

Papadopoulou, Aggela; Gouzoulis, Giorgos

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From Legalization to Institutionalized Marginalization: Trade Union Density in Greece, 1970-2020

Aggela Papadopoulou* & Giorgos Gouzoulis*,†

*City St. George's, University of London
angeliki.papadopoulou@city.ac.uk

*Queen Mary, University of London,
†Global Labor Organization
g.gouzoulis@qmul.ac.uk

Abstract

This paper examines the evolution of trade union density in Greece between 1970 and 2020. While unionization grew substantially across most Western economies during the postwar reconstruction period, Greek organized labour largely missed this expansion due to the disruptions of the Greek Civil War (1946–49) and the military dictatorship (1967–74). Unionism expanded briefly after the restoration of democracy in 1974, but this proved short-lived. With the global rise of neoliberalism, Greece reverted to an anti-union regime, a trend that intensified following the Eurozone crisis. Building on this historical account, the paper employs time-series regression analysis to show that the deregulation of wage-setting and the decentralization of collective bargaining significantly undermined unionization. It further demonstrates that inflationary pressures and the servicization of the economy contributed to the long-run decline in union density.

Keywords: Trade Union Density; Collective Bargaining, Wage Setting; Greece

JEL Codes: J51; J58; N34

1. Introduction

Despite recent waves of unionization, union density has been undergoing a secular decline globally since the late 1970s. This decline, however, has not been uniform and has been more pronounced in countries where unions have historically been weaker. Greece constitutes an instructive case, given the particular political and economic circumstances that have shaped its unionization trajectory since WWII. Similar to other Southern European and Latin American economies, from Spain and Portugal to Chile, Argentina, and Brazil, Greece underwent authoritarian rule during the postwar “Golden Age” of capitalism, associated with late industrialization, political repression, and compressed transitions to democracy that left enduring legacies for labour movements. Trade unionism in Greece, even at its peak, remained comparatively weak, as organized labour had been repeatedly undermined in the context of the 1946–49 civil war and the 1967–74 military dictatorship. Following the restoration of democracy and the re-legalization of unions, a significant but short-lived expansion in union membership occurred. Since

the early 1980s, however, trade union membership has declined almost uninterruptedly due to a combination of political, structural, and economic reasons. This offers a historical account of the evolution of the Greek trade union movement since the late 1960s-early 1970s, and uses time-series regression analysis to examine the determinants of union density between 1970 and 2020.

From the late 19th century to the early 1970s, Greek trade unionism struggled to exist amidst domestic and political turmoil, like the various military dictatorships, the two World Wars, and the 1946-49 civil war. At the same time, the economic structures of the Greek economy, characterized by the dominance of low-productivity agriculture and an extensive service sector, alongside a historically weak industrial base and a proliferation of small enterprises, have profoundly shaped the high fragmentation of the Greek labour movement. As a result, unions' economic dependence on state funding and their close institutional and organizational ties with political parties have long undermined Greek workers' trust in unions and hindered mass unionization. Under these circumstances, it does not come as a surprise that the harshest austerity programmes implemented in recent decades globally went largely unchallenged. The first part of the paper traces the development of Greek trade unionism and the politics of unionization in Greece since the onset of the re-legalization of unions in the early 1970s.

Building on this historical account, the next part of the paper uses time-series regression analysis to provide the first macro-level analysis of the drivers of trade union density in Greece. Building on the relevant literature on the determinants of union density, we estimate our equations using an Unrestricted Error-Correction Model (UECM) with Robust Least Squares (RLS) via an M-estimator, which allows us to correct for biases related to outliers in the dependent variable series. Our results demonstrate that the deregulation of the wage-setting process and the decentralization of collective bargaining have severely undermined unionization in Greece, as they have disempowered unions institutionally, making unionization less appealing to workers. Moreover, we find that the increasing share of workers employed in services has also contributed to the decline in union density, since the vast majority of employees in these sectors work under precarious work contracts. We also find evidence that inflationary pressures have incentivized unionization as a means of coping with rising living costs, and that trade openness and import penetration have put downward pressure on union density.

The rest of the paper is structured as follows. Section two examines the historical evolution of organized labour in Greece. Section three discusses the drivers of the decline in trade union density. Section four presents the methodology and the econometric design. Section five offers the econometric results and discusses their implications. Finally, section six concludes.

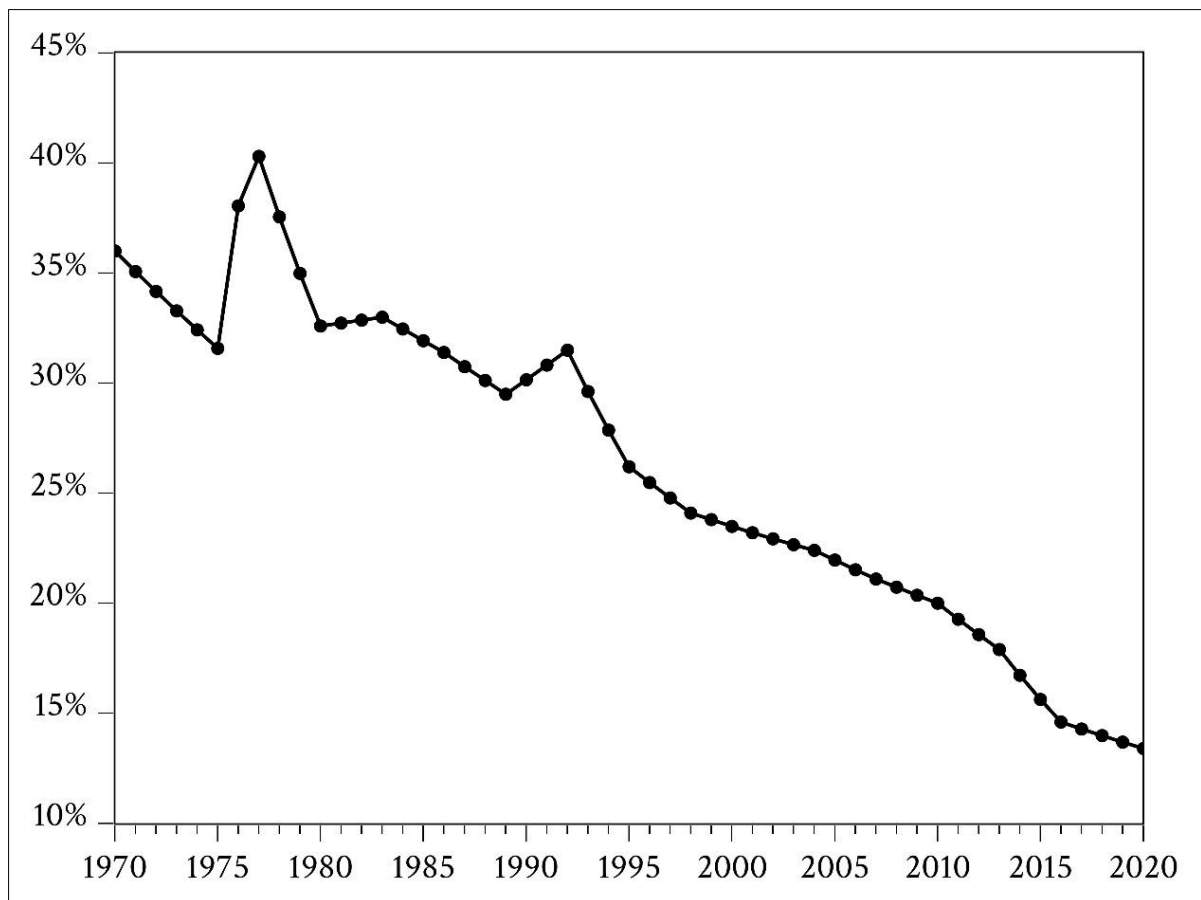
2. The Short-lived Rise & Steady Erosion of Greek Organized Labour, 1970-2020

The founding of the first Greek trade union in Syros in 1879 marked the beginning of the turbulent history of the Greek labour movement. In 1918, the General Confederation of Greek Workers (GSEE) was legally established and remained closely aligned with the communist agenda until 1925. Since then, all political-ideological currents have coexisted within GSEE as political factions. In 1926, public sector

workers formed the Confederation of Public Servants of Greece (SDYE), which was replaced by the Supreme Administration of Unions of Public Servants (ADEDY) in 1945, as the coexistence of public and private sector unions was prohibited –a restriction that remains in effect today (Zisimopoulos 2022). The main characteristics of the Greek labour movement include the asymmetry in the representation of the public sector relative to the private sector, the economic dependence of unions on the state, and their strong ties to political parties (Ioannou 1999; Bithymitris & Kotsonopoulos 2018).

The latter has historically undermined workers' trust in trade unionism (Papadopoulou & Gouzoulis 2020; Bithymitris 2021). Distrust has also been reinforced by the prolonged lack of leadership turnover within the Greek General Confederation of Labour (GSEE), whose president, Yannis Panagopoulos, has held the position since 2006; at the time of writing, he is under scrutiny over allegations of embezzlement and money laundering, yet remains in office. The structure of the Greek economy has also shaped the labour movement: the predominance of low-productivity agriculture and a large service sector, along with a historically limited industrial sector and a multitude of small businesses, has restricted the development of a strong, broad-based union system (Katsanevas 1985). Figure 1 below reports the outcome of our data collection and calculation, showing the annual evolution of trade union density in Greece between 1970 and 2020.

Figure 1: Trade Union Density in Greece, 1970-2020



Notes: Union density is the share of union members as a percentage of all gainfully employed persons. The main data source is the latest update of the *OECD/AIAS ICTWSS database, Version 2.0* (OECD & AIAS 2025), which covers the period 1977-2020. To expand and complement these series, we add two observations reported by Nikitas (1982, p. 21) for the years 1975 and 1976. Obtaining non-interpolated values for these years is crucial since they coincide with the re-legalization of the right to assembly after the end of the military

dictatorship in 1974. Also, we include an additional observation for the year 1970 reported by Katsoridas (2021, Table 7.1) in a report published by GSEE. Missing values are filled using log-linear interpolation, following standard practice for series changing at an approximately stable rate.

In the first period in our dataset that coincides with the 1967-1974 Colonels' dictatorship, trade unions were tightly controlled by the state, and many trade unionists were dismissed or persecuted (Katsoridas 2021). Already in 1967, the junta disbanded 158 unions and seized their assets. Although trade unions continued to exist officially, right-wing bureaucrats, including members from the labour section of the secret police, were appointed as union leaders (Ioannou 1999). The regime outlawed all strikes from public sector employees and declared all other strikes to be against the interests of the workers (Marks, 1973). Unsurprisingly, trade union density declines from 36 percent in 1970 (the first available data) to 31.6 percent in 1974.

Between 1974 and 1977, union density increased sharply, reaching a peak of 40.3 percent in 1977, the highest level observed throughout the period studied. Following the Junta's collapse, the working class called for a democratic system of labour relations (Tsakiris 2023). The restoration of democracy and the re-legalization of the right to assembly revitalized the labour movement, even though unions remained under strict control during the early years of the new democratic regime (Bithymitris 2021). In this context, the state sought to control the leadership of the two confederations (Zambarloukou 2006; Zisimopoulos 2022). At the same time, the restoration of the Communist Party's legitimacy after decades of repression, a party with deep ties to the labour movement, further strengthened union activity. One early development in labour rights following the restoration of democracy was Article 3.1 of the collective agreement of 26 February 1975, which reduced the working week from 48 to 45 hours while maintaining wages at the previous 48-hour level (Bithymitris & Kotsonopoulos 2018). This period was also marked by the creation of coordinating bodies and the rise of a militant factory-based unionism (Katsoridas 2021). The sharp increase in union density during this period is also linked to the expansion of the country's industrial base (Katsanevas 1985). However, unions were largely dependent on state funding that was provided through the Workers' Health Organization (Katsanevas 1994; Zisimopoulos 2022). This dependence likely helps explain much of the unions' development and historical trajectory in Greece.

The abrupt decrease in union density in 1978, followed by an overall downward trend, despite some significant fluctuations, can be attributed to several factors. Pervasive government intervention in industrial relations significantly undermined the power of the GSEE (Katsanevas 1985). Earlier, Law 330/1976 introduced a series of measures designed to curb union power and control industrial action: it established lockout provisions, prohibited political strikes, and legalized the organizational fragmentation of unions, thereby greatly limiting workers' capacity to coordinate collective action (Katsoridas 2021). Furthermore, the promising growth trajectory of the Greek manufacturing observed in previous years had come to a halt, while the strategy of technological modernization in capital-intensive sectors was progressively undermined (Bithymitris & Kotsonopoulos 2018). Importantly, even under the new democratic regime, unionists continued to face political stigmatization and moral censure. They were often branded as national traitors and agitators, accused of placing their own demands above the broader national interest (Karamanlis 1996). In many cases, unionists were dismissed from their

positions (Bithymitris & Kotsonopoulos 2018). This climate of delegitimization likely discouraged workers from joining unions and prompted some to resign their memberships, contributing to the decline in union density.

The period 1978-1983 saw an increase in trade union density. In 1981, PASOK, a (purported) socialist party, won the elections. Its leadership actively sought to influence the formally organized labour movement through its trade union faction, PASKE, promoting a reformist agenda that aimed to moderate labour militancy and consolidate a reliable support base for its subsequent political strategy (Nikitas 1982; Zisimopoulos 2022). In 1982, the leadership of the GSEE was dismissed and replaced by a new administration, composed predominantly of democratic political forces (GSEE 2025). The same year, the newly elected government enacted the pro-labour Act No. 1264/82, marking the beginning of a period of democratization within the trade union movement and the formal protection of union freedoms. The law established a system of proportional representation in union elections, further guaranteed trade union freedoms, legalized the formation of trade unions comprising at least 20 members, and established a framework for union factions (Bithymitris 2021; Zisimopoulos 2022). It also repealed the previous 330/1976 Act and abolished the Agency for the Administration of Trade Unions' Special Funds, an institution established by the Junta to tie unions' financial resources to the state (Katsoridas 2021). By guaranteeing workers' trade union rights in accordance with relevant International Labour Conventions, Act 1264/82 significantly strengthened the legal and institutional framework for autonomous union activity, laying the groundwork for a very active period of union involvement in policy-making and social dialogue (Katsanevas 1985).

At the same time, a series of reforms was introduced to strengthen workers' rights and protections. These included sectoral collective labour agreements that improved wages and social benefits, as well as Law 1387/1983, which regulated dismissal procedures. Additional measures provided targeted support for mothers, large families, and people with disabilities, and introduced social criteria for the evaluation and recruitment of civil servants and employees in public enterprises (Katsoridas 2021). However, as Bithymitris (2021) observes, the pre-existing connections between the ruling parties and trade unions subsequently fostered a system of clientelism. This period witnessed the emergence of state corporatism within trade unions, as PASOK employed a favourable wage policy to promote social peace, which secured the support of a substantial portion of employees in state-owned enterprises and directly consolidated its power within the labour movement through PASKE (Bithymitris & Kotsonopoulos 2018; Zisimopoulos 2022).

Between 1983 and 1990, there was a decline in trade union density. During this period, the PASOK government enacted a variety of pro-labour reforms, including increases in the minimum wage and minimum pension, alongside several social initiatives aimed at vulnerable groups (Tsakalotos 1998; Katsoridas 2021). Fouskas (2013) notes that these types of benefits have been regularly used by both left- and right-wing governments in Greece to restrain labour militancy. In 1985, PASOK implemented the first austerity programme in postwar Greece. That same year, any wage increase exceeding the

government's wage policy was rendered illegal by a presidential decree (Katsoridas 2021). While these developments initially prompted significant strike activity, they subsequently appear to have discouraged workers from joining trade unions, as such involvement likely came to seem futile. The drop in union membership over this period also reflects growing distrust in the labour movement, as union representatives increasingly gained political positions and pursued agendas contrary to their earlier promises as trade unionists (ibid.).

The brief rise in trade union density between 1990 and 1992 is most likely the result of the introduction of full collective bargaining freedom under the coalition government, through Law 1876/1990 (Bithymitris 2021). This Law granted workers the right to unilaterally resort to arbitration and expanded the scope of collective agreements to include enterprise-level and sectoral (Katsoridas 2021). However, the rest of the 1990s was marked by both the dominance of neoliberalism and the 'Europeanization' of the labour movement, a trajectory only interrupted by the global financial crisis (Bithymitris & Kotsonopoulos 2018). The Maastricht Treaty (1992) redefined the role of trade unions as social partners, while its convergence criteria called for the maintenance of competitive labour costs (Vos, 2006). European integration facilitated trade openness and import penetration, exposing domestic firms and workers to greater international competition and wage pressures. It was a period of consensus between trade unions and the state, aiming to achieve the 'national goals' of EU political and economic integration, as well as hosting the Olympic Games (Katsoridas 2021). This was also the era of extensive privatizations, in particular, of highly unionized state monopolies, de-industrialization, increasing unemployment, and the expansion of informal work (Zambarloukou 2006). This period also witnessed the first flexible employment contracts that created a generation of precarious and highly vulnerable workers (Bithymitris 2021). All these factors contributed to the undermining of the labour movement and explain the decline in trade union density until the late 2000s. Indicatively, in 2010, trade union density had fallen to 22.2 percent.

This period was characterized by a series of interrelated crises: the global financial crisis, the eurozone crisis, and the domestic sovereign debt crisis. The implementation of austerity measures as part of the adjustment programmes imposed by the three Memoranda of Understanding delivered the *coup de grâce* to an already disempowered labour movement. The repeal of the collective agreement system and of free collective bargaining, the decline in bargaining coverage, the inclusion of non-union representatives in wage negotiations, and the suspension of universal applicability underscored the institutional marginalization of trade unions (Bithymitris 2021).¹ The minimum wage was henceforth unilaterally set by the state; overall earnings have been drastically reduced, legal protections for employees have disappeared, and informal employment and workforce downsizing have become widespread (Katsoridas, 2021). Even the brief increase in trade union density between 2010 and 2013 more likely reflects the immense levels of unemployment: waged employment declined more rapidly than union

¹ For a detailed analysis on the specific laws implemented under the Memoranda, see Katsoridas (2021, pp. 189-209)

participation, disproportionately affecting the denominator of our variable.² The Greek bailout programme brought about general flexibility in labour relations, exemplifying the defeat of labour unions. Despite the country's exit from the Memoranda in 2018, labour unions have struggled to regain both their power and the trust of workers, as evidenced by the persistent decline in trade union density to the historical minimum of 13.4 percent in 2020.

Recapitulating, the historical evolution of the Greek labour movement reflects the country's particular growth model, combined with specific political circumstances. The dominance of small businesses that favour personal connections with employers, an atrophic industrial sector, and the dependence on imports, the fragmentation of unions and their strong party affiliation, as well as their institutional marginalization during periods of crisis, have eroded workers' confidence in trade unions and weakened the overall strength of the labour movement in Greece. To evaluate the relative importance of these competing factors quantitatively, the rest of the paper focuses on a regression analysis of aggregate union density in Greece. To lay the foundation for this analysis, the next section reviews the literature on the drivers of union density.

3. The Decline of Organized Labour: A Review of the Literature

Unions do make us strong. But why do they keep losing members and, thus, power? Over at least the last five decades, working conditions have been deteriorating across most industries, and the labour share has been declining almost uninterrupted in both advanced and developing economies across the globe. To a significant extent, this stylized fact is associated with ongoing attacks on labour rights and the concomitant decline in unionization rates (Oskarsson 2003; Rosenfeld 2014; Pontusson 2013, Bengtsson 2014; Barth et al. 2020; Trif et al. 2023). As a result, labour economists, industrial relations scholars, and sociologists of work have been increasingly researching the driving forces behind the steep decline in trade union membership, focusing on micro-, meso-, and macro-level factors. In general, this literature has identified that the fall of unionization is attributable to a combination of factors, including the deregulation of labour market institutions, the globalization of trade and enhanced capital mobility, the decline of industrial employment that came with de-industrialization, pressures related to inflation, financialization, and –to an increasingly lesser extent– the political orientation of the governing majority or the gender composition of the workforce (e.g., see Scruggs and Lange 2002; Checchi and Visser 2005; Brady 2007; Schnabel & Wagner 2007; Schnabel 2013; Trentini 2022; Kristal 2019; Gouzoulis 2024; Gouzoulis et al. 2024).

2.1 The Erosion of Labour's Institutional Power Resources

The decline of the Eastern Bloc and the gradual end of interregime competition between the East and the West brought dramatic changes in the global economy – most notably the deregulation of labour markets and decentralization of collective bargaining. During the early post-WWII period, increased labour demand driven by reconstruction efforts reduced unemployment, boosting unionization efforts, which

² Over this period, the unemployment rate averaged at 20.8 percent (Source: World Bank)

were also tolerated by economic elites in the West under the political pressures of the Cold War. Yet, once reconstruction came to an end, together with interregime competition, regulation in product, financial, and labour markets started being lifted, kicking off the neoliberal period. Focusing on the labour market deregulation *per se*, while the *right-to-association* remained protected -at least on paper- the right to collective bargaining and the level at which wage negotiations are taking place underwent dramatic changes under the pressures of employers.

Wage setting gradually became less coordinated, moving away from economy-wide and sectoral collective agreements to workplace- or even individual-level wage negotiations. Naturally, these legal interventions that make unions increasingly less relevant for wage bargaining discourage workers from joining or remaining members as the costs start exceeding the tangible benefits. In this respect, this process creates a vicious cycle of workers leaving unions, which further disempowers them financially and politically, and allows employers' associations to push for further attacks on labour rights and unions with little resistance. That can be seen quite explicitly in recent unionization efforts within Amazon, Google, and Boeing, which were met with punitive dismissals by their management (Saitano 2019, BBC 2020, Silver-Greenberg and Abrams 2021). By the same token, under the current environment, even joining an existing union can have similar consequences in terms of job loss (Stelzner 2017, Gourevitch 2018, Lafer and Loustaunau 2020).

However, despite the deregulation of wage setting and labour market institutions that has been spreading fast across the world, the process does occur at different paces across countries, subject to national specificities and historical circumstances (Baccaro and Howell 2011). Consequently, research on the labour market deregulation-unionization nexus shows that in economies where the liberalization of wage bargaining and collective bargaining rights have eroded at a slower pace, and some state regulation remains in place, unions have been losing members but at a fairly lower rate (e.g., see Rigby and García Calavia, 2018, 2023; Western, 1995, 1999).

Another important factor that is closely linked to the effects of collective bargaining on union density is the ideological orientation of the governing majority in a country. Broadly speaking, more left-wing-oriented political parties in power tend to favour collective, member-led institutions; thus, they typically implement legislative interventions that formally embed them into certain decision-making processes as stakeholders. Trade unions are a key example of such an institution that gains more power when left-wing political parties govern a country and loses power institutionally when right-wing parties are in power, who typically favour employers. As such, research on partisan politics and unionization shows that workers' motivation to join a union grows when left-wing parties are in power and make unions institutionally more powerful (Gumbrell-McCormick and Hyman, 2013; Masters and Delaney, 2005). Nonetheless, the differences in the economic policy agendas between left- and right-wing parties under Neoliberalism have been diminishing under the pressures of global competition in product and financial markets. Under this environment, even left-wing governments have succumbed to such pressures and adopted fairly right-wing economic policy agendas to maintain their power, with the example of Syriza after the 2015 referendum being a prime example. Therefore, the overall influence of

the governing majority's political ideology on union density is declining fast, relative to other determinants.

2.2 The Impact of Globalization & the Expansion of the Service Economy

Another fundamental structural change of the post-WWII era that came with the end of the Cold War is the globalization of the economy, particularly of production networks and international trade (Bluestone and Harrison, 1982; Harrison and Bluestone, 1988). Improvements in technologies, as well as the lifting of financial regulation related to capital flows since the 1980s, have enabled senior corporate management and employers to relocate production at different sites globally quickly and cost-effectively. Typically, the main motive behind this is to find the cheapest production site or region. Naturally, the most “cost-efficient” options are countries or regions where labour markets are less regulated, and workplaces are not unionized (Sassoon, 1996; Wallace and Brady, 2001). In that regard, in order to either retain their jobs or attract investors, workers in both origin and destination countries are likely not to form or even leave their unions in order to make their work site an “attractive”/“cost-efficient” option. Either way, the pressures of the globalization of production and the interlinked threat of relocation significantly undermine union density.

A significant part of the ongoing escalation of the globalization of trade and production is the segmentation of production networks. Instead of having to move the whole production of a certain product to a new location, corporate management and employers can decide to outsource all different components of their production to different sites, including the assembly process. Hence, this allows them to further intensify cost-cutting by choosing the cheapest option for each stage of production. The spread of production sites across different regions significantly undermines the effectiveness of unions since it generates major coordination challenges as well as legal issues. From a legal perspective, jurisdictional differences between local unions and foreign employers diminish unions' effectiveness by blurring responsibility in cases of labour rights violations (Western, 1999). At the same time, the coordination of strikes or wage bargaining with a specific parent corporation between remote workplaces, where different languages are spoken and/or operate under different labour rights legislation, becomes a major challenge. Taken together, the decline of unions' effectiveness in the current globalization era has discouraged workers from joining them, as, in many cases, the potential costs exceed the expected benefits of membership. Indeed, econometric studies demonstrate that countries that have been exposed to international product market competition, have been depending heavily on foreign direct investment, or have been affected substantially by import penetration, have seen significant declines in union membership rates and wages (Boulhol et al., 2011; Brady and Wallace, 2000; Slaughter, 2007).

Linked to the globalization of trade and production is the de-industrialization of high-income economies and the rise of services. The concentration of manufacturing and industrial production in non-unionized, low-wage regions, like South and Southeast Asia, Africa, and certain parts of Eastern Europe, has had a drastic impact on unionization at the global level. On the one hand, jobs in the industrial and manufacturing sectors, which traditionally represented the largest proportion of union jobs in the West, are now mostly non-union jobs in the East and Africa. On the other hand, people formerly employed in

industry and manufacturing in the West, as well as workers entering the workforce after the beginning of de-industrialization, are typically occupied in services. Jobs in the services sector, whether the employment relationship is dependent employment, gig work, or self-employed/freelancing, are typically non-union jobs. That is either because organising is much more difficult in the services sector due to the remoteness of the workplaces and the nature of job contracts (hourly paid, fixed-term, and part-time), or because gig workers and self-employed/freelancers very often lack the legal right to unionise in many countries. As a result, the de-industrialization of the West, the low-wage, non-unionized industrialization of the East and Africa, and the global rise of services have been important factors behind the decline of unionization globally (Blaschke, 2000; Jensen, 2020; Polachek, 2004; Schnabel, 2013). This shift to services has also been further exacerbated by fiscal adjustment programmes imposed on both high-, middle-, and low-income economies, a key component of which has been major cuts in public sector jobs, a traditionally highly unionized part of the economy (Checchi and Visser, 2005; Schnabel, 2003; Visser, 2002).

3.3 Other Drivers of Unionization

On top of well-established determinants of unionization that are directly related to workplace bargaining power and workforce shifts between sectors and occupations, macroeconomic factors that impact unionization *across* economic sectors have been gaining increasing attention in the literature. Most notably, recent studies shed light on how the financialization of the economy, as well as changes in consumer price inflation, can affect union density.

Regarding financialization, i.e., the process of non-financial institutions and actors becoming dependent on financial institutions and actors and ending up primarily focused on serving their financial obligations, recent studies show that both the financialization of corporations and households is playing a significant role in de-unionization. On the one hand, financialized non-financial corporations prioritise repaying their business loans and/or maximising dividend payments to shareholders, often at the expense of real investment. This leads to deteriorations in balance sheets, which pushes managers to cut costs either via direct workforce downsizing or via union busting, aiming to avoid paying union pay premia. In this context, union-busting tactics include fire-and-rehire strategies or lobbying the government to derecognise unions, both of which have contributed to the decline of union density across countries (Kollmeyer and Peters 2019; Gouzoulis et al. 2024). On the other hand, financialized households whose well-being depends heavily on personal debt tend to be more risk-averse in terms of their decision to unionise. Since serving their debts requires a steady flow of income from their work, forming or joining a union in the current environment of attacks on labour rights comes with a high chance of punitive redundancy, which drastically increases the possibility of missing debt payments and defaulting. Recent econometric studies have shown that higher household debt-to-income ratios are closely associated with the decline of union density rates across many advanced economies (Gouzoulis 2024; Barradas 2025). Taken together, financial pressures induce union busting by financialized corporations, which largely passes uncontested as workers facing their own financial risks avoid resisting these, reinforcing the decline of organized labour.

Concerning inflation, rising consumer prices are another important driver of unionization. As argued by Bain and Elsheikh (1976), among others, increases in living costs tend to generate incentives for workers to form and/or join a trade union as a means of demanding better pay to protect their purchasing power against inflationary pressures. Indeed, the empirical studies of Checchi and Visser (2005), Western (1999), and Gouzoulis (2024) show that consumer price inflation is positively associated with unionization rates across a wide range of economies globally.

Additionally, it is argued that a higher share of women in the labour force could reduce union density as women are more often employed in part-time, low-paid, or precarious jobs that are harder to unionise (Ibsen et al. 2017). Finally, some scholars discuss the relationship between union density and unemployment, although the effect remains ambiguous. On the one hand, unemployment can undermine unionization as job insecurity discourages workers from joining unions and weakens unions' bargaining power, while labour market conditions push workers towards more precarious jobs. On the other hand, unemployment can boost trade union density as employees' demand for protection incentivises unionization or shifts employment toward more unionized sectors (Checchi 2000; Checchi & Visser 2005).

4. Methodology & Econometric Design

Based on the historical account of the evolution of the Greek trade union movement presented in Section 2, and the key hypotheses and empirical findings of the union density literature discussed in Section 3, our baseline specification is the following:

$$\text{Union Density} = f(\text{Labour Market Regulation, Globalisation, Inflation, Employment in Services})$$

where the dependent variable is trade union density, defined as union membership as a percentage of employed persons, reported in Figure 1.

Starting with the regressors that proxy different aspects and dimensions of *labour market regulation*, we utilise five variables from OECD & AIAS (2025).³ The first variable is *Level* (the predominant level at which wage bargaining takes place), with values ranging between 1 (company or enterprise level) and 5 (central or cross-industry level). The second variable, *Central*, is a summary index of collective bargaining centralization that adjusts *Level* downward by taking into account the extent to which enterprise-level bargaining erodes centralization in practice, in formal rules, and through opening clauses. The third variable is *Type* (type of coordination of wage setting), which captures the predominant behavioural patterns of interaction between the major players involved in wage setting, i.e., unions, employers, and

³ For detailed definitions, see the Note on concepts and sources and the Codebook of OECD/AIAS ICTWSS Database (<https://www.oecd.org/en/data/datasets/oecdaias-ictwss-database.html>). Figure A1 in the Online Appendix reports the evolution of the five variables over time.

governments. It takes values from zero (no coordination mechanism) to six (government-imposed bargaining).

The fourth variable used is *Coord* (coordination of wage-setting), which builds on the observed characteristics of *Type* to make inferences about the behaviour of the negotiators and predict the bargaining outcomes. This variable ranges between one (fragmented wage bargaining) and five (binding norms; e.g. on minimum wages, resulting from either centralized bargaining between unions and employers, with or without government involvement, or from unilateral government imposition, with or without consultation with unions and employers).

The fifth variable is *Govint*, which measures the extent of government intervention in wage negotiations. It takes values between one (no intervention) and five (the government exerts full control over wage negotiations, including imposing private sector settlements, constraining bargaining outcomes, or halting bargaining altogether).

For *Level*, *Central* and *Type*, we expect a positive relationship with trade union density. However, for *Govint*, the expected effect is less straightforward and depends crucially on broader political and economic conditions. While a positive association might generally be expected, particularly in longstanding democracies, where governments tend to protect the party with less bargaining power, this is not always the case. In former autocracies or more clientelist state structures, government intervention may instead favour actors with closer political ties, such as economic elites or employers. Moreover, even in democratic contexts, this relationship can shift under conditions of economic turbulence. For example, during the Greek sovereign debt crisis, the state unilaterally reduced the minimum wage to the detriment of wage-earning households. The same holds for *Coord*, depending on the degree of government involvement and the type of norms imposed.

Regarding the rest control variables, for globalization, we use trade openness, i.e., the sum of imports and exports as a percentage of GDP. Alternatively, we also include import penetration, that is, imports as a share of GDP. Both variables are retrieved from the World Bank. Based on the literature, we anticipate a negative relationship between trade openness and import penetration and trade union density (see section 2).

Additionally, we use the inflation rate from the database of the World Bank. As already discussed, the expectation is a positive association with our dependent variable, as rising consumer prices incentivise workers to join a union to protect their purchasing power. Furthermore, instead of focusing solely on the process of de-industrialization, we use a variable to approximate the ‘servicization’ of the Greek economy, capturing also former employees from the highly unionized public sector who moved into service jobs, particularly during the austerity years. To do so, we divide the ‘civilian employment in services’ by ‘civilian employment’ from the Armingeon et al. (2023) database. We expect that an increase in the share of employees in the service sector will be negatively associated with trade union density.

As a last step, following standard practice in the literature, we incorporate the GDP growth rate from the World Bank to control for short-run business cycles. Accordingly, we include this variable in the first-differences part of the model. Finally, we also control for female participation in the labour force and unemployment (Sources: FRED and World Bank, respectively) and the state of democracy (Sources: Democracy Matrix and The Polity Project).⁴ Regarding the latter, in principle, democratic regimes are expected to provide a more favourable environment for the labour movement. However, as explained earlier, in the case of Greece, this relationship might not be that straightforward.

Overall, our time series dataset is compiled of annual observations and covers the period between 1970 and 2019. Table A1 in the Online Appendix reports the descriptive statistics and unit root tests for all variables of our dataset.

4.1 Methodology

To select the appropriate estimation approach, it is essential to assess whether our time series are stationary $I(0)$ or not $I(1)$. The Augmented Dickey-Fuller unit root tests indicate a mixture of $I(0)$ and $I(1)$ variables (Table A1, Online Appendix). Hence, we cannot employ standard linear regression in levels, as the results might be spurious. One solution would be to estimate the equations in differences. However, this technique could omit essential information on the long-term association of the core variables. A common approach to overcome this issue is to use the Unrestricted Error Correction Model (UECM) (Sargan 1964; Davidson et al. 1978; Lin & Tomaskovic-Devey 2013). This model suggests that there might be a type of relationship between two variables, in which one variable gradually calibrates to an equilibrium level set by the other (Volscho & Kelly 2012). To employ the UECM, a cointegrating relationship between the variables is required. We perform the Engle and Granger (1987) two-step process and find that the variables are indeed cointegrated.⁵

The UECM includes the regressors in both first-differenced and level forms, capturing both short-run and long-run relationships. Moreover, all level terms are lagged, which is a common practice to offset potential simultaneity bias and endogeneity issues. According to Wood and Stockhammer (2024), this approach operates similarly to the Granger causality test. Finally, as a dynamic model, the UECM includes the response variable in both first-differenced and lagged level form; the latter captures the error-correction term.⁶ Consequently, we use the following specification of the UECM:

$$\Delta(\text{Union Density})_t = \beta_0 + \beta_1(\text{Union Density})_{t-1} + \sum_{n=2}^N \beta_n(x)_{t-1}$$

⁴ Ideally, we would like to include a variable on financialization, but such data are only available since the mid to late 1990s. However, it should be noted that in Greece, financial development took place belatedly and to a lesser extent relative to the rest of the world. Hence, the inclusion of this variable may not be that relevant in this case study.

⁵ This procedure is as follows. First, for every equation, we estimate a stationary regression in levels between our depended and independent variables. Second, we carry out unit root tests for the residuals of each regression. If the residuals are stationary, then, a long-run, cointegrating relationship exists for each specification.

⁶ The error-correction term indicates the pace at which the dependent variable adjusts to return to equilibrium after a short-term shock.

$$+\varphi_1\Delta(\text{Union Density})_{t-1} + \sum_{n=2}^N \varphi_n (\Delta x) + \varepsilon_t$$

where the vector x represents the explanatory variables, n represents the year, β_0 is the constant term, β_1 is the parameter of the response variable in first lag (or error correction term), β_n is the parameter of the explanatory variables in first lag, φ_1 is the parameter of the lagged dependent variable in first differences, and φ_2 is the parameter of the differenced explanatory variables.

In general, the residuals of time-series regressions are not independently and identically distributed; in other words, serial correlation and heteroskedasticity issues are typically present. For this, we estimate the equations using the Newey–West (1987) estimator. Overall, this approach has been widely employed in research work on industrial relations and inequality studies (Borland & Ouliaris 1994; Checchi and Visser 2005; Gouzoulis 2021, 2022; Papadopoulou 2025). Finally, to correct for the notable outlier in the dependent variable (see Figure 1), we use the Robust Least Squares (RLS) estimation, in particular, the M-estimator, a process that assigns smaller weights to extreme values (Huber 1973).

For the interpretation of our findings, we primarily focus on the level coefficients. First-difference coefficients only reflect the short-run adjustments toward the long-run equilibrium. As Lin & Tomaskovic-Devey (2013) argue, there must be a clear theoretical justification for anticipating changes in the dependent variable to be driven by changes in the independent variable, independently of their level values. In the following section, we therefore report and discuss the coefficients of the independent variables in levels.

5. Findings & Discussion

Table 1 presents the results of our estimations on the association between *Level* and union density. The respective coefficients are consistently positive in all ten equations and statistically significant in seven. The size of the coefficients suggests that a one unit increase in *Level* is associated with an increase in trade union density that ranges between 0.15 and 0.53 percentage points, *ceteris paribus*. Inflation is found to increase trade union density, with statistically significant coefficients in nine specifications. The ‘servicization’ of the economy is found to have a strong negative impact on trade union density. The relevant coefficients are consistently negative in all ten specifications, while above the accepted levels of statistical significance in eight. The coefficients of the globalization variables are negative in eight out of ten specifications, but statistically significant in only three. The coefficients of the level of democracy do not have the expected sign but are very close to zero and mostly non-significant. *Female LFP* significantly decreases union density, whereas unemployment also has a negative impact, but not statistically significant.

Table 1: Drivers of Union Density in Greece, 1970–2019 – Level of Wage Bargaining

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
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<i>LDV</i>	-0.18***	-0.14***	-0.19***	-0.11**	-0.20***	-0.16***	-0.39***	-0.34***	-0.45***	-0.44***
<i>Level</i> _{t-1}	0.14*	0.22***	0.14	0.21**	0.14	0.25***	0.18	0.30*	0.49***	0.53***
<i>Inflation Rate</i> _{t-1}	0.04**	0.02	0.05***	0.05**	0.05**	0.05**	0.08**	0.07**	0.04**	0.04**
<i>Employment in Services</i> _{t-1}	-0.04**	-0.05**	-0.04*	-0.01	-0.05**	-0.04	-0.11**	-0.10**	-0.05**	-0.05**
<i>Trade Openness</i> _{t-1}	-0.02*		-0.02*		-0.02*		-0.02		-0.10	
<i>Import Penetration</i> _{t-1}		-0.01		0.00		-0.01		0.00		-0.00
<i>Democracy Index</i> _{t-1}			-0.00	-0.00*						
<i>Polity Score</i> _{t-1}					-0.01	-0.03				
<i>Unemployment</i> _{t-1}							-0.04	-0.04		
<i>Female LFP</i> _{t-1}									-0.38***	-0.38***
<i>Adjusted R²</i>	0.88	0.87	0.89	0.89	0.89	0.86	0.75	0.74	0.93	0.94
<i>Observations</i>	48	48	48	48	48	48	42	42	42	42

Notes: *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. The dependent variable is the union density rate in first differences. *LDV* is the lagged dependent variable. Constant terms and short-run (first-differenced) coefficients are included but not reported.

Table 2 reports the results on the centralization of wage bargaining. The coefficients of *Centralization* are consistently positive in all ten specifications and statistically significant in eight. A one-unit increase in this variable is related to an increase in trade union density that ranges between 0.14 and 0.46, all other things held constant. The results on the rest of the control variables remain almost identical in terms of coefficient sign, size and significance.

Table 2: Drivers of Union Density in Greece, 1970-2019 – Centralization of Collective Bargaining

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>LDV</i>	-0.18***	-0.15***	-0.19***	-0.11***	-0.20***	-0.14***	-0.38***	-0.33***	-0.45***	-0.44***
<i>Centralization_{t-1}</i>	0.15**	0.25***	0.14*	0.18***	0.14	0.21***	0.21	0.31**	0.43***	0.46***
<i>Inflation Rate_{t-1}</i>	0.04**	-0.01	0.05***	0.05***	0.05**	0.05***	0.08**	0.08**	0.04***	0.04***
<i>Employment in Services_{t-1}</i>	-0.04***	-0.06***	-0.04*	-0.01	-0.05**	-0.02	-0.10**	-0.10**	-0.06***	-0.06***
<i>Trade Openness_{t-1}</i>	-0.02		-0.02		-0.02*		-0.02		-0.01	
<i>Import Penetration_{t-1}</i>		0.00		0.00		-0.01		0.01		-0.00
<i>Democracy Index_{t-1}</i>			-0.00	-0.01**						
<i>Polity Score_{t-1}</i>					-0.01	-0.04				
<i>Unemployment_{t-1}</i>							-0.03	-0.03		
<i>Female LFP_{t-1}</i>									-0.34***	-0.34***
<i>Adjusted R²</i>	0.88	0.96	0.89	0.90	0.89	0.89	0.75	0.75	0.94	0.95
<i>Observations</i>	48	48	48	48	48	48	42	42	42	42

Notes: *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. The dependent variable is the union density rate in first differences. *LDV* is the lagged dependent variable. Constant terms and short-run (first-differenced) coefficients are included but not reported.

Table 3 presents ten specifications on the relationship between *Type* and union density. *Type* is found to be positively associated with trade union density, with the respective coefficients being consistently positive and statistically significant at the one percent level. The size of these coefficients suggests that a one unit increase in *Type* is associated, *ceteris paribus*, with an increase in union density between 0.24 and 0.43. The results on inflation, employment in the service sector, and the level of democracy remain largely the same. The coefficients of globalization are consistently negative in all ten specifications, and above the accepted levels of statistical significance in nine. Finally, the coefficients on *Unemployment* and *Female LFP* have changed sign (positive) and are non-significant.

Table 3: Drivers of Union Density in Greece, 1970-2019 – Type of Coordination of Wage Setting

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>LDV</i>	-0.41***	-0.41***	-0.38***	-0.35***	-0.39***	-0.36***	-0.37***	-0.33***	-0.32***	-0.26***
<i>Type</i> _{<i>t-1</i>}	0.24***	0.31***	0.24***	0.35***	0.24***	0.36***	0.33***	0.43***	0.27***	0.36***
<i>Inflation Rate</i> _{<i>t-1</i>}	0.05***	0.02	0.06***	0.06***	0.06***	0.06***	0.07***	0.09***	0.10***	0.11***
<i>Employment in Services</i> _{<i>t-1</i>}	-0.11***	-0.14***	-0.09***	-0.08***	-0.09***	-0.08***	-0.08***	-0.07***	-0.05*	-0.02
<i>Trade Openness</i> _{<i>t-1</i>}	-0.05***		-0.05***		-0.05***		-0.03***		-0.04***	
<i>Import Penetration</i> _{<i>t-1</i>}		-0.08***		-0.06**		-0.07**		-0.02		-0.05*
<i>Democracy Index</i> _{<i>t-1</i>}			-0.01	-0.01*						
<i>Polity Score</i> _{<i>t-1</i>}					-0.04	-0.08**				
<i>Unemployment</i> _{<i>t-1</i>}							0.01	0.01		
<i>Female LFP</i> _{<i>t-1</i>}									0.02	0.09
<i>Adjusted R</i> ²	0.92	0.88	0.90	0.88	0.91	0.88	0.94	0.94	0.94	0.94
<i>Observations</i>	48	48	48	48	48	48	42	42	42	42

Notes: *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. The dependent variable is the union density rate in first differences. *LDV* is the lagged dependent variable. Constant terms and short-run (first-differenced) coefficients are included but not reported.

In Table 4, we examine the relationship between *Coordination* and trade union density. The coefficients of *Coordination* are mixed; they are positive in seven out of ten equations, while statistically significant in four. The results on inflation and the servicisation of the economy remain nearly the same. The sign of the coefficients of the globalization variables is negative in seven out of ten equations, while statistically significant in four. The coefficients of the *Democracy Index* and *Polity Score* are mixed, non-significant, and close to zero. Unemployment is reported to have a significant negative impact on union density. Lastly, *Female LFP* also has a negative effect, with one statistically significant coefficient at the one percent level, out of two specifications.

Table 4: Drivers of Union Density in Greece, 1970-2019 – Coordination of Wage Setting

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>LDV</i>	-0.16***	-0.10**	-0.20***	-0.10**	-0.22***	-0.12**	-0.47***	-0.40***	-0.64***	-0.36***
<i>Coordination</i> _{<i>t-1</i>}	-0.14	0.20	-0.09	0.29	-0.07	0.30	1.00***	1.02***	1.17***	1.19***
<i>Inflation Rate</i> _{<i>t-1</i>}	0.04***	0.03*	0.04**	0.04**	0.04**	0.04*	0.08***	0.09***	0.08***	0.11***
<i>Employment in Services</i> _{<i>t-1</i>}	-0.02	-0.03	-0.05*	-0.02	-0.05**	-0.03	-0.14***	-0.11***	-0.14***	-0.07***
<i>Trade Openness</i> _{<i>t-1</i>}	-0.03***		-0.04***		-0.04***		-0.01		-0.06***	
<i>Import Penetration</i> _{<i>t-1</i>}		-0.01		0.00		-0.00		0.02		0.01
<i>Democracy Index</i> _{<i>t-1</i>}			0.00	-0.01						
<i>Polity Score</i> _{<i>t-1</i>}					0.01	-0.02				
<i>Unemployment</i> _{<i>t-1</i>}							-0.07***	-0.08***		
<i>Female LFP</i> _{<i>t-1</i>}									-0.28***	-0.12
<i>Adjusted R</i> ²	0.86	0.84	0.89	0.87	0.88	0.87	0.88	0.86	0.89	0.72
<i>Observations</i>	48	48	48	48	48	48	42	42	42	42

Notes: *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. The dependent variable is the union density rate in first differences. *LDV* is the lagged dependent variable. Constant terms and short-run (first-differenced) coefficients are included but not reported.

Finally, Table 5 reports the findings on government intervention in wage negotiations. The coefficients of *Govint* are negative in nine out of ten specifications and statistically significant in six. The

results on inflation, employment in the service sector, and globalization are roughly similar to the previous findings. The coefficients of the level of democracy are positive but mostly statistically non-significant. Unemployment and *Female LFP* exert a negative effect, which is mostly below the accepted levels of statistical significance.

Table 5: Drivers of Union Density in Greece, 1970-2019 – Government Intervention in Wage Bargaining

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>LDV</i>	-0.09**	-0.04	-0.18***	-0.09**	-0.20***	-0.12***	-0.45***	-0.38***	-0.42***	0.00
<i>Gov. Intervention_{t-1}</i>	-0.18***	-0.19***	-0.27***	-0.28***	-0.24***	-0.29***	-0.17	0.08	-0.23	-0.01
<i>Inflation Rate_{t-1}</i>	0.05***	0.04**	0.04***	0.04***	0.04**	0.04**	0.07**	0.06**	0.10***	0.00**
<i>Employment in Services_{t-1}</i>	-0.00	0.00	-0.05***	-0.02	-0.06***	-0.04*	-0.14***	-0.11**	-0.10**	0.01**
<i>Trade Openness_{t-1}</i>	-0.02**		-0.04***		-0.04***		-0.05**		-0.06***	
<i>Import Penetration_{t-1}</i>		-0.02		-0.04		-0.04		0.00		-0.00
<i>Democracy Index_{t-1}</i>			0.01	0.00						
<i>Polity Score_{t-1}</i>					0.04*	0.04				
<i>Unemployment_{t-1}</i>							-0.05	-0.09***		
<i>Female LFP_{t-1}</i>									-0.07	-0.00
<i>Adjusted R²</i>	0.91	0.89	0.95	0.91	0.92	0.87	0.76	0.77	0.74	0.99
<i>Observations</i>	48	48	48	48	48	48	42	42	42	42

Notes: *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. The dependent variable is the union density rate in first differences. *LDV* is the lagged dependent variable. Constant terms and short-run (first-differenced) coefficients are included but not reported.

To assess the long-run, cumulative effect of the independent variables we also calculate and report the long-run multipliers for all variables in the Online Appendix (Tables A2-A6). Last, to further test the robustness of our main findings, we also report two additional rounds of regressions, which can be found in the Online Appendix. The estimations reported in Tables A7 and A8 in the Online Appendix introduce the *Right of Collective Bargaining* in the government and market sectors, respectively, into our baseline models. The positive association reported shows that the deterioration in collective bargaining rights is closely associated with the decline of union density in Greece.

Overall, taken together, our findings on the *Level*, *Centralization*, and *Type* suggest that the less centralized wage setting and collective bargaining systems are, the weaker the incentives for workers to participate in trade unions. Accordingly, the deregulation of the Greek labour market has had profound implications for the strength of the labour movement and, thus, domestic industrial relations over the past five decades. In addition, government intervention, as captured by *Govint*, is associated with a decline in union strength, whereas the effects of *Coordination* are largely inconclusive. As discussed in section two, these associations are not unexpected in the case of Greece, for two reasons. First, the legacy of the dictatorship and the subsequent police state, lasting until the early 1980s, was marked by direct state control over unions, including the appointment of union leadership. Second, during periods of economic crisis, particularly the eurozone crisis, the government intervened unilaterally in wage-setting, for instance by reducing minimum wages to boost profitability and investment. Both dynamics have

contributed to the institutional marginalization of trade unions and fostered a broader sense of distrust regarding the power and effectiveness of the Greek labour movement.

6. Conclusions

Trade unions have historically played a key role in protecting workers' rights and well-being, contributing to higher wages, improved working conditions, and a more equal distribution of income between and within social classes. Thus, the sustained decline in trade union density has had significant implications for the economic security and bargaining power of worker and employees. This paper studies historically and econometrically the drivers of trade union membership in Greece over the last 50 years. Notably, Greece did not experience a postwar reconstruction period, when unionism expanded in most advanced economies, as the country was grappling with a civil war followed by a dictatorship. Rather than an outlier, the case of Greece is representative of a wider group of Southern European and Latin American countries whose post-war labour and trade union movements were forged under the political and economic oppression of military dictatorships that lasted from the late 1960s to even the early 1990s.

As such, this paper elaborated how the trajectory of the Greek labour movement has been shaped by a distinctive combination of structural and political factors, and how these socio-economic contingencies, together with structural features of the Greek economy, did not foster the development of a robust labour movement. A growth model centred on small firms, where employment relations are often mediated through personal ties, together with a limited industrial base and a persistent reliance on imports, has constrained the development of collective organization. At the same time, union fragmentation, close party-political linkages, and episodes of institutional sidelining, particularly during periods of crisis, have further undermined both union effectiveness and workers' trust in collective representation. Building on this foundation, this study provides the first macro-level econometric analysis of the determinants of trade union density in Greece. Employing an Unrestricted Error-Correction Model (UECM) with Robust Least Squares (RLS) to correct for the sudden uptick in unionization occurred during the process of democratization, our findings suggest that changes in the wage-setting process and the decentralization of collective bargaining have profoundly constrained unionization in Greece from 1970 to 2019.

What is of particular importance is that we find that measures of the centralization of the wage setting process *per se* are strongly, positively associated with union density, as it makes unions more institutionally powerful. Instead, the two variables that capture government intervention in wage setting, which traditionally also incentivizes unionization, have insignificant or even adverse effects on Greek union density. As explained in the historical account of section two, this relates to the long-standing pro-employer stance of the government during autocratic periods and the strong ties between union leadership and political parties till today. On top of these, we show that the prevalence of the service sector and the integration in the world economy have put further pressure on union density, whereas inflationary pressures have incentivized unionization.

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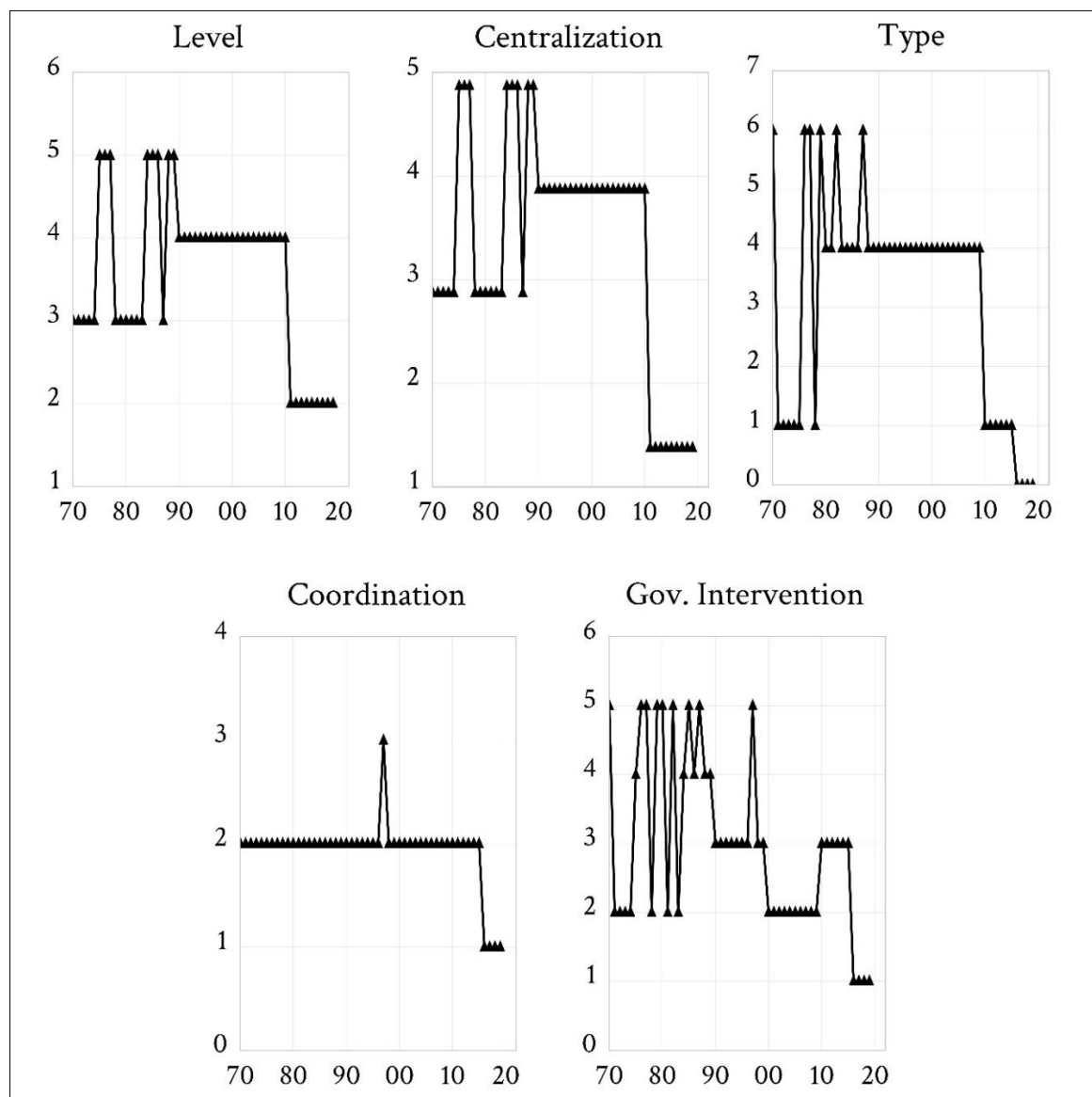
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ONLINE APPENDIX

Wage-Setting Centralization and Government Intervention Variables

Figure A1: Wage-Setting Centralization and Government Intervention Variables, 1970-2019



Source: OECD & AIAS 2025)

Descriptive Statistics

Table A1: Descriptive Statistics & Unit Root Tests

	Mean	Median	Max	Min	Std. Dev.	Obs	ADF (Levels)	ADF (1 st Diff.)
<i>Union Density Rate</i>	26.34	26.2	40.30	13.40	7.29	51	0.99	0.00
<i>Level of Wage Bargaining</i>	3.56	4.00	5.00	2.00	0.97	50	0.12	0.00
<i>Centralization of Collective Bargaining</i>	3.34	3.87	4.87	1.37	1.13	50	0.00	N/A
<i>Type of Wage Setting Coordination</i>	3.20	4.00	6.00	0.00	1.83	50	0.76	0.00
<i>Coordination of Wage Setting</i>	1.94	2.00	3.00	1.00	0.31	50	0.21	0.00
<i>Gov. Intervention in Wage Setting</i>	2.96	3.00	5.00	1.00	1.23	50	0.23	0.00
<i>Trade Openness</i>	46.44	42.29	81.89	23.11	13.35	50	0.96	0.00
<i>Import Penetration</i>	26.84	25.11	41.78	15.16	6.21	50	0.82	0.00
<i>Inflation Rate</i>	9.35	5.15	26.56	-1.74	8.22	50	0.50	0.00
<i>Employment in Services</i>	53.96	55.98	73.06	34.21	13.37	50	0.90	0.00
<i>Democracy Index</i>	83.01	91.43	92.45	3.70	24.74	50	0.00	N/A
<i>Polity2 Score</i>	8.13	10.00	10.00	-7.00	4.59	53	0.00	N/A
<i>Unemployment</i>	11.46	9.78	27.81	1.69	6.62	46	0.07	N/A
<i>Female Labour Force Participation</i>	38.93	39.47	44.70	30.05	4.43	46	0.40	0.00
<i>GDP Growth Rate</i>	1.80	2.06	10.16	-10.15	4.13	50	0.00	N/A

Notes: ADF stands for the Augmented Dickey–Fuller test. Intercept included.

Long-Run Multipliers

To calculate the long-run multipliers, we divide the coefficients of the lagged-level regressors by (minus) the error correction term (β_1) (De Boef & Keele 2008).

Table A2: Long-run Multipliers – Level of Wage Bargaining

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Level_{t-1}</i>	0.78*	1.57***	0.74	1.91**	0.70	1.56***	0.46	0.88*	1.09***	1.20***
<i>Inflation Rate_{t-1}</i>	0.22**	0.14	0.26***	0.45**	0.25**	0.31**	0.21**	0.21**	0.09**	0.09**
<i>Employment in Services_{t-1}</i>	-0.22**	-0.36**	-0.21*	-0.09	-0.25**	-0.25	-0.28**	-0.29**	-0.11**	-0.11**
<i>Trade Openness_{t-1}</i>	-0.11*		-0.11*		-0.10*		-0.05		-0.22	
<i>Import Penetration_{t-1}</i>		-0.07		0.00		-0.06		0.00		-0.00
<i>Democracy Index_{t-1}</i>			-0.00	-0.00*						
<i>Polity Score_{t-1}</i>					-0.05	-0.19				
<i>Unemployment_{t-1}</i>							-0.10	-0.12		
<i>Female LFP_{t-1}</i>									-0.84***	-0.86***

Table A3: Long-run Multipliers – Centralisation of Collective Bargaining

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Centralisation_{t-1}</i>	0.83**	1.67***	0.74*	1.64***	0.70	1.50***	0.55	0.94**	0.96***	1.05***
<i>Inflation Rate_{t-1}</i>	0.22**	-0.07	0.26***	0.45***	0.25**	0.36***	0.21**	0.24**	0.09***	0.09***
<i>Employment in Services_{t-1}</i>	-0.22***	-0.40***	-0.21*	-0.09	-0.25**	-0.14	-0.26**	-0.30**	-0.13***	-0.14***
<i>Trade Openness_{t-1}</i>	-0.11		-0.11		-0.10*		-0.05		-0.02	
<i>Import Penetration_{t-1}</i>		0.00		0.00		-0.07		0.03		-0.00
<i>Democracy Index_{t-1}</i>			-0.00	-0.09**						
<i>Polity Score_{t-1}</i>					-0.05	-0.29				
<i>Unemployment_{t-1}</i>							-0.08	-0.09		
<i>Female LFP_{t-1}</i>									-0.76***	-0.77***

Table A4: Long-run Multipliers – Type of Coordination of Wage Setting

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Type_{t-1}</i>	0.59***	0.76***	0.63***	1.00***	0.62***	1.00***	0.89***	1.30***	0.84***	1.38***
<i>Inflation Rate_{t-1}</i>	0.12***	0.05	0.16***	0.17***	0.15***	0.17***	0.19***	0.27***	0.31***	0.42***
<i>Employment in Services_{t-1}</i>	-0.27***	-0.34***	-0.24***	-0.23***	-0.23***	-0.22***	-0.22***	-0.21***	-0.16*	-0.08
<i>Trade Openness_{t-1}</i>	-0.12***		-0.13***		-0.13***		-0.08***		-0.13***	
<i>Import Penetration_{t-1}</i>		-0.20***		-0.17**		-0.19**		-0.06		-0.19*
<i>Democracy Index_{t-1}</i>			-0.03	-0.03*						
<i>Polity Score_{t-1}</i>					-0.10	-0.22**				
<i>Unemployment_{t-1}</i>							0.03	0.03		
<i>Female LFP_{t-1}</i>									0.06	0.35

Table A6: Long-run Multipliers – Government Intervention

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Gov. Intervention_{t-1}</i>	-2.00***	N/A	-1.50***	-3.11***	-1.20***	-2.42***	-0.38	0.21	-0.55	N/A
<i>Inflation Rate_{t-1}</i>	0.56***	N/A	0.22***	0.44***	0.20**	0.33**	0.16**	0.16**	0.24***	N/A
<i>Employment in Services_{t-1}</i>	-0.00	N/A	-0.28***	-0.22	-0.30***	-0.33*	-0.31***	-0.29**	-0.24**	N/A
<i>Trade Openness_{t-1}</i>	-0.22**		-0.22***		-0.20***		-0.11**		-0.14***	
<i>Import Penetration_{t-1}</i>		N/A		-0.44		-0.33		0.00		N/A
<i>Democracy Index_{t-1}</i>			0.06	0.00						
<i>Polity Score_{t-1}</i>					0.20*	0.33				
<i>Unemployment_{t-1}</i>							-0.11	-0.24***		
<i>Female LFP_{t-1}</i>									-0.17	N/A

Table A5: Long-run Multipliers – Coordination of Wage Setting

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Coordination_{t-1}</i>	-0.88	2.00	-0.45	2.90	-0.32	2.50	2.13***	2.55***	1.83***	3.31***
<i>Inflation Rate_{t-1}</i>	0.25***	0.30*	0.20**	0.40**	0.18**	0.33*	0.17***	0.23***	0.13***	0.31***
<i>Employment in Services_{t-1}</i>	-0.13	-0.30	-0.25*	-0.20	-0.23**	-0.25	-0.30***	-0.28***	-0.22***	-0.19***
<i>Trade Openness_{t-1}</i>	-0.19***		-0.20***		-0.18***		-0.02		-0.09***	
<i>Import Penetration_{t-1}</i>		-0.10		0.00		-0.00		0.05		0.03
<i>Democracy Index_{t-1}</i>			0.00	-0.10						
<i>Polity Score_{t-1}</i>					0.05	-0.17				
<i>Unemployment_{t-1}</i>							-0.15***	-0.20***		
<i>Female LFP_{t-1}</i>									-0.44***	-0.33

Robustness Checks

As an additional robustness check, we use the variable *Right of Collective Bargaining* from the OECD & AIAS (2025). This variable is measured separately for the government and the market sector, since collective bargaining processes are typically separate. In both cases the variable takes values ranging from zero to three. A value of three signifies that the right of association or collective bargaining is fully permitted and exercised without any restrictions; two suggests minor restrictions; one denotes major restrictions; and zero indicates the absence of this right.

Table A7: Drivers of Union Density in Greece, 1970-2019 – Right to Collective Bargaining (Government)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>LDV</i>	-0.14***	-0.11***	-0.20***	-0.14***	-0.20***	-0.14***	-0.42***	-0.42***	-0.36***	-0.00
<i>RCB (Gov. Sector)_{t-1}</i>	0.65**	0.85***	0.74***	0.93***	0.71**	0.92***	0.99**	1.04***	1.12**	0.05**
<i>Inflation Rate_{t-1}</i>	0.03**	0.02*	0.04**	0.03**	0.04**	0.03**	0.06*	0.05***	0.08***	0.00**
<i>Employment in Services_{t-1}</i>	-0.06***	-0.07***	-0.09***	-0.08***	-0.09***	-0.08**	-0.18***	-0.21***	-0.18**	0.00
<i>Trade Openness_{t-1}</i>	-0.01		-0.02		-0.02		-0.00		-0.02	
<i>Import Penetration_{t-1}</i>		0.01		0.01		0.01		0.06**		0.00
<i>Democracy Index_{t-1}</i>			0.00	-0.00						
<i>Polity Score_{t-1}</i>					0.00	-0.01				
<i>Unemployment_{t-1}</i>							-0.07***	-0.07***		
<i>Female LFP_{t-1}</i>									-0.07	-0.00
<i>Adjusted R²</i>	0.90	0.90	0.92	0.91	0.92	0.91	0.83	0.93	0.80	0.99
<i>Observations</i>	48	48	48	48	48	48	42	42	42	42

Notes: *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. The dependent variable is the union density rate in first differences. *LDV* is the lagged dependent variable. Constant terms and short-run (first-differenced) coefficients are included but not reported.

Table A8: Drivers of Union Density in Greece, 1970-2019 – Right to Collective Bargaining (Market)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>LDV</i>	-0.21***	-0.20***	-0.20***	-0.18***	-0.21***	-0.19***	-0.31***	-0.29***	-0.26***	-0.27***
<i>RCB (Market Sector)_{t-1}</i>	0.42***	0.52***	0.44***	0.53***	0.43***	0.54***	1.19***	1.12***	0.89***	0.88***
<i>Inflation Rate_{t-1}</i>	0.03**	0.02*	0.05***	0.05***	0.06***	0.05***	0.09***	0.09***	0.12***	0.12***
<i>Employment in Services_{t-1}</i>	-0.08***	-0.09***	-0.06***	-0.06***	-0.06***	-0.06***	-0.14***	-0.14***	-0.05	-0.07**
<i>Trade Openness_{t-1}</i>	-0.01		-0.01		-0.02		0.02		0.00	
<i>Import Penetration_{t-1}</i>		-0.01		-0.01		-0.01		0.05*		0.02
<i>Democracy Index_{t-1}</i>			-0.01**	-0.01***						
<i>Polity Score_{t-1}</i>					-0.04*	-0.06**				
<i>Unemployment_{t-1}</i>							0.02	0.03		
<i>Female LFP_{t-1}</i>									-0.03	-0.03
<i>Adjusted R²</i>	0.90	0.89	0.93	0.92	0.92	0.92	0.90	0.91	0.91	0.90
<i>Observations</i>	48	48	48	48	48	48	42	42	42	42

Notes: *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. The dependent variable is the union density rate in first differences. *LDV* is the lagged dependent variable. Constant terms and short-run (first-differenced) coefficients are included but not reported.

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