Losing Unequally: Financialisation, Productivity, & the Finance Wage Premium in Greece

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Abstract

This paper provides an expanded conceptual framework for the analysis of the effects of financialisation on the finance wage premium. Current analyses focus on how financial deregulation has increased employee compensation in the financial sectors via rent-sharing. We argue that rising financial payments - the source of financial rents - also induce wage suppression in the rest of the economy. First, non-financial corporations pass increases in their financial payments to workers through wage reductions. Second, simultaneously, indebted workers lower their wage demands to avoid unemployment and personal default. Thus, understanding the growth of the finance wage premium requires scrutinising the impact of business and household indebtedness. To evaluate this argument, we use quarterly data from Eurostat for Greece over the period 1999Q1-2021Q3, and we show that increases in all components of private debt are strongly associated with positive changes in the finance wage premium.

Keywords: Finance Wage Premium; Wage Inequality; Financialisation, Productivity

1. Introduction

This paper provides an expanded framework for the analysis of the relationship between financialisation and the finance wage premium. We emphasise that financialisation not only boosts employee compensation in finance as recent work highlights, but it also suppresses salaries in the rest of the economy. In this respect, this study underlines the importance of taking into account how business and household debt are key drivers of the finance wage premium. Our empirical analysis confirms this argument for the case of Greece over the period of its rapid financialisation (1999Q1-2021Q3).

The decoupling between labour productivity and the average worker pay has become a well-established stylised fact of the last four decades. The main explanations regarding the driving forces behind this 'decoupling' and the accompanied steep fall in the labour share focus on the decline in workers' bargaining power as a result of labour market deregulation, declining public welfare provision, and the pressures of globalisation and financialisation during neoliberalism

(Kristal 2010, 2013; Bengtsson 2014; Stockhammer 2017; Gouzoulis 2021, 2022; Gouzoulis et al. 2023; Paternesi Meloni and Stirati 2023). Yet, despite the aggregate income share of wage earners has been declining, not all workers have experienced an equal decline in their earnings. A very well-documented stylised fact of contemporary labour markets is that employees in the financial sector are receiving higher salaries compared to their counterparts in the rest of the economy (Du Caju et al. 2010; Tomaskovic-Devey and Lin 2011; Godechot 2017; Philippon and Reshef 2012; Denk 2015; Lin and Neely 2020). While early work on the topic argued that this pay gap reflects productivity differentials, more recent research highlights the role of financialisation and how financial rent-sharing within finance and insurance firms increases their relative wages (Roberts and Bao 2021; Roberts and Kwon 2022; Böhm et al. 2022; Roberts et al. 2023). Accordingly their econometric analyses centre on how financial liberalisation *per se* affects the finance wage premium.

This paper builds on the aforementioned studies and argues that an important missing aspect is that financialisation also drives down wages in the rest of the economy. Two mechanisms contribute towards this outcome. First, non-financial firms (NFCs) face increasing financial payments which incentivise downsizing and wage reductions as a means of improving their balance sheets (Lazonick and O'Sullivan 2000; Thompson 2003, 2013; Cushen and Thompson 2016). Second, indebted households prioritise avoiding unemployment on the fear of defaulting on their debt, and become more conservative in their wage demands (Wood 2017; Gouzoulis 2021, 2022, 2023; Gouzoulis et al. 2023). Therefore, the conceptual framework presented in this paper claims that the rise of the finance wage premium is primarily driven by the dependency relationship between the financial and the non-financial sectors created through rising financial intermediation, rather than by financial liberalisation per se. Financial liberalisation allows the growth of financial intermediation and shifts the balance of power in favour of the creditors, but it is not the driving force itself. Regression analysis using the case study of Greece between 1999Q1 and 2021Q3 provides robust evidence in favour of our arguments that different components of private debt contributed to the growth of relative salaries in finance.

The rest of this paper is structured as follows. Section 2 presents the debate on the drivers of the finance wage premium. Section 3 presents our expanded conceptual framework on the financialisation-finance wage premium nexus. Section 4 provides a historical analysis of the relationship between the financialisation of NFCs and households in Greece and how this relates to the remarkable increase in the finance wage premium in the country since its introduction to the Eurozone. Section 5 presents the preliminary descriptive analysis of our data and the econometric approach of the paper, while section 6 reports and discusses the main findings of the regression analysis. Finally, section 7 concludes.

2. The Finance Wage Premium Debate: Productivity or Rent-Sharing?

Early research on the finance wage premium argues that it effectively reflects a sectoral skills premium. Philippon and Reshef (2012) and Célérier and Vallée (2015) claim that job tasks in the financial sector have become more complex since the beginning of financial deregulation in the early 1980s. Thus, the demand for talent and skills by financial firms has increased, creating an inflow of highly productive workers into the sector. Oyer (2008), Goldin and Katz (2008), and Shu (2013) report that over the last decades, an increasing share of graduates from highly ranked universities has been working in the financial sector. On top of that, Philippon and Reshef (2012, p. 1552) argue that "...tight regulation inhibits the creativity of skilled workers". Hence, they imply that the lack of regulation in the financial sector over the last four decades has allowed employees within it to be more creative and, consequently, more productive. The main implication of these arguments is that, since workers in finance are more skilled and thus more productive (either due to talent or education), the finance wage premium is indeed a 'fair' and efficient reward.

However, most recent studies suggest that the finance wage premium is not productivitydriven. Böhm et al. (2022) shift the focus from the US and show that it is rent-sharing rather than skills and talent that explain the growth of the finance wage premium in Sweden. Given that nowadays the operations of banks and financial firms are closely interconnected with both NFCs and households, governments typically bailout them and provide guarantees for them in cases of failed investments to reduce systemic risks (Tomaskovic-Devey and Lin 2011). This, in turn, makes banks and other financial corporations prone to undertake a rising number of high-risk, high-reward projects as the actual risk is effectively low, given the government guarantees (Freeman 2010; Lin 2015). As Bell and Van Reenen (2014) show, financial sector workers in the UK did not experience a decline in their bonuses or a deterioration of employment security even after the 2008 global financial crisis. Thus, under these circumstances, large, guaranteed rents are generated disproportionately in this sector compared to the rest of the economy, a significant part of which ends up to workers through individualised bonuses and other profitability-linked benefits (Ellis and Taylor 2010).

Recent studies for advanced and emerging economies demonstrate that the growth of the financial sector has increased the finance wage premium, particularly for top-income earners. Roberts and Bao (2021) show that the finance wage premium in China has grown over its transition to a market economy since the mid-1990s. While the premium exists across income percentiles, it has decreased at the bottom and expanded at the top. By the same token, Roberts and Kwon (2022) focus on a sample of 13 advanced economies since the 1980s using data from the Luxembourg Income Study Database. They show that financial deregulation and the development of financial markets and institutions have empowered the financial sector and allowed its (elite) workers to benefit from the process. In a more recent study, Roberts et al. (2023)

focus on the finance wage premium in Brazil, Russia, India, and China. While they demonstrate that a significant premium exists in all of them (particularly at the top), significant variation in terms of its size and evolution over time does exist. Roberts et al. (2023) attribute these differences to the variegated nature of the structures of financial systems in each of these economies.

Summarising, several recent studies debunk the early skills-oriented explanations of the rise of the finance wage premium, and provide significant evidence on how the growth of the financial sector and financial deregulation disproportionately empower actors in the financial sector. Yet, current explanations of the finance wage premium centre disproportionately on only one side of the coin: *the increase in the compensation of financial sector employees via rent-sharing*. While financial deregulation explains well the rise of the finance wage premium at the top of the income distribution, the finance wage premium exists across occupations and income deciles. Fully understanding the growth and persistence of the pay premium across the financial sector requires the expansion of this framework and incorporating insights about: (i) the sources of the rents generated in the financial sector; (ii) who undertakes the burden of financing these rents; and (iii) how the increasing burden of financing them induces pay reductions in the rest of the private sector.

3. Financialisation & the Growth of the Finance Wage Premium

Financialisation has been used widely as an umbrella term for the expansion of finance and insurance sectors and the growth of financial profits/rents across the world. However, this is the outcome of the underlying processes rather than the full picture of this phenomenon. A more complete definition of financialisation is that it refers to the increasing dependence of the non-financial parts of the economy on financial institutions and financial instruments. This, in turn, makes servicing their financial commitments their primary goal at the expense of other long-term goals. As financialisation is a multidimensional process that affects both NFCs and households, the behaviour and strategies of both are shaped by the financial constraints that they face (van der Zwan 2014; Thompson and Cushen 2020; Gouzoulis et al. 2023). What is important in terms of fully understanding the nexus between financialisation and the finance wage premium is how financialisation shapes human resource management practices and the employment relationship in the non-financial sectors.

Focusing on the firm level, the financialisation of NFCs is closely linked to the rise in corporate financial commitments. NFCs have become increasingly indebted to finance real investments, existing debts, or buying back their shares to boost share prices and maximise returns to shareholders. Over at least the last 20 years, an increasing share of the credit obtained by NFCs ended up in the latter two (Pérez 2021). Thus, their balance sheets have been deteriorating and, thus, improving and maintaining their 'financial sustainability' has become their main priority. Improving their balance sheets very often pushes NFCs to counterbalance

rising financial payments via cost-cutting (Lazonick and O'Sullivan 2000). As cutting costs involves some bargaining between employers and stakeholders, typically the stakeholder that bears the cost of rising financial payments is the one with the least bargaining power: the employees of NFCs. A growing literature in human resource management, industrial relations, and sociology of work shows that financialised NFCs shift away from commitment-based/involvement-focused HR practices to a strictly market-based HR approach (Thompson 2003, 2013; Cushen and Thompson 2016; Deakin et al. 2003; Gospel and Pendleton 2005; Jacoby 2005). As a consequence, job insecurity and work intensification have been on the rise, workforce downsizing has become more frequent, and overall job quality has been deteriorating (Jung and Lee 2022; Gouzoulis et al. 2023; Hoque et al. 2023).

Interestingly, this corporate financialisation-induced shift to market-based HR practices does not affect exclusively less skilled employees but also high-skilled employees. These are increasingly employed under precarious contracts, have fewer career progression opportunities, and face a greater dismissal threat due to economic reasons linked to corporate financialisation (Palpacuer et al. 2011).¹ Indeed, analyses of the impacts of corporate debt and financial payments on workers' income share across non-financial sectors demonstrate that they are a key factor behind its decline (e.g., Alvarez 2015; Gouzoulis 2022). How are these processes related to the growth of the (average) finance wage premium? On the one hand, debt repayments to financial institutions by NFCs increase their profits which allows them to maintain a more commitment-based HR approach and offer comparatively higher salaries, and/or also offer bonuses and commissions. On the other hand, wage reductions implemented in NFCs to improve their financial position further widen the wage gap between workers in finance and the rest of the economy.

Shifting our focus on the household side, financial liberalisation policies that started around the early 1980s, allowed financial institutions to increase credit provision to middle- and low-income households. The parallel process of public spending reductions related to education, healthcare, and social housing has increased the demand for credit for less wealthy households and pushed them into debt (e.g., see ONS, 2016; Cox et al. 2007; Betti et al. 2007). Accordingly, the household debt-to-GDP ratio has been rising fast and, thus, an increasing proportion of financial profits comes from loans to households. The effects of rising household indebtedness have been studied widely since the 2008 global financial crisis where the securitisation of household loans played a key role in the collapse of the real estate market and major banks in the USA. Yet, while the impact of household debt on macroeconomic stability is well-established, it is only recently that studies have been theorising and examining its effects on labour market outcomes and worker militancy.

¹ Peters (2011), Kollmeyer and Peters (2019), and Dubuis et al. (2020) also argue that financialised firms may hire non-unionised workers to reduce their wage bill, incentivising workers to avoid unionising to secure their job.

Contributions within cultural political economy and sociology of finance argue that rising personal indebtedness increases individuals' fear of personal default and, hence, it makes them more risk-averse and self-disciplined (Langley 2008; Lazzarato 2012; Sweet 2018). Recent studies introduce insights from this literature into analyses of labour market outcomes and show that rising personal indebtedness is strongly associated with the decline in workers' income share, the rise of contingent work, and the decline of strike activity (Wood 2017; Grady and Simms 2019; Gouzoulis 2021, 2023; Gouzoulis et al. 2023a, b). Focusing on the wage effects of household debt, relevant studies claim that rising personal indebtedness and the associated fear of default make workers more compliant with worsening working conditions and lower compensation. Being more demanding in wage negotiations comes with a significant risk of being replaced or not getting a job offer, given the liberalisation of labour markets (Stelzner 2017). Unemployment involves a direct loss of income but also long-run scarring effects, both of which increase the possibility of failing to finance your debt.² Similar to NFCs, surging financial commitments for households also makes them more short-termist and focused on ensuring their short-run 'financial sustainability'. Therefore, lowering wage demands as a means of securing any income flow is often preferable over risking demanding 'too much', becoming or remaining unemployed, and defaulting on your debt.

Similar to the case of business debt, household debt can be associated with expansions in the (average) finance wage premium via two mechanisms. First, as household debt increasingly contributes to the profitability of the financial sector, its growth allows firms within it to afford higher salaries as well as bonuses. Second, it lowers the wage demands of more precarious/low-income workers who experience the burden of it (typically occupied outside the financial sector).

Elaborating on the importance of financialisation for the average financial wage premium, again one has to look separately at its effects within and outside the financial sector. Regarding the financial sector, while financial intermediation is linked to the overall profitability of the sector that allows CEOs to receive major bonuses, it also involves commissions and bonuses received by lower-tier employees who sell relevant financial products (e.g., in local bank branches). Yet, different forms of private debt entail different levels of risk and returns. Here, distinguishing between business and household debt as well as between short- and long-term liabilities is important.

Long-term business loans are typically linked to long-term real investments by NFCs, and imply some consensus between financial institutions and NFCs regarding the horizon of returns and repayment. However, nowadays such 'patient capital' agreements are the exception rather than the norm (Deeg and Hardie 2016). Short-term business loans are high-rate loans that are used to finance emergency needs and are usually repayable within one year, but involve smaller

 $^{^{2}}$ The scarring effects of unemployment describe the significant medium- and long-run wage penalties that are associated with unemployment (e.g., see Arulampalam 2001; Filomena 2023).

amounts of debt. Both types of business debt are likely to push NFCs to shift towards marketbased HR practices and implement wage reductions either to finance the large amounts of longterm loans or the smaller but costlier short-term loans. In the case of household debt, long-term loans, which are largely mortgages, constitute the greatest burden for them as they involve very large amounts and long repayment horizons compared to any other purchase. Short-term household loans are mostly consumer loans that involve small amounts but, again, higher transaction costs and interest. Again, both types of debt are likely to increase the fear of default and induce self-disciplined wage bargaining approaches for indebted employees, but long-term loans should be more influential due to the greater commitment.

4. Financialisation, Financial Intermediation, & The Finance Wage Premium: The Case of Greece

To evaluate the association between increases in different components of private debt on the finance wage premium, this paper examines the case of Greece since its introduction to the Eurozone in 1999. While private indebtedness has been rising fast in most advanced and emerging markets, Greece has experienced some of the most dramatic changes in terms of labour market outcomes and financial intermediation. Unlike larger European economies, Greece's financial system was mainly constituted of small and underdeveloped commercial banks until it became part of the interconnected banking system of the Eurozone. Free capital movement within it increased liquidity which allowed Greek private financial institutions to grow fast and provide cheap credit to both NFCs and working-class households (Lapavitsas, 2019). Interestingly, since Greece has not been an export-oriented economy and its industrial relations system has already been substantially deregulated, the main outcome of its integration into the Eurozone has been the financialisation of its NFCs and households (Varoufakis and Tserkezis 2016).

Figure 1 reports the evolution of business and household debt as a share of GDP in Greece since 1999Q1. We distinguish between short and long-term liabilities for both components of private debt. Upon joining the Eurozone, the country experienced distinct levels of financial intermediation: household debt stood at around 10 percent of GDP, while corporate debt was approximately 35 percent of GDP. As Greece's banking system kept growing within the Eurozone, household debt accumulation accelerated, leading to the convergence of the two private debt ratios. Both household and business debt surpassed 50 percent of GDP in the third quarter of 2007. It's noteworthy that despite both ratios peaking shortly after the start of the Eurozone crisis in 2009 and then slightly declining, they remained significantly higher compared to their initial levels, particularly concerning household debt. Specifically, the household debt ratio has stabilized at approximately 60 percent of GDP since the last quarter of 2011, representing a six-fold increase compared to its value in early 1999. Meanwhile, corporate indebtedness has

also increased but at a slower rate, stabilizing at a value approximately double compared to its 1999 level. What is also worth mentioning is that while long- and short-term business debt ratios have moved in parallel throughout this period, the divergence between long- and short-term household debt ratios has been growing due to the faster expansion of the former.



Figure 1: Private Debt (% GDP) – Greece, 1999Q1-2021Q3

The post-EU narrative that finance must become the 'engine of growth' for the Greek economy favourably shaped business and labour market regulation in the finance and insurance sectors, both before and after the Eurozone crisis. As a result, pay in the finance and insurance sectors grew dramatically faster than in the rest of the economy over the last 22 years. Figure 2 reports the evolution of the finance wage premium in Greece since 1999Q1, which peaked at the onset of the Greek crisis in 2011Q2.³ At this point, the average employee in the finance and insurance sectors. To put that into context, the peak values of the relative wages in finance in the USA and Sweden in 2014 were slightly less than 1.7 and 1.6, respectively (Böhm et al. 2022).

Notes: Author's calculations using data from the Quarterly Financial Flows and Stocks database of Eurostat.

³ Following the standard approach in the literature, we calculate the finance wage premium as the ratio of the real average employee compensation in the finance and insurance sectors [K] over the real average employee compensation in the rest private sectors of the economy ([A], [B-E], [F], [G-I], [J], [M-N], [R-U]). The respective series are reported in Table A1 in the Appendix. Similar to Philippon and Reshef (2012), among others, the real estate sector [L] is excluded since its pay structures are very different compared to finance and insurance, and employee only a minuscule proportion of the workforce.



Figure 2: The Finance Wage Premium in Greece, 1999Q1-2021Q3

Notes: Authors' calculations using data from the Quarterly National Accounts of Eurostat (A*10 breakdowns).

Focusing on the evolution of the finance wage premium over time, from 1999 to 2004 relative pay in finance declined significantly as a result of the steeper increase in wages in the rest of the private economy. This was primarily due to the construction boom before the 2004 Olympics that took place in Athens, which increased employment in the non-financial private sectors at a faster rate than in the finance and insurance sectors (Missos and Loizos 2020). Since this increase in employment was driven almost exclusively by temporary contracts, soon after 2004 job losses in the non-financial sectors (particularly construction) increased rapidly. During the same time and up until the start of the Eurozone crisis, employment and working conditions in the finance and insurance sectors of Greece remained relatively stable. This was possible due to profitability and the relative strength of trade unions in these sectors. On the one hand, financial liberalisation allowed private financial institutions to provide increasingly large loans to both Greek firms and households which allowed them to afford offering decent salaries and generous compensation schemes. On the other hand, the historically strong trade unions of these sectors allowed them to negotiate for better sectoral and firm-level wage bargaining agreements compared to most other private sectors (Kornelakis 2014). Given that bargaining coverage in finance and insurance in Greece has been comparatively higher, sectoral agreements improved substantially working conditions across occupations in these sectors.

Naturally, the global financial crisis of 2008 and the subsequent Eurozone crisis that started around 2010 did not leave the finance and insurance sectors of Greece unaffected. Yet,

the economic adjustment programmes that were implemented in coordination with the EU and the IMF targeted primarily to improve export competitiveness in the private non-financial sectors and preserve the financial sustainability of the financial sector. In this context, private financial institutions were bailed out by the Greek state under the condition of improving their balance sheets and certain mergers and acquisitions. This translated into reducing the number of local branches and the number of employees via offering generous voluntary retirement schemes even to lower-tier employees. Despite the adverse economic conditions, unions in the financial sectors managed to effectively opt out of the reformed system and preserve their distinct compensation schemes and pension rights, which was not the case for workers in non-banking private firms and the self-employed (Matsagiannis 2012; Kornelakis 2014).

It is not surprising that the finance wage premium reduced significantly during the Greek recession. Focusing on the numerator of the ratio, a significant proportion of employee compensation is constituted of bonuses and commissions linked to selling financial products, and during this period demand for loans from NFCs and households in Greece declined notably (Biggs and Mayer 2014). Focusing on wages in the rest of the private economy during this period, it is important to note that at this time nationwide debt relief and restructuring programmes for private NFCs and households were implemented (Vetta 2022).⁴ Since these programmes decreased the risk of default to some extent, it is reasonable to assume that they also limited the potential disciplinary effects of financialisation on wages, which remained relatively stable (see Table A1). Interestingly, once these measures were lifted around 2020, the finance wage premium started rising steeply once again.

5. Preliminary Analysis & Empirical Approach

5.1 Descriptive Analysis & Granger Causality Tests

As the first step in our analysis, we analyse the relationship between the finance wage premium and the private debt ratios using descriptive analysis grange causality tests. Figure 4 presents scatter plots of the relationships between the finance wage premium and the household debt ratio, the business debt ratio, and productivity, respectively. Productivity is included to evaluate our main argument against the standard assumption that pay gaps are driven by productivity differentials. We proxy productivity differentials following the two standard definitions. First, as the ratio of the gross value added (GVA) per hour worked in the finance and insurance sectors and the rest of the private economy. Second, as the ratio of the GVA per worker in the finance and insurance sectors and the rest of the private debt ratios and the finance wage premium. In contrast, the nature of the association between productivity differentials and the finance wage

⁴ These programmes were commonly referred to as the 'Katseli Law', named after the minister who proposed the first version of this bill (Laws No 3869/2010, No 3816/2010, No 4336/2015, No 4336/2015, and No 4549/2018).

premium is less clear. Figure A2 in the appendix reports the evolution of the two productivity differentials over time.



Figure 4: Financial Intermediation Vs Productivity Ratios - Scatter Plots

Table 1 reports the results of the Granger causality tests. The test statistics are reported for up to two, up to three, and up to four lags. The evidence is very clear in the case of the household debt-finance wage premium nexus since all tests indicate that we cannot reject that household debt Granger causes the finance wage premium. Two out of three test specifications provide similar evidence for the business debt-finance wage premium nexus. Regarding productivity differentials, the tests provide no evidence of any causal relationship between productivity differentials measured by GVA per worker and the finance wage premium, and some evidence of causality running from the finance wage premium to productivity differentials measured by GVA per hour.

Notes: Authors' calculations using data from the Quarterly National Accounts of Eurostat (A*10 breakdowns).

	Up to 4 lags	Up to 3 lags	Up to 2 lags					
	F-Statistic (p-value)	F-Statistic (p-value)	F-Statistic (p-value)					
Hous. Debt → Finance Wage Premium	4.09*** (0.005)	3.43** (0.021)	5.96*** (0.004)					
Finance Wage Premium → Hous. Debt	0.68 (0.607)	0.79 (0.500)	1.29 (0.280)					
Bus. Debt → Finance Wage Premium	2.08* (0.091)	2.79** (0.045)	2.21 (0.115)					
Finance Wage Premium → Bus. Debt	2.05* (0.095)	0.49 (0.692)	0.99 (0.375)					
GVAph Diff. → Finance Wage Premium	1.47 (0.217)	1.68 (0.178)	0.37 (0.694)					
Finance Wage Premium → GVAph Diff.	1.90 (0.118)	2.49* (0.066)	3.46** (0.036)					
GVApw Diff. → Finance Wage Premium	1.17 (0.329)	1.51 (0.217)	1.16 (0.317)					
Finance Wage Premium → GVApw Diff.	1.24 (0.301)	0.99 (0.398)	0.90 (0.409)					
Notes: *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.								

Table 1: Granger Causality Tests - Main Variables

5.2 Baseline Specification & Econometric Approach

To evaluate the association between financialisation and the finance wage premium in Greece (see Figure 2), we estimate the following equation using quarterly data for the period 1999Q1-2021Q3:

Finance Wage Premium = f(Financialisation, Productivity, Bargaining Coordination, Social Benefits)

where financialisation is proxied via the total private debt-to-GDP ratio, the household debt-to-GDP ratio, and the corporate/business debt-to-GDP ratio. The latter two are subsequently divided into short- and long-term liabilities. All series come from the 'Quarterly Financial Flows and Stocks' database of Eurostat (see Figure 1). As analysed in section three, overall, we expect that both components of private indebtedness to be closely associated with the growth of the finance wage premium as they increase compensation in the financial sector and put downward pressure on wages in the rest of the private economy. Focusing on the distinction between short- and long-term liabilities, we expect long-term household debt liabilities and short-term business liabilities to exhibit stronger positive effects.

On top of financialisation, we also control for other determinants that are commonly included in the relevant literature. Productivity differentials/ratios using both definitions (see Figure A2) are included to evaluate whether the pay gaps between the financial sector and the rest of the private sectors are driven by productivity (Philippon and Reshef 2012; Célérier and Vallée 2015). Further, we also include the variable *'Type: Type of coordination of wage setting'* from Visser (2019), as a measure of bargaining coordination.⁵ Greater wage bargaining coordination is assumed to benefit those with the least bargaining power and reduce wage inequalities (Pontusson et al. 2002; Keune 2021). Visser's (2019) database is constituted of annual observations, thus, we expand the series in quarterly form by specifying the exact cut-off points

⁵ This discrete variable proxies shifts in wage bargaining coordination based on a 6-point scale. The scale includes the following categorisations: '0: No specific mechanism identified'; '1: Government sets signals'; '2: Pattern bargaining'; '3: Intra-associational'; '4: Inter-associational by peak associations'; '5: Government-sponsored bargaining'; '6: Government-imposed bargaining'.

by quarter.⁶ Last, we also control for the impact of social benefits. We proxy this variable using social benefits (in kind and in cash) as a percentage of GDP from Eurostat's 'Quarterly Non-financial Accounts For General Government' database. In general, social expenditures capture redistribution between upper and lower deciles of income distribution (Cammeraat 2020). Therefore, social spending is typically associated with lower wage inequalities. In addition to the main explanatory variables, we also incorporate time dummies for the Greek crisis (2009Q1-2018Q4), the period when capital controls in 2015 (2015Q3-2018Q3), and the COVID-19 lockdowns.

Table A1 of the appendix reports descriptive statistics and unit root tests for all variables. The unit root tests indicate that our dataset includes a mix of variables that are stationary in levels and first differences. Hence, estimating our equations in levels would likely generate spurious estimates. As an additional step in our pre-estimation analysis, we evaluate the existence of cointegration using the standard Engle and Granger (1987) two-step approach. The first step of the process is to estimate a stationary regression in levels between our dependent variable and our predictors. The second step of the Engle-Granger test is to evaluate whether the residuals of each of the levels regression are stationary using unit root tests. Our results indicate the existence of a long-run/cointegrating relationship, since in all cases the Phillips-Perron tests suggest that the residuals of the respective levels regressions are indeed stationary.

In cases where the dataset includes both stationary and non-stationary variables, and there is evidence of cointegration, the usual practice is to estimate the models via the Unrestricted Error-Correction Model (UECM) (Sargan 1964; Davidson et al. 1978). The UECM incorporates the independent variables both in first-differences (short-run coefficients) and levels (level coefficients). To address simultaneity biases, the norm in the literature is to lag all level coefficients. The dependent variable is also included in lagged form as a first-differenced/short-run and a level independent coefficient as the error correction term. Given the long-term horizon of this study, our interest is centred on the level coefficients. Given that most time series datasets are of a similar nature to ours, the UECM is very widely used in the industrial relations literature (e.g., Checchi and Visser 2005; Kristal 2010; Bengtsson 2014; Vachon et al. 2016; Kristal 2019; Kollmeyer and Peters 2019; Gouzoulis 2021, 2022; Gouzoulis et al. 2023). Accordingly, our specifications based on the UECM are of the following form:

$$\Delta(Finance Wage Premium)_{t} = \beta_{0} + \beta_{1}(Finance Wage Premium)_{t-1} + \sum_{n=2}^{N} \beta_{n} x_{t-1} + \sum_{n=2}^{N$$

⁶ We specify the following turning points by quarter: (1) From 5 to 1 (2010Q1) - First Economic Adjustment Programme (May 2010); (2) From 1 to 0 (2016Q3) - Supplemental memorandum of understanding with Greece (June 2016); (3) - From 0 to 1 (2018Q3) - Ministerial Decree No. 32921/2175/2018 (August 2018).

$$\varphi_1 \Delta$$
(Finance Wage Premium)_{t-1} + $\sum_{n=2}^{N} \varphi_n \Delta x + u_t$

where the vector x includes the explanatory variables. The terms β_0 and u_t are the constant and the error terms, respectively. Following the standard practice applied in related studies on income distribution, the quarterly GDP growth rate from Eurostat is also included only in the first-differenced/short-run coefficients as a control variable for the short-term cyclicality of economic activity.

6. Results & Discussion

Table 1 reports the main findings of our econometric analysis. Our interest is centred on the long-run/level coefficients whose interpretation is more straightforward as they depict the long-term association between financialisation and the finance wage premium. This is in contrast to the first-differenced/short-run coefficients that capture adjustments in response to short-run deviation from the long-run trend which are hard to interpret (Lin and Tomaskovic-Devey 2013).

Overall, the findings provide robust support that most forms of private indebtedness are strongly associated with the growth of the finance wage premium in Greece since 1999. In particular, the findings are remarkably consistent when it comes to household debt, which is the component of private credit that has grown more rapidly since Greece entered the Eurozone. Interestingly, we also find supporting evidence in favour of our predictions regarding the distinctive effects between short- and long-run liabilities. Both short- and long-run household debt exhibit strong positive effects on the finance wage premium, with the latter being larger in magnitude. Simultaneously, while short-term business debt also exhibits a positive impact, the coefficient of long-term business debt is either very small in size or even negative (in specification (10)).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Priv. Debt 1-1	1.46***									
Hous. Debt t-1		1.52***						2.32**		
Hous. Debt (S-T) t-1			0.78***						0.74**	
Hous. Debt (L-T) t-1				1.78***						2.85***
Bus. Debt t-1					0.74			-1.23		
Bus. $Debt(S-T)_{t-1}$						0.47***			0.05	
Bus. Debt (L-T) t-1							0.07			-2.54**
GVAph Diff. 1-1	0.75**	0.81***	0.75**	0.80***	0.58*	0.74**	0.49	0.84***	0.77**	1.02***
Bargain. Coord. t-1	0.56	0.33	0.40	0.26	0.65*	0.24	0.46	-0.08	0.38	-0.78**
Social Benefits t-1	-0.14	-0.02	0.04	-0.06	-0.08	-0.09	0.18	0.32	0.01	0.27
LDV	-0.42**	-0.48**	-0.42**	-0.49**	-0.26*	-0.21	0.23	-0.56**	-0.41**	-0.52**
Adjusted R ²	0.20	0.24	0.23	0.24	0.14	0.17	0.12	0.25	0.21	0.29
BG Test	0.61	0.45	0.30	0.43	0.87	0.59	0.91	0.46	0.27	0.10
Harvey Test	0.92	0.96	0.89	0.98	0.80	0.71	0.23	0.93	0.98	0.37
Observations	90	90	90	90	90	90	90	90	90	90

Table 2: Drivers of the Finance Wage Premium – Main Results

<u>Notes</u> *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. The dependent variable is the average finance wage premium for the private sector in first differences. The estimates are derived via the Newey-West estimator (heteroskedasticity and autocorrelation-consistent errors). The coefficients are standardised by multiplying the obtained coefficient with the ratio of the standard deviation of the explanatory variable over the standard deviation of the dependent variable. Breusch-Godfrey (BG) test at second lag (p-values reported). LDV is the lagged dependent variable. Constant terms, time trends, time dummies, and short-run (first-differenced) coefficients are included, but not reported.

Table 3 reports the robustness checks, where all equations are re-estimated by replacing the sectoral productivity ratio used in the main results (measured using GVA per hour) with the alternative proxy (measured using GVA per worker). The results remain effectively the same. All forms of household debt exhibit strong positive effects, with the impact of long-term liabilities being larger in magnitude. Business debt, particularly short-term liabilities, is also positively associated with the finance wage premium, but the coefficient for long-term business debt liabilities again becomes even negative and statistically significant in equation (10).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Priv. Debt t-1	1.78***									
Hous. Debt 1-1		2.01***						3.01***		
Hous. Debt (S-T) t-1			0.94***						0.91***	
Hous. Debt (L-T) t-1				2.36***						3.74***
Bus. Debt t-1					0.84*			-0.02		
Bus. Debt (S-T) t-1						0.51***			0.04	
Bus. Debt (L-T) t-1							0.24			-2.90***
GVApw Diff. t-1	0.95**	1.09***	0.96***	1.07***	0.63	0.85**	0.48	1.11***	0.97***	1.40***
Bargain. Coord. t-1	0.73**	0.52*	0.51**	0.47	0.78**	0.31	0.62	0.07	0.50*	-0.72*
Social Benefits 1-1	-0.08	0.05	0.13	0.01	-0.01	-0.01	0.25	0.39	0.10	0.39
LDV	-0.52***	-0.65***	-0.53**	-0.66***	-0.35**	-0.28**	0.33*	-0.76**	-0.52**	-0.72***
Adjusted R ²	0.11	0.16	0.15	0.16	0.03	0.06	0.01	0.17	0.12	0.21
BG Test	0.48	0.60	0.42	0.49	0.56	0.48	0.69	0.82	0.37	0.37
Harvey Test	0.88	0.96	0.72	0.91	0.94	0.80	0.84	0.77	0.86	0.42
Observations	90	90	90	90	90	90	90	90	90	90

Table 3:	Drivers of	the Fina	nce Wage	Premium	- Robustness	Checks

<u>Notes</u>: *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. The dependent variable is the average finance wage premium for the total economy in first differences. The estimates are derived via the Newey-West estimator (heteroskedasticity and autocorrelation-consistent errors). The coefficients are standardised by multiplying the obtained coefficient with the ratio of the standard deviation of the explanatory variable over the standard deviation of the dependent variable. Breusch-Godfrey (BG) test at second lag (p-values reported). LDV is the lagged dependent variable. Constant terms, time trends, time dummies, and short-run (first-differenced) coefficients are included, but not reported.

Concerning the rest independent variables, the other fairly consistent finding is that both measures of productivity differentials between the finance and insurance sectors and the rest of the private economy are also positively associated with the expansion of the finance wage premium. However, it is worth noting that the size of their coefficients in the vast majority of the cases is substantially smaller than those of our proxies for financialisation. Therefore, our results are in line with recent studies which show that the growth finance wage premium is primarily driven by financialisation and rent-sharing within the financial sector rather than productivity.

On top of confirming recent arguments regarding the financialisation-finance wage premium nexus, the importance of our findings lies in the fact that we use a more appropriate measure of financialisation (rather than financial development/deepening) that captures its essence: the dependency of non-financial sectors and actors on financial institutions and instruments. Distinguishing between short- and long-term liabilities is also found to be consequential and sheds light on how the disciplinary effects of financialisation on employee compensation in the rest of the private economy differ. As argued in section three, short-term business debt tends to be more costly for NFCs which can lead to the deterioration of their balance sheets quickly and push their managers to downsize to improve financial performance. On the contrary, long-term business debt is commonly associated with more patient investment projects that are less likely to end up in urgent downsizing and wage cuts in the short- or medium-run. Our results provide evidence in favour of both arguments. Regarding household debt, in the vast majority of cases, long-term personal debt is linked to real estate purchases which constitute longterm commitments and the amounts of loans are much larger than those of consumer debt. For that reason, as analysed in section three, long-term loans are more likely to exhibit stronger disciplinary effects on indebted workers. Again, the magnitude of the relevant coefficients provides support to this claim. Taken together, our findings demonstrate that the impact of financialisation operates not only via increasing employee compensation in the financial sector but also through suppressing salaries in the rest of the private sector.

7. Conclusions

This paper provides an expanded framework for the analysis of the relationship between financialisation and the growth of the finance wage premium. We highlight that while recent studies emphasize the role of financialisation and how financial rent-sharing within the financial sector boost relative wages in finance, they overlook that financialisation simultaneously suppresses salaries in the rest of the economy (Roberts and Bao 2021; Roberts and Kwon 2022; Böhm et al. 2022; Roberts et al. 2023). This is because rising financial payments for NFCs incentivise their managers to downsize and cut wages to improve their balance sheets, while indebted households tend to become more self-disciplined at the workplace and more conservative in their wage negotiations as a means of avoiding unemployment and default (Lazonick and O'Sullivan 2000; Thompson 2003, 2013; Cushen and Thompson 2016; Gouzoulis 2021, 2022, 2023; Gouzoulis et al. 2023). Consequently, we argue that it is not financial liberalisation per se that drives the finance wage premium, but the dependency relationships generated via financial intermediation. In this context, we specify how different components of private debt can increase relative wages in finance and provide relevant evidence from regression analysis using the case study of Greece between 1999Q1 and 2021Q3 - one of the economies that became financialised more rapidly over the last decades.

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Appendix

	Mean	Median	Max	Min	Std. Dev.	Obs	PP Levels	PP 1st Diff
Finance Wage Premium	3.13	3.00	3.98	2.55	0.36	90	0.63	0.00
Priv. Debt	99.96	109.65	134.50	42.60	30.03	90	0.98	0.00
Hous. Debt	46.13	55.70	66.60	9.80	18.74	90	0.99	0.00
Hous. Debt (S-T)	6.99	7.30	10.90	2.70	2.43	90	0.99	0.00
Hous. Debt (L-T)	39.30	49.40	56.20	7.00	17.00	90	0.99	0.00
Bus. Debt	53.83	53.85	68.50	32.80	11.67	90	0.85	0.00
Bus. Debt (S-T)	18.21	19.30	22.30	8.50	3.30	90	0.98	0.00
Bus. Debt (L-T)	35.62	41.45	59.10	16.80	12.65	90	0.60	0.00
GVAph Diff.	2.47	2.18	3.74	1.56	0.64	90	0.16	0.00
GVApw Diff.	2.45	2.10	3.80	1.49	0.71	90	0.25	0.00
Bargain. Coord.	2.41	2.50	4.00	0.00	1.62	90	0.55	0.00
Social Benefits	16.83	17.55	22.10	10.70	3.42	90	0.00	N/A
Greek Crisis	0.44	0.00	1.00	0.00	0.50	90	0.94	0.00
COVID	0.07	0.00	1.00	0.00	0.25	90	0.95	0.00
Capital Controls	0.19	0.00	1.00	0.00	0.39	90	0.61	0.00
GDP Growth Rate	0.01	0.03	0.17	-0.15	0.08	90	0.00	N/A

Table A1: Descriptive Statistics & Unit Root Tests



 $\underline{\textit{Notes}}: \ \text{Authors' calculations using data from the Quarterly National Accounts of Eurostat (A*10 breakdowns)}.$



Figure A2: Productivity Ratios - Finance & Insurance Vs Rest of Private Sectors (Average)

<u>Notes</u>: Authors' calculations using data from the Quarterly National Accounts of Eurostat (A*10 breakdowns).