manage their personal finances (Wood, 2017). This could be more relevant in countries that view more negatively personal insolvency, in countries with a more liberal/pro creditor bankruptcy law, in countries with lesser credit regulations by the state and/or in countries in which there is no credit directly provided by the state-owned banks to less advantaged workers (Wood, 2017; Gouzoulis, 2021, 2024). Fourth, workers with financial liabilities prioritize their financial obligations and, thus, evidence less solidarity and a behaviour more oriented to individualism, self-interest, rationalism, and market values, which instigates them to be nonunionised due to their lesser sense of group identification and collective action (Kelly and Kelly, 1994; Van der Zwan, 2014).

Empirical evidence for the relation between the financialisation of workers and their deunionisation is quite limited. Gouzoulis (2024) is the only exception, in performing a time series econometric analysis focused on Japan, Sweden and South Korea over the period from 1965 to 2018. The author concludes that the financialisation of workers through the side of financial liabilities exerts a negative effect on the degree of unionisation in these three countries, more so in Japan and South Korea due to their lower levels of protection for indebted workers and their higher levels of social stigma toward insolvent, defaulting workers, which implies an even more self-disciplined attitude and a greater risk-averse behaviour by workers, namely with regard to their participation in trade unions. To the best of our knowledge, there is no empirical work

that aims to examine the influence of the financialisation of workers through the side of financial assets on their deunionisation.

This paper aims to contribute to the literature by providing further and new empirical evidence on the relation between the financialisation of workers through the side of both financial assets and financial liabilities and their unionisation and by employing a time series econometric analysis centred on Portugal over the period from 1980 to 2023.

3. MODEL SPECIFICATION AND HYPOTHESES

Our model is based on an aggregate equation to address the determinants of unionisation in Portugal, which takes the following specification:

$$DU_t = \beta_0 + \beta_1 FW_t^{FA} + \beta_2 FW_t^{FL} + \beta_3 X_t + \varepsilon_t \quad \textbf{(1)}$$

where t is the time period (years), DU is the degree of unionisation, FW^{FA} is the financialisation of workers through the side of financial assets, FW^{FL} is their financialisation through the side of financial liabilities, X is a set of control variables and ε is an independent and identically distributed (white noise) disturbance error with null average and constant variance (homoscedastic).

Our control variables encompass those that have been theoretically and empirically identified in the literature as relevant determinants of the degree of unionisation registered in the last five decades all over the world, namely the shareholder value primacy and the financialisation of corporations (Peters, 2011; Kollmeyer and Peters, 2019; Dupuis *et al*., 2020; Gouzoulis, 2024; Gouzoulis *et al*., 2024c); the disinflationary process (Bain and Elsheikh, 1976; Western, 1997; Checchi and Visser, 2005); deindustrialisation and accompanying reduction in industrial workforce (Blaschke, 2000; Lee, 2005; Schnabel, 2013; Jensen, 2020); the retrenchment of welfare states and the decrease in public servants and public workforce (Visser, 2002; Checchi and Visser, 2005); and globalisation and the increase of openness to trade (Bluestone and Harrison, 1982; Harrison and Bluestone, 1988; Sasson, 1996; Western, 1997; Brady and

Wallace, 2000; Slaughter, 2007; Boulhol *et al*., 2011). Hence, our control variables include the financialisation of corporations, the inflation rate, industrial workforce, public workforce and the degree of globalisation, which allows us to avoid the problem of omitted relevant variables and to get more consistent and efficient estimates (Brooks, 2009).

Consequently, our model and our aggregate equation to address the determinants of unionisation in Portugal take the following specification:

$$DU_t = \beta_0 + \beta_1 FW_t^{FA} + \beta_2 FW_t^{FL} + \beta_3 FC_t + \beta_4 IR_t + \beta_5 IW_t + \beta_6 PW_t + \beta_7 DG_t + \varepsilon_t \quad \textbf{(2)}$$

where t is the time period (years), DU is the degree of unionisation, FW^{FA} is the financialisation of workers through the side of financial assets, FW^{FL} is the financialisation of workers through the side of financial liabilities, FC is the financialisation of corporations, IR is the inflation rate, IW is industrial workforce, PW is public workforce, DG is the degree of globalisation and ε is an independent and identically distributed (white noise) disturbance error with null average and constant variance (homoscedastic).

Our aggregate equation to address the determinants of unionisation follows a macroeconomic approach that implicitly makes the assumption of the existence of a representative worker in Portugal whose behaviour in terms of unionisation does not change across time and space. This macroeconomic approach imposes two different limitations on our empirical work (Correia and Barradas, 2021). First, we are unable to address whether the determinants of unionisation in Portugal depend on the worker's own characteristics (e.g. age, sex, qualifications, occupation, type of labour contract, household size and social stratum). Second, we are unable to address whether the determinants of unionisation in Portugal depend on the corporation, sector, industry and/or region of the worker's job. Nonetheless, this macroeconomic approach presents four different potentialities that more than counterbalance these two limitations (Correia and Barradas, 2021; Gouzoulis, 2023). First, we are able to address the determinants of unionisation in Portugal as a whole by transcending the idiosyncracies of each worker in each corporation, sector, industry or region. Indeed, if these determinants have a

statistically significant impact on unionisation in Portugal, we are unable to address whether that impact occurs only with some workers or in some corporations, sectors, industries and regions or whether it has a more generalised impact across all workers, corporations, sectors, industries and regions in Portugal. If these determinants do not have a statistically significant impact on unionisation in Portugal, we are unable to address whether there is an impact for some workers or in some corporations, sectors, industries and regions, which however is not substantial enough to impact all workers, corporations, sectors, industries and regions as a whole in Portugal. Second, we are able to address the determinants of unionisation in Portugal covering the longest period possible, which sets the stage for microeconomic approaches at the worker level, the corporate level, the sector level, the industry level and the regional level. Third, we are able to address the determinants of unionisation in Portugal by taking into account several factors that are also predicted to have microeconomic impacts. Fourth, we are able to address the determinants of unionisation by encompassing some long-term forces, structural adjustments and economic and social transformations that could not be addressed by microeconomic approaches, whether at the worker level, the corporate level, the sector level, the industry level and the regional level.

Our hypotheses assume that the financialisation of workers through both the side of financial assets and that of financial liabilities, the financialisation of corporations and the degree of globalisation should exert a negative influence on unionisation, while the inflation rate, industrial workforce and public workforce should exert a positive influence. Thus, the estimated coefficients should have the following signs:

$$\beta_1 < 0, \beta_2 < 0, \beta_3 < 0, \beta_4 > 0, \beta_5 > 0, \beta_6 > 0, \beta_7 < 0 \qquad \textbf{(3)}$$

As previously discussed, the financialisation of workers through both the side of financial assets and that of financial liabilities should negatively impact unionisation.

Unionisation should also be negatively affected by the financialisation of corporations, as workers prefer to be nonunionised or to deunionise in order to mitigate the risks of redundancy because financialised corporations tend to replace unionised workers, by avoiding paying union wage premiums, with low-cost nonunionised ones in

order to contain labour costs, have more profits, distribute high dividends, pay high interest and satisfy impatient shareholders and demanding creditors (Peters, 2011; Kollmeyer and Peters, 2019; Dupuis *et al*., 2020; Gouzoulis, 2024; Gouzoulis *et al*., 2024c).

The inflation rate should exert a positive influence on unionisation, primarily because a rising inflation rate encourages workers to unionise to demand higher wages in order to not lose their purchasing power (Bain and Elsheikh, 1976; Western, 1997; Checchi and Visser, 2005).

Unionisation should positively depend on industrial workforce and public workforce, particularly due to the fact that workers in the manufacturing industries and workers in the public sector tend to exhibit a stronger militant stance, being more unionised than workers in the nonmanufacturing industries and workers in the private sector, who normally are nonunionised, have more atypical labour contracts and/or are self-employed (Blaschke, 2000; Visser, 2002; Lee, 2005; Checchi and Visser, 2005; Schnabel, 2013; Jensen, 2020; Gouzoulis, 2023).

Finally, the degree of globalisation should exert a negative effect on unionisation due to threat effects exerted by multinational, transnational and 'nomadic' corporations related to offshoring and/or relocating their production to countries with weaker trade unions and lower labour costs, which dissuades workers from being unionised in order to sustain their jobs and income (Bluestone and Harrison, 1982; Harrison and Bluestone, 1988; Sasson, 1996; Western, 1997; Brady and Wallace, 2000; Zamagni, 2003; Slaughter, 2007; Boulhol *et al*., 2011).

4. DATA

We collected data for Portugal on a yearly basis from 1980 to 2023, comprising a total sample of 44 observations. This corresponds to the period and the periodicity for which all data were available. Effectively, the proxies to measure the financialisation of workers through the side of both financial assets and financial liabilities were only available from 1980 onwards and the majority of the proxies to measure all the variables were only available on a yearly basis. All data were collected in November 2024.

Our sample was quite suitable to produce our estimates, for three different reasons. First, deunionisation is a long-term stylised fact in Portugal, which is better captured through the use of annual data (Waddington *et al*., 2023). Second, we used a relatively large sample that covers more than four decades, which allows assessing the long-term forces, structural adjustments and economic and social transformations behind the deunionisation in Portugal registered since the beginning of the 1980s. Third, our sample covers the period when the financialisation of workers gained more preponderance in Portugal, which has occurred particularly with the European integration process in 1986 and the obligation to liberalise, deregulate and privatise the financial institutions since that time (Barradas, 2020).

We estimated two different models. The first one is a baseline model, according to which we addressed the effect of financialisation of workers on unionisation by taking into account separately the role exerted by workers' financial assets and workers' financial liabilities. The second one is an alternative model, according to which we addressed the general effect of financialisation of workers on unionisation by considering the role exerted by workers' net financial assets (i.e. the difference between workers' financial assets and workers' financial liabilities). This allowed us to capture the interaction between the effect of both workers' financial assets and workers' financial liabilities in only one consolidated variable and to address the robustness of our estimates according to the model chosen to assess the relation between the financialisation of workers and their unionisation.

We now describe the proxies, units and sources for all the variables. In Portugal, the degree of unionisation is given by the trade union density (i.e. wage and salary earners that are trade union members as a percentage of the total number of wage and salary earners), which was collected from the OECD/AIAS ICTWSS database and from Barradas (2024b).

We assessed the financialisation of workers in Portugal by taking into account the total financial assets of households as a percentage of the gross domestic product and the total financial liabilities of households as a percentage of the gross domestic product, which is available in the national financial accounts compiled by the Bank of Portugal.

The financialisation of corporations in Portugal is the amount of financial payments (i.e. the sum of the interest and the distributed income of corporations in which

dividends are included) paid by non-financial corporations as a percentage of the gross value added of the non-financial corporations. Both variables were collected from national sector accounts, available from the *Instituto Nacional de Estatística* (INE).

The annual percentage growth rate of the gross domestic product deflator was used to proxy the inflation rate in Portugal. This variable was collected directly from the World Bank database.

We used the number of workers employed in the secondary sector (i.e. workers in industry, construction, energy and water) as a percentage of the total number of workers employed in Portugal to measure the industrial workforce, obtained from the PORDATA database.

Public workforce in Portugal was measured by the number of workers employed in the general government (i.e. workers in the central government, state governments, local and regional governments and social security funds) as a percentage of the total number of workers employed in Portugal[2], collected from the PORDATA database.

Trade (i.e. the sum of exports and imports of goods and services) as a percentage of the gross domestic product was employed to assess the degree of globalisation in Portugal. This variable was collected directly from the World Bank database.

Table 1 presents the proxies, units and sources for all the variables, Figure 1 presents the plots for all the variables, Table 2 presents the descriptive statistics for each variable, Table 3 presents the correlations between all the variables, Table 4 presents the results of the conventional augmented Dickey and Fuller (ADF) (1979) unit root test for each variable, and Table 5 presents the results of the Engle and Granger (1987) cointegration test for the baseline model and the alternative model.

The correlations between some of our variables are higher than the traditional ceiling of 0.8 in absolute terms, which implies that we cannot completely rule out the existence of severe multicollinearity (Studenmund, 2016). We also examined the variance inflation factors, according to which the hypothesis of multicollinearity between all the

[2] Note that there is no available information pertaining to the number of workers employed in the general government for Portugal for the years from 1980 to 1982, from 1984 to 1985, 1987, from 1989 to 1990, from 1992 to 1995, from 1997 to 1998, and from 2006 to 2010. As such, this information was obtained through our own calculations by using the technique of linear interpolation.

variables is strongly rejected because all the variance inflation factors are lower than the conventional ceiling of 20 (Greene, 2017)[3].

Note that we observe a strong decline in the unionisation in Portugal since the beginning of the 1980s, which has occurred simultaneously with a general increasing trend of financialisation of workers through the side of both financial assets and financial liabilities (Figure 1). This seems to confirm our argument that the deunionisation in Portugal during that time cannot be dissociated from the financialisation of workers. The high negative correlations between the financialisation of workers and their unionisation seems to support such claims (Table 3).

Table 1 – ***Proxies, units, and sources for all the variables***

Variable	Proxy and Units	Source
Degree of Unionisation	Unionised workers (% of total)	OECD/AIAS ICTWSS
Workers' Financial Assets	Total financial assets of households (% of GDP)	Bank of Portugal
Workers' Financial Liabilities	Total financial liabilities of households (% of GDP)	Bank of Portugal
Workers' Net Financial Assets	Net financial assets of households (% of GDP)	Bank of Portugal
Financialisation of Corporations	Financial payments of non-financial corporations (% of gross value added)	INE
Inflation Rate	Inflation, GDP deflator (annual %)	World Bank
Industrial Workforce	Workers employed in the secondary sector (% of total)	PORDATA
Public Workforce	Workers employed in the public sector (% of total)	PORDATA

[3] Results of the variance inflation factors are available upon request.

Degree of Globalisation	Exports and imports of goods and services (% of GDP)	World Bank

Figure 1 – Plots for all the variables

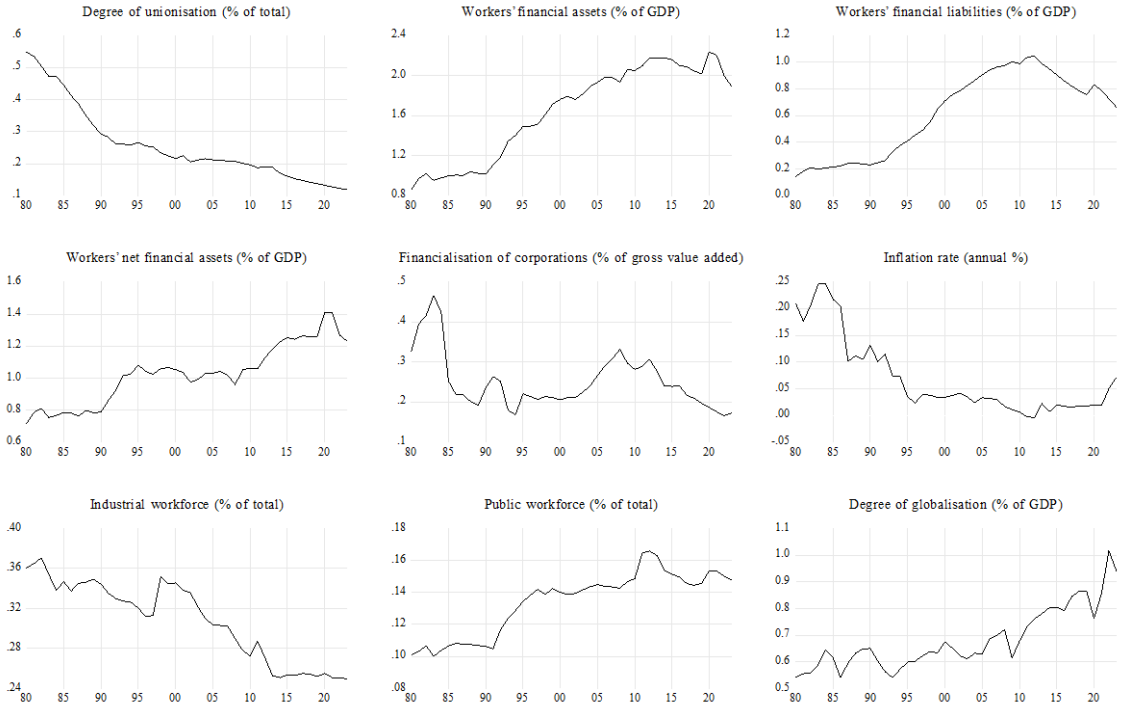

Table 2 – ***The descriptive statistics for each variable***

Variable	Mean	Median	Maximum	Minimum	Standard Deviation	Skewness	Kurtosis
Degree of Unionisation	0.257	0.216	0.548	0.119	0.117	1.129	3.286
Workers' Financial Assets	1.638	1.778	2.238	0.861	0.463	-0.373	1.566

Workers' Financial Liabilities	0.614	0.719	1.047	0.146	0.310	-0.193	1.445
Workers' Net Financial Assets	1.024	1.032	1.410	0.715	0.186	0.120	2.220
Financialisation of Corporations	0.252	0.230	0.465	0.166	0.070	1.351	4.397
Inflation Rate	0.070	0.034	0.247	-0.004	0.073	1.262	3.304
Industrial Workforce	0.308	0.317	0.371	0.250	0.040	-0.275	1.614
Public Workforce	0.134	0.142	0.166	0.100	0.020	-0.457	1.865
Degree of Globalisation	0.682	0.641	1.016	0.540	0.114	1.008	3.366

*Table 3 – **The correlations between all the variables***

Variable	**DU**	**FW^{FA}**	**FW^{FL}**	**FW^{NFA}**	**FC**	**IR**	**IW**	**PW**	**DG**
DU	1.000								
FW^{FA}	-0.886***	1.000							
FW^{FL}	-0.802***	0.962***	1.000						
FW^{NFA}	-0.871***	0.889***	0.730***	1.000					
FC	0.606***	-0.304**	-0.160	-0.490***	1.000				
IR	0.905***	-0.872***	-0.839***	-0.774***	0.523***	1.000			
IW	0.796***	-0.851***	-0.750***	-0.872***	0.308**	0.670***	1.000		

PW	-0.873***	0.967***	0.929***	0.862***	-0.347**	-0.891***	-0.799***	1.000	
DG	-0.697***	0.698***	0.577***	0.779***	-0.326**	-0.495**	-0.847***	0.641***	1.000

Note: *** indicates statistical significance at the 1% level, ** indicates statistical significance at the 5% level, and * indicates statistical significance at the 10% level

Table 4 – The *p-values* from the ADF unit root test for each variable

Variable	**Level**			**First Difference**		
	Intercept	***Trend and Intercept***	***None***	***Intercept***	***Trend and Intercept***	***None***
Degree of Unionisation	0.058	0.182*	0.009	0.139	0.177	0.041*
Workers' Financial Assets	0.374*	1.000	0.895	0.000	0.140	0.000*
Workers' Financial Liabilities	0.595*	0.998	0.616	0.077	0.093	0.007*
Workers' Net Financial Assets	0.605*	0.063	0.950	0.000*	0.001	0.000
Financialisation of Corporations	0.230	0.606*	0.123	0.000	0.001	0.000*
Inflation Rate	0.013	0.882*	0.001	0.013	0.000	0.001*
Industrial Workforce	0.844	0.389*	0.068	0.000*	0.000	0.000
Public Workforce	0.504*	0.748	0.892	0.000	0.031	0.000*
Degree of Globalisation	0.977	0.242	0.987*	0.000	0.003*	0.000

Note: The lag lengths were selected automatically based on the AIC information criteria and * indicates the exogenous variables included in the test according to the AIC information criteria

Table 5 – ***The Engle and Granger (1987) cointegration test for both the baseline and alternative models***

Model	*z-Statistic*	*P*-value
Baseline	***-96.199***	***0.000***
Alternative	***-92.648***	***0.000***

Note: The lag lengths were selected automatically based on the AIC information criteria

For all the variables, we cannot reject the null hypothesis that they have a unit root in levels but we strongly reject that they have a unit root in the first differences at the conventional significance levels (Table 4). Our variables are, therefore, integrated of order one (i.e. they are non-stationary in levels but they are stationary in their first differences).

We can also confirm that our variables are strongly cointegrated in both the baseline model and the alternative model. For both models, we rejected the null hypothesis of no cointegration among all the variables at the traditional significance levels (Table 5).

5. ECONOMETRIC METHODOLOGY

Our econometric methodology involved the use of the FMOLS estimator, the CCR estimator and the DOLS estimator, because these estimators were designed for cases like ours that encompass variables that are integrated of order one and, simultaneously, cointegrated. The use of these three estimators allowed us to estimate single cointegration equations in order to address the (long-term) determinants of unionisation in Portugal and to assess the robustness of these estimates according to the estimator employed[4].

The FMOLS estimator was proposed by Phillips and Hansen (1990). It employs a semi-parametric correction to eliminate the problems caused by the long run correlation

[4] Our estimates were produced in the EViews software and in the Stata software by relying on the 'cointreg' routine developed by Wang and Wu (2012).

between the cointegrating equation and stochastic regressors innovations. The FMOLS estimator is asymptotically unbiased and fully efficient.

The CCR estimator was created by Park (1992) and is closely related to FMOLS. The CCR estimator asymptotically eliminate the endogeneity caused by the long run correlation of the cointegrating equation errors and the stochastic regressors innovations and, simultaneously, corrects for the asymptotic bias resulting from the contemporaneous correlation between the regression and stochastic regressor errors. Estimates produced by the CCR estimator are also strongly unbiased and fully efficient.

The DOLS estimator was developed by Saikkonen (1992) and Stock and Watson (1993), who construct an asymptotically consistent and efficient estimator that also eliminates the feedback in a cointegrated system. The DOLS estimator involves augmenting the cointegration regression with lags and leads, which implies that the cointegration equation error is orthogonal to the entire history of the stochastic regressor innovations.

We also employed the recent method developed by Ditzen *et al*. (2021) in order to detect the existence of structural breaks in our sample[5]. For the years identified as structural breaks, we introduced in our models a dummy variable ($Dummy_{Breaks}$) as a deterministic regressor in order to ensure the stability of our estimates over time.

Finally, we also addressed the economic effects of our long-term estimates, which allows to better identify the role of each statistically significant variable in explaining the deunionisation in Portugal since the beginning of the 1980s (McCloskey and Ziliak, 1996; Ziliak and McCloskey, 2004).

6. EMPIRICAL RESULTS AND DISCUSSION

The empirical results are presented and discussed throughout this section. Table 6 presents the estimates of the degree of unionisation in Portugal for the baseline model and Table 7 the same estimates for the alternative model. Both models describe considerably well the evolution of unionisation in Portugal since the 1980s, as suggested by the very high levels for *R*-squared and adjusted *R*-squared. The empirical results are also quite

[5] This method was carried out in the Stata software by relying on the 'xtbreak' routine developed by Ditzen *et al*. (2021).

robust because our estimates did not change dramatically in terms of statistical significance and signs of coefficients across the three different estimators and/or across the two different models. All variables are statistically significant at the traditional significance levels, and six conclusions can be drawn.

Table 6 – ***Estimates of unionisation in Portugal for the baseline model***

Variable	FMOLS	CCR	DOLS
β_0	0.282***	-0.599***	-0.510**
	(0.048)	(0.038)	(0.108)
	[5.835]	[-15.914]	[-4.711]
Workers' Financial Assets	-0.121***	-0.031**	-0.170**
	(0.020)	(0.014)	(0.040)
	[-6.121]	[-2.274]	[-4.262]
Workers' Financial Liabilities	-0.015	-0.115***	-0.141**
	(0.020)	(0.012)	(0.029)
	[-0.784]	[-9.623]	[-4.919]
Financialisation of Corporations	0.536***	0.597***	0.886***
	(0.028)	(0.019)	(0.059)
	[19.287]	[30.786]	[14.837]
Inflation Rate	0.312***	0.145***	0.490***
	(0.050)	(0.037)	(0.076)
	[6.192]	[3.922]	[6.465]
Industrial Workforce	0.265***	2.076***	0.573*
	(0.082)	(0.078)	(0.189)
	[3.246]	[26.678]	[3.038]

Public Workforce	0.447*	1.489***	3.589***
	(0.258)	(0.159)	(0.508)
	[1.729]	[9.379]	[7.070]
Degree of Globalisation	-0.173***	-0.021	0.313**
	(0.022)	(0.014)	(0.066)
	[-7.959]	[-1.449]	[4.750]
$Dummy_{Breaks}$	-0.003	-0.017***	-0.009**
	(0.004)	(0.003)	(0.002)
	[-0.685]	[-5.279]	[-4.485]
R-squared	0.923	0.788	0.999
Adjusted R-squared	0.905	0.738	0.998

Note: Standard errors are reported in (), t-statistics in [], *** indicates statistical significance at the 1% level, ** indicates statistical significance at the 5% level, and * indicates statistical significance at the 10% level. $Dummy_{Breaks}$ takes the value of 1 for the years 1986, 1997, 2006, and 2014, and 0 for all other years

Table 7 – ***Estimates of unionisation in Portugal for the alternative model***

Variable	FMOLS	CCR	DOLS
β_0	-0.078*	0.337***	0.130
	(0.043)	(0.013)	(0.271)
	[-1.808]	[25.277]	[0.481]
Workers' Net Financial Assets	-0.055***	-0.091***	0.096
	(0.017)	(0.005)	(0.077)
	[-3.311]	[-18.107]	[1.251]

Financialisation of Corporations	0.301***	0.362***	0.397**
	(0.022)	(0.009)	(0.162)
	[13.701]	[39.114]	[2.454]
Inflation Rate	0.592***	0.495***	0.908**
	(0.041)	(0.016)	(0.279)
	[14.337]	[30.284]	[3.257]
Industrial Workforce	1.207***	0.448***	0.378
	(0.072)	(0.023)	(0.467)
	[16.741]	[19.580]	[0.808]
Public Workforce	-0.623***	-1.452***	-0.320
	(0.178)	(0.053)	(1.053)
	[-3.500]	[-27.269]	[-0.304]
Degree of Globalisation	-0.019	-0.085***	-0.326**
	(0.019)	(0.006)	(0.139)
	[-0.972]	[-15.108]	[-2.349]
$Dummy_{Breaks}$	-0.003	0.005***	-0.003
	(0.004)	(0.002)	(0.012)
	[-0.682]	[2.915]	[-0.220]
R-squared	0.900	0.920	0.997
Adjusted R-squared	0.881	0.903	0.987

Note: Standard errors are reported in (), t-statistics in [], *** indicates statistical significance at the 1% level, ** indicates statistical significance at the 5% level, and * indicates statistical significance at the 10% level. $Dummy_{Breaks}$ takes the value of 1 for the years 1986, 1997, 2006, and 2014, and 0 for all other years

First, we confirm a negative relationship between the financialisation of workers through the side of both financial assets and financial liabilities and the degree of unionisation in Portugal. This supports our argument that workers' financial assets dissuade them from being unionised due to their more financially solid position, pro-capital predisposition, perceived disconnect from union priorities, access to attractive remuneration benefits, a (psychological) sense of being owners (employers) and an alignment with capital (employers') interests (Pendleton and Robinson, 2010; Bryson and Freeman, 2012, 2018; Cappelli *et al*., 2019; Fakhfakh *et al*., 2019; Smith *et al*., 2019; Cronert and Forsén, 2023; Kristal, 2023; Carberry *et al*., 2024). This also sustains our argument that workers' financial liabilities dissuade them from being unionised due to their more financially fragile position fears of job and income losses and concerns about default, reluctance to incur the immediate costs of monthly union dues, worries about the social stigma linked to potential default and a tendency to prioritise individual interests over collective action (Kelly and Kelly, 1994; Langley, 2007; Palley and LaJeuneesse, 2007; Stockhammer, 2009; Lazzarato, 2012; Van der Zwan, 2014; Wood, 2017; Sweet, 2018; Gouzoulis, 2023, 2024). On average, the negative effect related to workers' financial assets is greater than the negative effect linked to workers' financial assets, which is probably because financial assets are more widespread among workers than financial liabilities (Figure 1 and Table 2). Effectively, workers' net financial assets also exert a negative impact on unionisation in Portugal. This seems to suggest that the negative impact of the financialisation of workers on unionisation in Portugal is especially due to the role played by workers' financial assets, which represents a directly perceived benefit (e.g. financial security and independence), in a context in which the role played by workers' financial liabilities tends to represent an indirect perceived danger (e.g. financial insecurity and fears of job and income losses). As workers' net financial assets have been positive and growing in Portugal since the 1980s (Figure 1 and Table 2), financial risks and fears of defaulting related to workers' financial liabilities have been completely neutralized by inducing them to be not unionised due to their more financially solid position.

Second, we also report strong evidence that the financialisation of corporations exerts a positive impact on unionisation in Portugal[6]. This counterintuitive result does not

[6] The positive impact of the financialisation of corporations on unionisation in Portugal did not change if we used the net financial payments (i.e. the difference between the financial payments paid by non-financial corporations and the financial receipts received by non-financial corporations) as a percentage of the gross value added of the non-financial corporations instead of the financial payments

corroborate the theoretical beliefs that the acceleration of the financialisation of corporations persuades workers to deunionise in order to moderate the risks of redundancy because financialised corporations tend to replace unionised workers, by avoiding paying union wage premiums, with low-cost nonunionised ones in order to contain labour costs, have more profits, distribute high dividends, pay high interest and satisfy impatient shareholders and demanding creditors (Peters, 2011; Kollmeyer and Peters, 2019; Dupuis *et al*., 2020; Gouzoulis, 2024; Gouzoulis *et al*., 2024c). Two potential mechanisms could explain this positive relationship. On the one hand, the acceleration of the financialisation of corporations could incite workers to be unionised in order to obtain higher wages and better labour conditions as a reaction to the primacy of shareholder value and the reduction of labour costs along with high levels of profits, high distributed dividends and high interest payments (Milkman, 2013). On the other hand, the acceleration of the financialisation of corporations could instigate trade unions to increase their efforts and to implement several strategies and campaigns to contain the deunionisation of workers and to attract more workers to be unionised (Simms *et al*., 2013; Grady and Simms, 2019).

Third, the inflation rate has also a positive influence on unionisation in Portugal[7]. This result confirms that high inflationary pressures incite workers to obtain collective support and to be unionised in order to demand higher wages to avoid loss of their purchasing power (Bain and Elsheikh, 1976; Western, 1997; Checchi and Visser, 2005)

Fourth, we also find that industrial workforce and public workforce are positive determinants of unionisation in Portugal. This result corroborates the theoretical claims and the empirical evidence that workers in the manufacturing industries and workers in the public sector tend to exhibit a stronger militant stance, being more unionised than workers in the nonmanufacturing industries and workers in the private sector, who normally are nonunionised, have more atypical labour contracts and/or are self-employed (Blaschke, 2000; Visser, 2002; Lee, 2005; Checchi and Visser, 2005; Schnabel, 2013; Jensen, 2020; Gouzoulis, 2023).

paid by non-financial corporations as a percentage of the gross value added of non-financial corporations. Results are available upon request.

[7] The positive influence of the inflation rate on unionisation in Portugal did not change if we used the annual percentage growth rate of the consumer price index instead of the annual percentage growth rate of the gross domestic production deflator. Results are available upon request.

Fifth, the degree of globalisation tends to affect negatively the unionisation in Portugal[8]. This is also an expected result by reiterating that an intensification of the degree of globalisation discourages workers from being unionised in order to sustain their jobs and income in the wake of threat effects exerted by multinational, transnational and 'nomadic' corporations related to offshoring and/or relocating their production to countries with weaker trade unions and lower labour costs (Bluestone and Harrison, 1982; Harrison and Bluestone, 1988; Sasson, 1996; Western, 1997; Brady and Wallace, 2000; Zamagni, 2003; Slaughter, 2007; Boulhol *et al*., 2011).

Sixth, our dummy variable also has a negative effect on unionisation in Portugal. This could indicate that there were other determinants not included in the baseline model and in the alternative model that may have contributed to a reduction in the unionisation in Portugal in 1986, 1997, 2006 and 2014, respectively. As recognised by Gouzoulis (2024), the negative relationship between the dummy variable and unionisation in Portugal could be associated to the existence of a strong path-dependency in relation to workers' attitudes towards their unionisation. The strong decline in the unionisation in Portugal since the beginning of the 1980s (Figure 1) reflects a weakening of the sense of group identification and individual union participation that by itself tends to dispel more union members, namely because there is a transmission effect to relatives, children and new generations of workers (Kelly and Kelly, 1994).

Table 8 contains the economic effects of unionisation in Portugal for the baseline model and the alternative model. The most important finding pertains to the financialisation of workers, which has definitely represented one of the main drivers behind the deunionisation in Portugal since the 1980s.

Table 8 – ***Economic effects of unionisation in Portugal***

Model	Variable	Long-term Coefficient	Actual Cumulative Change	Economic Effect

[8] The degree of globalisation remained its negative effect on unionisation in Portugal if we used imports as a percentage of the gross domestic product (i.e. the import penetration rate) or the net inflows related to foreign direct investment as a percentage of the gross domestic product instead of the trade as a percentage of the gross domestic product. Results are available upon request.

Baseline	**Workers' Financial Assets**	-0.107	0.028	-0.003
	Workers' Financial Liabilities	-0.128	0.082	-0.010
	Financialisation of Corporations	0.673	-0.011	-0.007
	Inflation Rate	0.316	0.070	0.022
	Industrial Workforce	0.971	-0.007	-0.007
	Public Workforce	1.842	0.011	0.020
	Degree of Globalisation	0.070	0.017	0.001
Alternative	**Workers' Net Financial Assets**	-0.073	0.017	-0.001
	Financialisation of Corporations	0.353	-0.011	-0.004
	Inflation Rate	0.665	0.070	0.047
	Industrial Workforce	0.828	-0.007	-0.006
	Public Workforce	-1.038	0.011	-0.011
	Degree of Globalisation	-0.206	0.017	-0.004

Note: The long-term coefficient corresponds to the arithmetic average of the statistically significant estimated coefficients produced by FMOLS, CCR, and DOLS. The actual cumulative change corresponds to the average of the annual growth rates of the corresponding variable from 1980 to 2023. The economic effect is calculated as the multiplication of the long-term coefficient by the actual cumulative change

Regarding the baseline model, we are able to report that the increase of workers' financial liabilities, the decline in industrial workforce, the deceleration of the financialisation of corporations and the surge of workers' financial assets were the main causes behind the decline of unionisation in Portugal since the 1980s. Unionisation in Portugal during that time would have effectively been higher by about 1.0%, 0.7%, 0.7% and 0.3% on average per year if there had not been a rise of workers' financial liabilities, a decline in industrial workforce, a deceleration of the financialisation of corporations and a surge of workers' financial assets, respectively. During that time, a positive inflation, the expansion of public workforce and the intensification of the degree of globalisation were not enough to support higher degrees of unionisation in Portugal. Unionisation in Portugal during that time would have been lower by around 2.2%, 2.0% and 0.1% on average per year if there had not been a positive inflation rate, an expansion of public workforce and an intensification of the degree of globalisation, respectively.

With regard to the alternative model, we confirm that the expansion of public workforce, the decline in industrial workforce, the deceleration of the financialisation of corporations, the intensification of the degree of globalisation and the increase of workers' net financial assets represented the main reasons behind the decline of unionisation in Portugal since the 1980s, which accounted for about 1.1%, 0.6%, 0.4%, 0.4% and 0.1%, respectively. During that time, a positive inflation rate was not enough to sustain higher unionisation in Portugal. Unionisation in Portugal during that time would have been lower by around 4.7% on average per year if there had not been a positive inflation rate.

Summing up, we conclude that the financialisation of workers exerts a negative effect on the degree of unionisation in Portugal, especially through financial assets due to their being more widespread among workers in comparison to financial liabilities. The financialisation of workers has indeed been one of the main factors behind the deunionisation in Portugal since the 1980s.

7. CONCLUSION

This paper aimed to address the relation between the financialisation of workers through the side of both financial assets and financial liabilities and their unionisation by performing a time series econometric analysis centred on Portugal over the period from 1980 to 2023.

During that time, we observed a general increasing trend of financialisation of workers visible in the strong growth of workers' financial assets and workers' financial liabilities, which occurred simultaneously with a strong decline in their unionisation. This seems to confirm our argument that the deunionisation in Portugal during that time cannot be dissociated from the financialisation of workers.

We used an aggregate equation to address the determinants of unionisation in Portugal by following a macroeconomic approach, according to which unionisation depends on the financialisation of workers through both the side of financial assets and of financial liabilities, and other control variables that have been theoretically and empirically identified in the literature as the main determinants behind the deunionisation registered in the last five decades all over the world (financialisation of corporations, inflation rate, industrial workforce, public workforce, and degree of globalisation). Our estimates were produced by employing the FMOLS estimator, the CCR estimator and the DOLS estimator, given that our variables are integrated of order one and, simultaneously, cointegrated.

We concluded that the financialisation of workers exerted a negative effect on unionisation in Portugal, especially through financial assets, due to their being more widespread among workers in comparison to financial liabilities. The financialisation of workers has indeed been one of the main factors behind the deunionisation in Portugal since the 1980s. We also concluded that the decline in the industrial workforce also exacerbated the decline in the unionisation in Portugal since the 1980s, in a context in which a positive inflation rate and the expansion of the public sector workforce were not enough to reverse the general decreasing trend of unionisation in Portugal since the 1980s.

Our results provide very important insights for workers, employers, trade unions, policy makers and political parties. Workers should be aware that their re-unionisation is important in order to achieve higher wages and better labour conditions, to recover some lost labour rights, and to contain the proliferation of labour exploitation practices.

Employers should incentivise organising labour through trade unions and/or workers' commissions in order to improve job satisfaction, to retain (or attract) talent and the best workers, and to avoid high levels of both absenteeism and turnover or even strong labour conflicts. Trade unions should increase their efforts around the implementation of several strategies and campaigns to demonstrate that unionisation has important collective impacts and, thus, manage to attract more members to the unions. Policy makers should adopt public policies that encourage or protect unionisation in order to maintain a relatively reasonable balance of power between labour (workers) and capital (employers). Political parties should expand their discourse to show the systemic importance of policies that strengthen labour, not only for workers in a more financially fragile position but also for workers in a more financially solid position.

Further research on unionisation in Portugal should follow a microeconomic approach at the worker level, the corporate level, the sector level, the industry level and the regional level. This will allow us to assess whether the financialisation of workers through the side of financial assets, through the side of financial liabilities, and the remaining determinants, have different effects on unionisation in Portugal according to the worker's own characteristics (e.g. age, sex, qualifications, occupation, type of labour contract, household size and social stratum) and/or according to the corporations, sectors, industries and/or regions of the worker's job.

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