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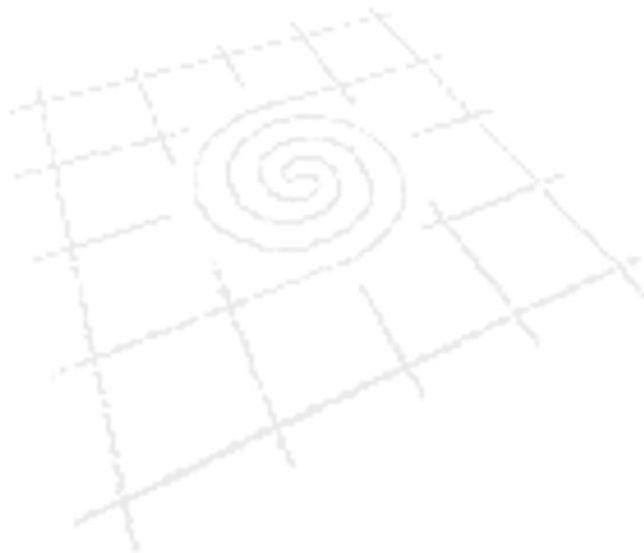
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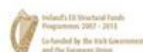


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# **Labour's declining share of national income in Ireland and Denmark: similar trends, different dynamics**

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## **ABSTRACT**

There can be few questions more fundamental to political economy than the share of national income that goes to capital and labour. The central organising concept of a division of factor shares between capital, labour and rent has long featured as an axiom of classical political economy in its derivations of essential heuristics of productive activity. Cross-national studies of income inequality, and of domestic labour market and macro-structural change have failed to adequately account for the variable distribution of national product between labour and capital however, as an essential intermediary between personal income, and national economic activity. Labour's share of income has declined almost universally among advanced capitalist economies under the apparent combined influences of globalisation, sectoral shifts in national employment, and the entrenchment of neoliberal policy regimes. Existing research into factor share distributions has failed to capture crucial differences in variability between countries however, differences which challenge existing stylised narratives emphasising stable compensation rates, which call for a case-sensitive orientation to the manner in which heterogeneous configurations of state and labour market institutions mediate the distribution of returns to labour and capital.

This paper presents a contextualised, case-centered approach to the comparative analysis of the dynamics of labours' share of national income, based on parallel time series analyses of institutional and structural covariates in Ireland and Denmark – cases exemplary of the influential 'varieties of capitalism' and 'worlds of welfare capitalism' heuristics. The results of a set of time series models show that the institutional configurations defined by the interaction of national economic composition, levels of unionisation, globalisation, labour market change and financialisation, construct evolving national contexts of institutional complementarity and conflict, which in turn mediate the dynamics of the distribution of returns to labour and capital. Consequently, observed cross-European declines in aggregate labour shares must be understood both in terms of an historical complexity which transcends the limitations of the conventional typologies of comparative political economy, and in a manner which confronts the heuristics of macro-economics, which emphasise constant returns to scale.

## 1. Labour, capital and the organisation of the national economy – the ‘stylised facts’ of economic growth<sup>1</sup>

Within cross-national research, a number of influential heuristics have dominated the manner in which comparativists have conceptualised the essential character of national economies, and the mechanisms invoked in order to account for similarities and differences across countries. The core binary of the influential ‘varieties of capitalism’ framework (VOC), posits two dominant forms of organisation amongst contemporary capitalist economies; *coordinated market economies* (CME’s), in which government and state institutions play a central guiding role, and *liberal market economies* (LME’s) in which the organisation of labour and dynamics of growth are mediated primarily through markets (Hall and Soskice 2001). In the VOC approach, firms take centre stage as units whose aggregate interactions are conceptualised as producing manifest economic and structural outcomes. Accordingly, this ‘relational’ view assumes that as firms interact across various spheres and institutional contexts of the political economy, their respective capacities to successfully coordinate with other economic actors constitute the central mechanism governing comparative advantage. Outcomes within liberal market economies are thus viewed as dependent on conventional mechanisms of market signification; conversely, coordinated economies are characterised by strategic interactions, the outcomes of which depend on the capacities of their institutional contexts to effectively facilitate, and mediate firm interaction (Hall and Gingerich 2004: 8). Furthermore, according to the VOC approach, no understanding of manifest economic outcomes may be reached without considering the embeddedness of economic action within social structures and contexts, and its mediation through institutional configurations (Jackson and Deeg 2006: 11). Hence, this typology sensitises us to the role of institutions, as regularised sets of practices such as legal conventions, education systems, financial systems, modes of governance, and industrial relations networks, in the structuring of economic outcomes (Hall and Thalen 2011: 2).

Other prominent frameworks have also sought to impose conceptual order on the manifest complexities of national economies in terms of their dominant modes of welfare provision, albeit to the detriment of adequately integrating the spheres of production and policy. In their examination of approaches to the study of the relationship between political economy and welfare provision, Ebbinghaus and Manow (2001) have emphasised a particular lack of discussion on the relationship between production and social protection, as represented by proponents of the VOC approach (Hall and Soskice 2001), and Esping-Andersen’s influential typology of national welfare provision regimes (Esping-Andersen 1990). Accordingly, both approaches purportedly suffer from an inability to examine interactions between the institutions of modern capitalism, labour market dynamics, and state welfare policies. Such interactions manifest profoundly in the realms of industrial relations, production and employment regimes, and modes of corporate finance, where conditions of labour and welfare provision are shaped by the national character of wage bargaining, the social organisation of production, and the manner in which firms engage with financial markets (Ebbinghaus and Manow 2001: 12-13)<sup>2</sup>.

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<sup>1</sup> Note: where appendix graphs are cited in text, abbreviations of the following form are used: ax3, 3 (appendix 3, graph 3); ax4,7 (appendix 4, graphs 7).

<sup>2</sup> Despite their manifest shortcomings however, these devices point toward a number of key axes of differentiation in national economic character, which capture a number of concrete dimensions critical to

Less well addressed in comparative literature is a consideration of the manner in which the institutional configurations described by these influential heuristics define an evolving context of national institutional complementarity and conflict, which in turn mediates the distributional dynamics of returns to labour and capital. The central organising concept of a division of factor shares between capital and labour has long featured as an axiom of classical political economy in its derivations of essential heuristics of productive activity (Atkinson 2009; Glyn 2006). The contemporary applicability of such a compartmentalised division of productive returns is less certain however. As a generalised social formation of production, consumption, and institutional regulation, Fordism described a regime of growth-sustaining collective bargaining between capital and labour, providing a hedge against perturbation, and ensuring a consistent phase of post-war economic growth (Thompson 2003). The subsequent fragmentation of Fordism, both as a concrete social formation and coherent ideal-type under the competitive pressures engendered by globalisation and inter-firm competition, has produced both a heterogeneous conceptual terrain for comparative political economists, and significantly undercut the notion of a clear compartmentalisation of the factors of labour and capital. In Ireland, the 1990's saw the growth of profit sharing and employee share ownership initiatives under the encouragement of the social partners, whereby 11% of Irish workplaces in 1997 reported participation in employee share ownership schemes (Cahill 2000). Irish interest groups representing business and labour, such as IBEC and ICTU, have since lobbied extensively for the enactment of tax conditions favourable to the expansion of profit sharing initiatives (D'art and Turner 2006), and the expansion of the private equity pensions industry has served to further entwine labour's returns with capital markets, exposing it to sources of systemic risk, and further problematising discrete distinctions between the realms of capital and labour (Srinivas, Whitehouse and Yermo 2000).

Notwithstanding the conceptual issues engendered by such changes, the concept of *labour share* speaks to a more fundamental relationship between capital and labour, insofar as it offers a crucial link between individual income, and productive activity. In this sense, it unites questions of the organisational characteristics and institutional configurations of national economies, with those of the equity of returns to labour under expanding productivity, profitability, and changes in the organisation of work (Atkinson 2009). Therefore, although attention has been paid to phenomena such as inter-sectoral wage differentials, which have variously been modelled as a function of factors such as relative human capital stock, length of tenure, and specific characteristics of sectoral labour processes (Gannon and Nolan 2004), the concept of labour share permits a further degree of abstraction to the level of the national economy, wherein its historical variability calls for explanation in terms of a combination of institutional characteristics (i.e. rates of unionisation, government ideology), conditions of the labour market (i.e. net migration and unemployment rates), and properties of the macro-economy such as its sectoral composition, levels of FDI, and trade openness - elements which have seldom been afforded simultaneous attention within existing literature on labour share, and rarely with sufficient emphasis on the analysis of single cases.

Beyond a relationship between socio-economic configuration and factor share variability, the distribution of income between labour and capital further acts as an intermediary mechanism between national economic product and income inequality. Panel data analyses performed by Daudey and Garcia-Penalosa (2005), have demonstrated the significant negative effect of increased labour share on GINI data between 1970 and 1994. Accordingly, as the distribution

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understanding differing dynamics of labour's share of income across countries. These dimensions are given specific attention in section 3.

of capital becomes more unequal relative to that of labour, a corresponding increase in labour's share tends to reduce overall inequalities in personal income, with particularly robust effects notable in developing countries whose growth policies often include FDI-oriented measures favourable to capital growth. Others have emphasised alternative structural mediators between economic product and income equality, such as the growth of financialisation. Controlling for institutional factors, including political partisanship, union strength and wage bargaining structures, Kus (2012) has demonstrated a negative relationship between growth in financialisation (indexed as a combination of stock market trade, pre-tax banking sector income and the extent of securities in bank assets), and GINI income inequality. Accordingly, through a combination of movement away from 'real economy' activities such as manufacturing, declines in union wage premiums under eroding bargaining power, the emergence of shareholder-oriented managerialism, and the growth of top-tier executive pay, the result has been an exacerbation of income inequality across the OECD. More worryingly, Diwan (2001) has demonstrated, through the use of 3-year crisis window dummies, the tendency for labour's share of income to fall drastically during periods of financial crisis. Consequently, these works underscore the significance of exploring factor share distributions not only as an exploratory exercise in comparative model testing, but also in social policy terms, as an essential mechanism mediating the relationship between economic, social and institutional structure, and society-wide distributions of personal income.

Neoclassical economic theory has largely disarmed the question of labour share's historical variability however, through its employment of equilibrium heuristics of factor share distribution. Contemporary macroeconomists thus appear content to consign the question of labour's share of income to production-function models in which labour share equilibrium is assumed by the standard Cobb-Douglas specification, which specifies a constant elasticity of output with respect to capital, and therefore a constancy of relative returns to labour and capital (Zuleta 2012: 91; see also Bentolia and Saint Paul 2003; Gollin 2002; Jones 2003). Recent texts such as Mankew's *Macroeconomics* (2007) emphasise such factor share constancy, by depicting labour's share of income as a constant parameter in the Cobb-Douglas model. In this specification, the ratio of labour income to capital remains at approximately .7 (corroborated by U.S. labour share data from 1960-2006), and variations in rates of productivity cause corresponding, proportional movements in the marginal products of labour and capital (Mankew 2007: 55-58). Within this strand of inquiry, the question of labour shares' potential historical fluctuation is subsumed beneath this heuristic, which emphasises constant returns to scale. Such broad consensus has been punctuated with flashes of criticism however. Robert Solow (1958) offered an early sceptical commentary on the constancy of labour's share of income, drawing attention to the role of relative human capital endowments, and the growth of income within unincorporated enterprises as a source of variability in factor share distribution. Indeed, this latter dimension has now become established as an essential component in the calculation of labour's share of income, insofar as differential rates of self-employment, both between sectors and within sectors over time, must be factored into any calculation of returns to labour. Amid such critical notes, literature beyond the boundaries of core macroeconomics has consistently emphasised the stylised nature of such constancy assumptions embedded within neoclassical growth theory, which mandate; '...that real wages and productivity grow at the same rate, and that the growth rate of output is given by the sum of employment growth...and the growth rate of productivity' (Giammarioli et al 2002: 4; see also Garrido-Ruiz 2005).

Despite the apparent consensus regarding factor share constancy amongst macroeconomists, a growing body of literature has asserted the amenability of factor share modeling to a range of

institutional and structural predictors, such as unemployment, union density, strike activity and leftist national government (Decreuse and Maarek 2008; Kristal 2010; Guscina 2006; Wallace, Leicht and Raffalovich 1999), components of government spending, foreign direct investment, globalisation, trade openness, levels of education, migration and workforce feminisation (Daudey and Decreuse 2006; Harrison 2005; Jaumotte and Tytell 2007; Jayadev 2007), and financial crises, product market, trade and employment regulation (Diwan 2001; Jaumotte and Tytell 2007). These alternative institutional accounts stand in contrast to those which depict labour share variability strictly in terms of macroeconomic parameters such as capital-augmenting technological growth, labour substitution, and changes in the sectoral composition of national economies (Zuleta 2012). Regarding the role of sectoral shifts, Whelan and Lawless (2011: 132) have demonstrated, through the construction of counterfactual series, that despite overall shifts toward sectors of lower labour share within the EU, and variable growth in capital-intensive activities, sectoral shifts toward lower labour share activities account for less than 1% of the decline in labour share between 1980 and 2005.

Others have found stronger sectoral effects, albeit with substantial variations across countries in terms of period-specific, and country-specific effects (Arpaia, Perez and Pichelmann 2009), whilst de Serres et al (2002) have attributed labour share reductions to the growing importance of capital-intensive activities such as financial services with their comparatively lower labour intensity, coupled with shifts in domestic manufacturing toward outsourcing, with consequent wage depression. China is perhaps exemplary of such sectoral effects, recording a drop in its aggregate labour share from 61% in 1990, to 47% in 2007, reflecting the growing importance of lower-share services, combined with substantial reductions in agriculture in sectoral value added (Bai and Qian 2010). These are far from complete accounts however, as Blanchard's simulations of variable elasticities of substitution between capital and labour, and of increases in the gap between real wages and productivity, accounted for between 10% and 40% of long-run labour share variations, suggesting an immanent need for an alternative institutional account capable of capturing these excluded sources of variance (Blanchard 2000 cited in Giammarioli et al 2002: 8).

Clearly, the heterogenous nature of existing research calls for the imposition of conceptual clarity regarding the institutional, macroeconomic and structural drivers of variability in labour's share, and of the mechanisms through which these various parameters exert their influence at the level of the national economy. Arguably, much of this essential micro, and meso-level nuance has been obscured by the methodologies employed by many of the above-cited researchers who have typically employed pooled time-series techniques, in order to exploit the inherent sample-boosting effect of aggregating multiple countries; in this respect, much may be gained by adopting a comparative approach more in line with the case-sensitive orientation of comparative historical research. In pursuit of this objective, we now examine the summary historical trends of labour's share of income across Europe and beyond, before considering the role of a number of key parameters in the generation of labour share fluctuations throughout this time. Given that these parameters (i.e. unionisation, international trade and the composition of employment) manifest in different ways across countries, the following section thus contextualises our comparative methodology which seeks to examine the historical dynamics and covariates of labour share across two small open economies; Ireland, as a liberal market economy which has experienced a drastic decline in its volatile labour share since the 1980's, and Denmark, a coordinated Social Democrat, whose stationary labour share series exhibits a much lower decline over the same period. In doing so, we implicitly seek to challenge the rationale of existing pooled accounts, by exploring possible *divergences* in the manner in which such parameters influence and interact with long-term

labour share dynamics across both economies, and to assess the explanatory utility of existing comparative heuristics, such as they illuminate mechanisms of variation across both contexts.

## **2. Labour's share of income in Europe and beyond: key trends, drivers of variation, and axes of cross-national comparison**

### ***2.1. Trends in global labour share movements since 1960***

The 'stylised' nature of labour share's historical constancy belies considerable variation in observed cross national trends. This discontinuity between macroeconomic performance and the material conditions of labour, as is implied by sidestepping the question of factor share *distribution*, is further underscored by long-term data on the U.S. economy which, despite experiencing substantial growth in per capita GDP between 1990 and 2012, has recorded a stagnation in its labour share, and the greatest increase in its gini income inequality index, relative to other advanced economies<sup>3</sup>. Much critical attention has been directed toward this 'parigmatic ratio' of U.S. labour shares of late, revealing both the instability of sectoral and aggregate labour shares, and a significant lag of labour compensation relative to profit growth (Wallace et al 1999; Young 2010). These alternative narratives thus reconcile observed labour share and real wage stagnation with the historical political economy of the U.S., insofar as the postwar 'capital-labour accord' of adequately compensated, disciplined labour has steadily fragmented under successive waves of neoliberal policy entrenchment since the 1980's (Raffalovich et al 1992). Indeed, the positive effect of collective action on aggregate postwar labour share has reversed during the 'post-accord' period (1981-1992) such that union density and strike activity no longer appear to exert a positive influence on the distribution of factor shares, signalling a defensive shift in union orientation toward job protection in a climate of increasing instability, rather than compensation enhancement (Wallace et al 1992: 284).

In Europe, observed labour share trends are even less reconcilable with the assumption of factor share constancy, and beyond the U.S. (with the exception of Japan), the state of labour's declining share of income across the OECD is no longer in doubt. Figure 1 (below) illustrates aggregate trends across the EU-27, and figure 2 offers a country-level breakdown of those member states for which a complete set of data were available for appropriate adjusted calculations (see section 3 concerning the measurement of labour share). In contrast to the relative stability of the U.S. series, European labour shares exhibit a hump-shaped distribution, with labour's share of income peaking during the early 1980's, before embarking on a sustained, albeit punctuated period of decline as depicted in figure 1. Many accounts have been forwarded of this characteristically European shape echoing those introduced above, such as growth in capital-augmenting technology during the 'I.T. revolution' of the 1980's, and sectoral transitions such as those responsible for China's dramatic decline throughout the 1990's. Guscina's results have largely confirmed this line of argument, finding a positive (labour-augmenting) association between productivity and labour share until 1985, after which labour productivity switches sign to become capital-augmenting (2006: 11). Furthermore, sustained growth in European capital shares – the inverse of labour's share – has been

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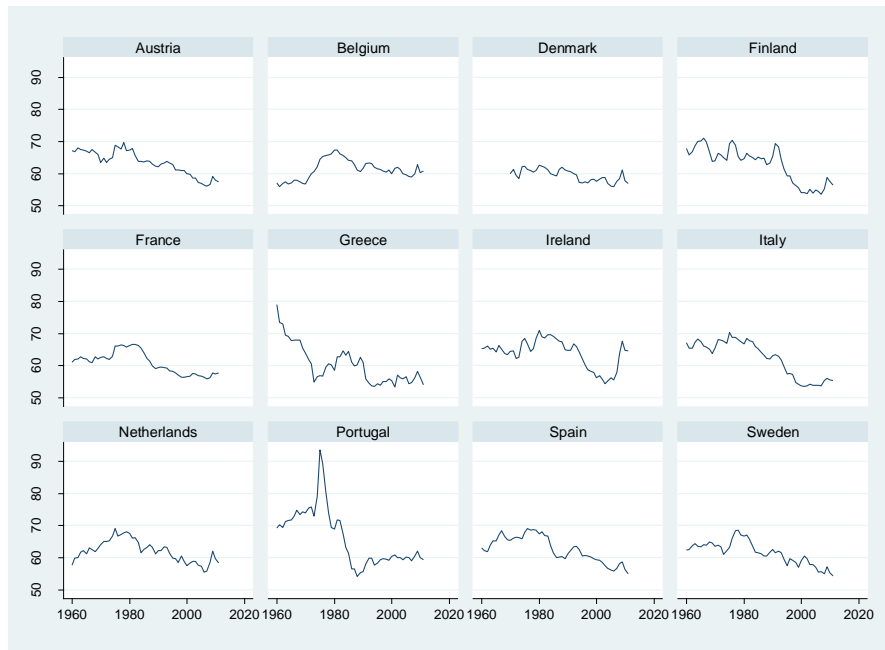
<sup>3</sup> International Labour Organisation (2008). *World of Work Report 2008: Income Inequalities in the Age of Financial Globalization*. Geneva: International Institute for Labour Studies.

accounted for in terms of a range of factors crucial to understanding the economic trajectories of many European states, such as capital account liberalisation, product market deregulation, expansions in low-wage labour supplies, labour market deregulation and bargaining decentralisation (even amongst the highly unionised Ghent countries), and domestic wage and input cost depression through the availability of cheap industrial imports from developing countries (Ellis and Smith 2007; Kristal 2010). Changes in regulatory governance have exerted particular influence on compensation dynamics, insofar as labour market deregulation has generally served to decrease short-term wages, particularly amongst states with strong foreign direct investment (FDI) growth. Concurrent product market deregulation across Europe since the 1990's has in turn exacerbated labour share declines, through falling profitability and a resultant weaker bargaining position for labour (Blanchard and Giavazzi 2003). Within Europe, this has paradoxically occurred against a backdrop of growth in the number of high-skilled workers (European Commission 2007), albeit with a sustained decline in economy-wide union densities amongst many states (Ebbinghaus and Visser 1995; Visser 2006). The evident heterogeneity in labour share dynamics across European member states further calls into question the explanatory utility of essentialised models of change, given that the states depicted in figure 2 exhibit competing levels, fluctuations, and trending directions over time – with Belgium recording moderate increases.



**Figure 1. Pooled unit-mean labour share trends (EU-27), 1960-2011**





**Figure 2. European labour share trends (states with complete adjusted series), 1960-2011**

As previously discussed, many authors have emphasised the capacity of shifts in the composition of national economies toward lower share sectors, to reduce aggregate labour shares, whereby declining labour share levels result from shifts in employment away from labour-intensive sectors such as manufacturing, toward capital-intensive services, such as those of finance and business. By such accounts, and in the context of Europe, falls in labour shares owe less to the effects of firm-level wage moderation under market liberalisation, and more to the growing centrality of low wage share sectors in national output statistics, along with changes in the proportions of self-employed persons within high remuneration sectors (Arpaia, Perez and Pichelmann 2009; De Serres et al 2002). By such accounts, aggregate labour share declines throughout the 1990's reflect a fall in the level of unskilled labour, along with widespread increases in employment, which have outpaced growth in real compensation per worker (Jaumotte and Tytell 2007: 9). Conceptualising labour's share as an indicator of the relative bargaining power of labour, it appears that gains in labour share achieved throughout the 1970's may thus partly be accounted for in terms of collective resistance to wage reduction through strong union bargaining capacities, a perspective which emphasises the ability of subsequent developments alongside sectoral shifts, such as the growth of non-wage compensation and rising self-employment, to depress aggregate labour shares.

It thus appears that consensus on the appropriate combination of factors contributing to the decline of labour's share of income is elusive, although it is clear that some combination of explanatory variables is warranted in order to generate a coherent account of historical factor share dynamics. Bentolia and Saint Paul's (2003) pooled sectoral analysis of labour share movements has emphasised the capacity of factors such as changes in production input costs, and labour adjustment costs along with changes in union bargaining power to edge capital-labour ratios away from a stable, complementary relationship, as mandated by the Cobb-Douglas formulation. According to their analysis (which does not incorporate a measure of unionisation but rather a proxy of 'labor conflict rates'), falling labour shares are mediated partly by the specific character of national and sectoral bargaining processes, although these

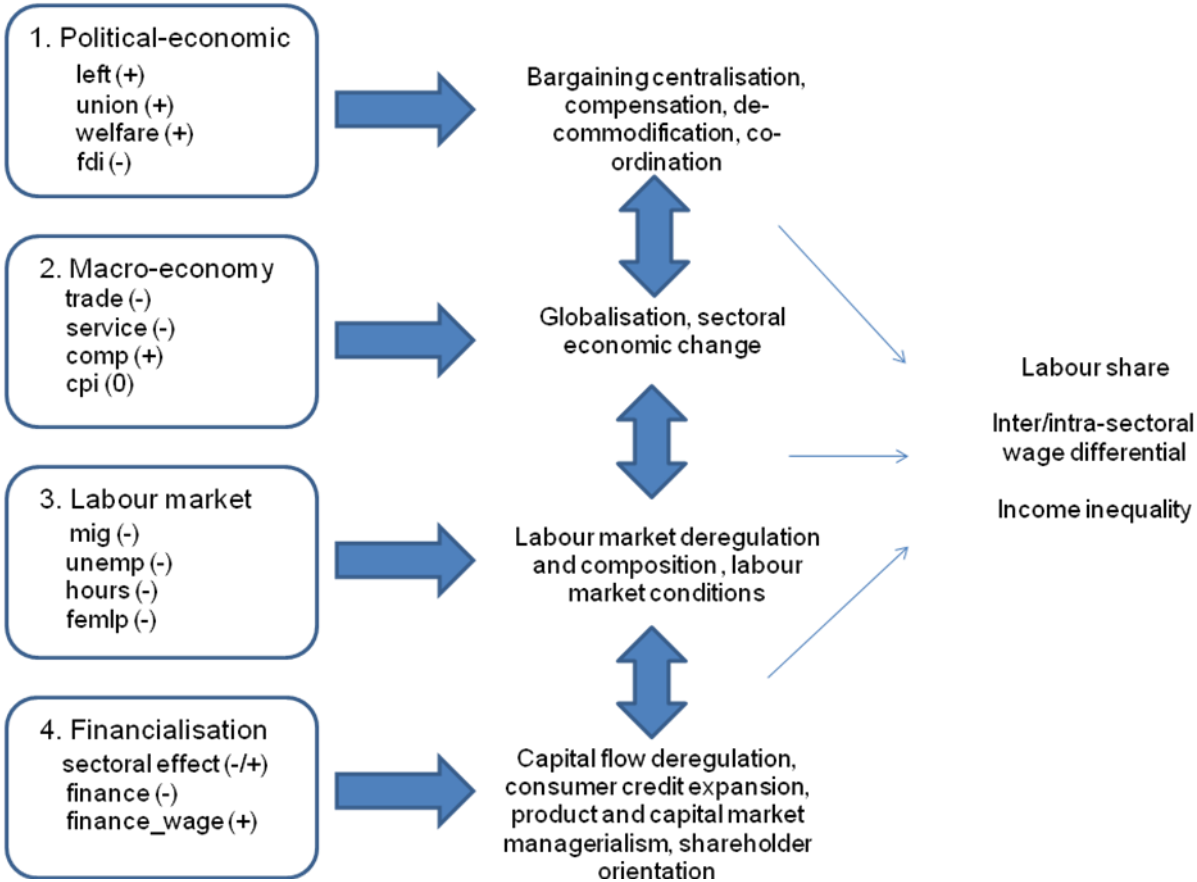
results are not decomposed to sectoral or country level. Similarly, institutional complementarities amongst firms, individuals, and the organisation of work come into play around the question of labour adjustment costs, insofar as the presence of greater recruitment and discharge costs, or legal requirements of severance pay provision on the part of employers, serve to drive factor shares from their equilibrium ratios (Ellis and Smith 2007) – an outcome whose cross-national variation is doubtless dependent on the sectoral composition and specific character of the national economy, including the skill-intensity profile of its labour force, and national modes of education and training provision. Consequently, the presence of substantial variability within Europe, in terms of labour and product market governance regimes, suggests that some attention must be paid to the critical dimensions along which states may be differentiated, not only in terms of their productive activities, but also in term of their regulatory profiles, and broader institutional configurations (Balchard and Giavazzi 2003; Hall and Gingerich 2004).

## ***2.2. Toward a holistic conceptual model of labour share's historical dynamics and drivers of variation***

To date, little attempt has been made to forward a coherent conceptual model of labour share movements which adequately integrates the complex range of determinants and parameters introduced throughout this paper. The most comprehensive attempt to integrate these dimensions, with a conceptualisation of labour share as the relative bargaining capacity of labour, has come from Tal Kristal (2010). Her model involves decomposing labour's share into its constituents – compensation, employment and productivity – whilst further dividing working class organisational power (i.e. its ability to affect favourable changes in these components), into that of the economic, political and global spheres (Kristal 2010: 738). Although this offers a worthwhile, multilevel bridge between conventional economic and political-economic accounts of labour share variation, it is arguably less suited to the task of localised cross-national comparison. Therefore, although this conceptual model accounts for a variety of dimensions of working class organisational capacity, in light of the substantial and variable transitions experienced by European labour markets over past decades, an alternative model is arguably required, one which is capable of assessing intra-class and intra-sectoral organisational capability, and – especially in the case of small open economies such as Ireland and Denmark - the ability of the 'state-labour-economy nexus' to hedge against market perturbation, and to moderate the distribution of national income between labour and capital. Given that labour share acts as an essential mediator of individual-level income inequality (both of which exhibit significant historical variation across countries), it is essential that any such model be capable of adequately integrating these dimensions and historical dynamics across a range of single-case contexts.

Our alternative model is illustrated below in figure 3. The various dimensions along which we might expect to find coherent relationships to labour's share are partitioned into four essential organisational domains; those of the *political-economic* (1), *macro-economy* (2), *labour market* (3), and *financialisation* (4). Accordingly, this schematic prefigures our forthcoming model specification, by including within each domain a set of key variables, and their expected direction of association with levels of labour share. Furthermore, each domain may be connected to a specific set of dominant narratives, each of which depicts the relationship of these domains to broader national and global socio-economic processes. Finally, each of these domains, although rendered analytically distinct for the purposes of modeling, may be viewed

as continually interacting with each other across national contexts, and over time within countries - interactions which are well articulated within existing literatures on varieties of capitalism, and worlds of welfare capitalism. Although these four dimensions are modelled with the same techniques and using similar data structures, they speak to a number of hierarchical levels from the micro to the global, and their interpretation calls for the imposition of a range of narratives of institutional change beyond those currently provided by mainstream comparative-historical literatures, which emphasise an understanding of agent-level interactions in the production of aggregate dynamics of change (Mahoney and Thelen 2010; Streeck and Thelen 2005). The outcomes of these confluences of national configurational complexity, and global influence, captured by these four organisational domains, are the share of income accruing to labour, the extent of inter-sectoral wage differentials, and aggregate income inequality.



**Figure 3. A conceptual model of sources of labour share variation**

**1. Political-economic**

Unionisation and union density (**union**) feature as common predictors of labour share variation within much existing literature (Daudey and Decreuse 2006; Guscina2006; Jaumotte and Tytell 20007; Jayadev 2007; Kristal 2010; Wallace et al 1999). The hypothesised effects of unionisation manifest through a variety of direct and indirect mechanisms. Classically

unionisation, as a measure of the organisational capacity of labour, serves to increase labour's bargaining power both through the imminent threat of strike action (with potential losses in output for capital), and by representing members' interests in wage bargaining processes. Indirectly, higher union densities coupled with centralised systems of wage negotiation, tend to depress inter and intra-sectoral wage differentials by setting sectoral level baseline wage rates. Similarly, in states with lower union densities, unionisation may establish a union wage premium amongst workers with similar qualifications, although this effect should be more pronounced in states with lower baseline union densities, such that union membership confers competitive advantages within sectors with adequate, and influential union coverage. Such relationships are far from uniform however, and the specific effect of unionisation on labour share depends intimately upon the institutional architecture of domestic industrial relations systems, and the manner in which wage bargaining is conducted; either through centralised systems of cross-sectoral wage negotiation, or through decentralised systems where wage and remuneration bargaining takes place primarily at firm level. Under decentralised bargaining, inter-firm and inter-sectoral wage differentials tend to be broader, executive pay growth tends to be greater, whilst an increased exposure of wage determination to market forces tends to weaken the bargaining power of low-wage labour, resulting in greater long-term reductions in labour share (Rueda and Pontusson 2000). Regardless of such variations in cross-national effect size however, the direction of association between unionisation and labour share should be positive, a conclusion which is largely borne out by existing research (see appendix 6).

Political partisanship (**left**) is crucial to the bargaining power of labour, insofar as national legislatures with predominantly leftist members should tend to enact legislation, and adopt policy positions more favourable to labour's interests. Typically, leftist cabinets can augment labour's share of income by enacting legislation around pay equalisation or minimum wage setting, thus insulating low-wage labour from competitive market pressures and wage depression in times of high unemployment. Amongst the European Social Democrats, governing parties have often enacted measures aimed at income redistribution through progressive taxation, and the use of egalitarian social transfers (Kristal 2010: 739), whilst greater Democrat presence in the U.S. houses of congress has been found to exert a negative effect on top 1% income shares (Volscho and Kelly 2012). The favourable orientation of European leftist parties toward the interests of labour is further underscored in light of recent adjustments in employment protection measures and flexicurity enacted throughout the financial crisis, during which successive centre-right Irish administrations have frozen vocational training funding, reduced levels of welfare to new young claimants, and adopted a more coercive approach to welfare provision (Heyes 2013: 5-6). Similarly, their conservative U.K. counterparts have eliminated the 'Young Person's Guarantee' initiative and the 'Educational Maintenance Allowance' (aimed primarily at low income families), whilst extending the reach of means testing further than their Labour predecessors (ibid: 7). Consequently, the effect of greater leftist presence in national administrations should exert a positive influence on labour share, with the caveat that such an outcome depends on the manner in which national governments are formed. In cases such as Ireland, parties of the left have typically entered government as minority coalition partners, significantly diluting their capacity to enact policies favourable to redistribution.

There exists a substantial body of literature addressing the welfare provision strategies (**welfare**) of small open economies. According to Katzenstein's elaboration of the 'compensation hypothesis', small states typically complement their liberal orientations with parallel domestic measures aimed at offsetting the exposure to market volatility engendered by increased openness (1985: 47). Such measures have included the promotion of strong

public sector employment growth, the provision of vocational training to facilitate up-skilling, domestic wage restraint through centralised bargaining, and increased provision of welfare and social transfers. Increased openness presents a number of challenges for labour within small open economies, such as the undercutting of domestic input costs through imports from low wage countries, and a reduction in investor exit costs under the effects of globalisation, and increased capital mobility - which in turn expose labourers to volatile global competition, placing them in a weaker bargaining position relative to mobile capital (Burgoon 2001). Welfare functions not only as a reactive safety or hedge against perturbation however, as others have drawn attention to the manner in which various strategies of welfare provision shape the productive capacities and competitive profiles of individual states, outcomes which are shown to vary profoundly along the 'liberal-coordinated' continuum (Bussemeyer 2009). Furthermore, the tendency to focus on quantitative determinants of welfare component spending in existing studies has arguably shifted attention away from the political-economic dimension of welfare provision, or the institutional-political determinants of national welfare strategies (Katzenstein 2003). In this sense, welfare spending resides logically within the political-economic domain of our model, insofar as its included covariates are consistent with existing theory, specifying as they do an interaction between the characteristics of state and economy. The effects of welfare spending may thus be expected to influence labour share through a number of channels, such as protecting against wage depression in countries with low employment turnover and salary-indexed unemployment compensation (which in turn sets a reservation wage), or by facilitating up-skilling and continued workforce participation through active labour market policy spending (ALMP); in both instances, the hypothesised relationship suggests a positive effect.

Increased levels of foreign direct investment (**fdi**) have characterised the development trajectories of many globalising worldwide economies in recent decades; within existing research, the specific effect of net FDI inflows has typically been recorded as negative (Decreuse and Maarek 2008; Harrison 2005; Hutchinson and Persyn 2009). Worldwide, the effect of increased capital account openness has been a consolidation of capital's bargaining power relative to labour, insofar as mobile capital generally enjoys lower relocation costs relative to labour, and is therefore capable of more easily seeking out greater returns from beyond its host economy (Harrison 2005: 4). The growth of globalised, networked firms embedded within complex trans-national production chains further serves to augment firm flexibility, effects which have been especially pronounced in developed economies (Jayadev 2007: 3-4). This increased openness interacts with other dimensions of the political-economic organisational domain, insofar as increased capital mobility serves to expose labour to external sources of economic volatility, as implied by the compensation hypothesis (ibid: 7). Alternatively, globalisation may affect labour's share indirectly, by placing a greater proportion of the overall tax burden on labour, given that many small open economies – particularly Ireland – have pursued regimes of light-touch regulation with low rates of capital gains and corporate tax. Consequently, a variable measuring net FDI inflow should act as a proxy for the ease with which capital is capable of moving within and from a host economy, indicating its comparative bargaining power relative to labour, whose relocation costs tend to be greater (Harrison 2005).

Our analysis treats FDI in a number of complementary manners. In the case of small open economies, levels of FDI relate to the classical question of capital-augmenting technological development, in which case the effects of technologically-intensive multinational FDI should present as negative, despite expected multinational wage premiums (Decreuse and Maarek 2008: 10-11). Net FDI inflow also presents a computational issue, insofar as multinational

transfer pricing activities, which vary profoundly by country and by sector (Barry 2005), may result in higher levels of aggregate gross value added, a greater denominator in the labour share equation, and a consequent depression of real labour share estimates (these effects are controlled for in our estimation of labour share by adopting a GNI rather than GDP calculation). Furthermore, despite increased inter-firm labour market competition, multinationals generally enjoy greater levels of productivity, and lower wage demands relative to local competitors in frictional labour markets. In such instances, productivity tends to outstrip real wage increases, resulting in a depression of labour share (Decreuse and Maarek 2008: 24). Finally, multinationals have often engaged in union avoidance strategies such as ‘double breasting’ (Lamare et al 2009), or outright non-recognition (Gunnigle et al 2002), such that in countries with comparatively lower levels of union density, the effect of FDI-induced wage premiums is likely to be muted, yielding a negative effect on labour share due to stunted bargaining power. This effect should in turn present as less significant amongst states with higher levels of unionisation, and bargaining strategies of broader coverage which protect against the emergence of inter-sectoral wage differentials, and establish consistent union wage premiums.

## *2. Macro-economy*

The collection of variables included within the macro-economy sphere capture a number of related dimensions of structural and macroeconomic change, which feature as classical drivers of variation in the components of labour share, and which represent competing sectoral interests. Together, these variables are characteristic of socio-economic changes in the cases which form the basis of the analytical component of this paper. **Trade** is undoubtedly one of the key structural indicators of macro-economic change in recent decades, as evidenced by the prolific literatures within the social sciences on globalisation, and post-industrial transition. It also presents substantial empirical and theoretical associations with a number of variables from the political-economic domain such as **fdi** intensity, and the political-economic configurations of national economies as captured by **left**, **union** and **welfare**. As a measure of net global trade participation (goods and services imports and exports as a % of global trade), this dimension captures the influence of competitive external pressures engendered through the availability of cheap global imports, as well as a number of related mechanisms introduced above - such as downward wage pressures within incumbent firms subject to international competition in terms of both wages and factor costs, or within those firms consisting primarily of lower skilled labour - under the effects of globalisation and labour market deregulation. Others have detected such effects in cross-national models, in the form of a gradual adjustment of capital-labour ratios to capital-augmenting technological growth, particularly since the 1980’s (Guscina 2006). Similarly, we should expect the effects of global trade participation to track and interact with some of those considered above, such as capital flow liberalisation, and product market deregulation, which in turn facilitate the movement of greater volumes of goods and services. As a result, the expected direction of association with labour’s share of income is negative, despite hypothesised gains in productivity and employment wrought through increased trade participation and openness.

The transition to majority employment in services (**service**) constitutes one of the central narratives of socioeconomic change in recent decades, and one of the hallmarks of post-industrialism within contemporary social theory. Literature surrounding the compensation hypothesis has long specified public service employment growth as one of the key channels

through which small open states exert control over their domestic economies, thereby avoiding over-dependence on external employment sources by effectively nationalising substantial portions of their expenditure (Katzenstein 1985: 54). Public employment also tends to compress wage differentials due to the high-skill demands of many of its activities, whilst also favouring greater levels of unionisation (Rueda and Pontusson 2000). Public employment is not the only feature of service sector growth however; in the case of Ireland, industrial development led to parallel employment growth in personal services, retail and sales, transport, financial services, and business related services (Ó' Riain 2000 and own calculations). Ireland's combined service sector employment grew from 57% in 1985 to 75% in 2010, reflecting a curious feature of Ireland's development, namely its transition to a service economy without an associated interim period of industrialisation typical of other developed economies. Similarly, Denmark's service sector employment grew from 65% in 1985, to 77% in 2010, although its earlier public employment consolidation likely accounts for this discrepancy in base services employment levels. The overall impression is not one of uniform, distributed gains for labour through competitive up-skilling however. Increased employment in services tends to direct union densities away from their 'core' memberships of industrial employees, whilst certain sub-sectors such as retail, have exhibited low levels of union engagement, and a proliferation of casual employment, rendering coordinated bargaining beyond firm level decidedly difficult (Hardimann et al 2008). Conversely, the growth of executive pay in areas such as financial services, where remuneration often consisted of substantial bonuses and stock options (Atkinson 2009; Ó' Riain 2012), has resulted in an exacerbation of intra-sectoral pay differentials and overall wage inequality, and an inflation of capital output in activities such as finance which reside beyond those of the 'real economy'. As a result, increased service employment, in combination with a range of other factors such as casualisation, decreased unionisation, labour force feminisation and immigration, should exert a negative influence both on overall wage inequality, and on labour's share of income.

In contrast to the comparative insecurity of low paid service sector employment, a crucial feature of both Ireland and Denmark's economic growth narratives throughout previous decades has been the growing importance of high-tech activities (**comp**), such as the software sector in Ireland, and Danish biotechnology. The skill-intensity profile of much of this work has typically engendered upward wage pressures in technology-intensive sectors, imposing a wage premium on highly skilled, mobile workers (Hardimann 2008). The effect of education and skill-intensity on labour share has previously been subject to favourable analyses, which have found a positive association between higher education and labour share (Daudey and Decreuse 2006). This is largely due to the greater adaptability skills conferred through higher education, relative to those of lower levels of qualification, resulting in a greater wage premium per unit labour input, and a partial reduction of employer control over wage setting (ibid: 25). The specific nature of this adaptability has been elaborated in the Irish context by Ó' Riain (2000), who has observed that such flexible, skilled labour was typically complemented with extensive, informal employee networking, and a wage premium which often exceeded the boundaries of typical national wage agreements. Furthermore, the short tenure of much highly-skilled software work has led to an individualistic model of high employee turnover, which intensifies wage inflation amongst employers seeking to retain skilled individuals (Ó' Riain 2000: 182). These conditions, particularly during periods of growth, have led to tensions between workers restrained by national wage agreements, and also to the proliferation of low-wage service work as higher-skilled occupations began to displace domestic low-wage employment, leading to a shortfall in service sector employment. Consequently, growth in the intensity of service export activity in these sectors should exert a

positive influence on labour share by boosting employee compensation in line with productivity. This polarisation of low and high-skilled pursuits has recently been affirmed by the ILO (2013), who have observed a 10% fall in the labour share of unskilled European workers, and an increase of up to 8% for high-skilled workers.

Finally, a measure of change in the consumer price index (**cpi**) is included both for theoretical and statistical purposes. Including a measure of inflation or GDP growth has become commonplace in time series modeling of labour share, in order to control for the potential presence of business cycle effects in the generation of labour share fluctuations; the coefficient on this variable acting as an indicator of cyclical or counter-cyclical tendencies in labour share movement (Harrison 2005: 26). At a more practical level, other have tested the 'wage-lag' hypothesis with consumer price index data in the context of labour share modeling, a hypothesis which suggests that '...compensation lags behind productivity over the business cycle...change in total compensation lags behind change in net revenue in response to cyclical variations in prices and output...therefore labor's income share decreases with increases in inflation rates and output growth' (Raffalovich et al 1992: 255). This prediction is closely related to the presence of crises of effective demand, in which accumulated produce leads to falling profit rates (ibid: 245), suggesting that the direction of association between inflation and labour share should vary across contexts with differing demand and compensation dynamics. Diwan (2001) has suggested another mechanism of association between inflation as a 'financial crisis' measure of depleted domestic currency stocks, although such an interpretation would arguably call for a parallel control on the moderating effects of domestic responses. In an exercise in the predictive capacities of labour share, Batini et al (2000) discovered that growth in U.K. labour share from 1995 did not result in increased inflation, due to compensation from falling import prices. Inclusion of the **cpi** parameter thus controls for the potential presence of this range of cyclical effects, which should be expected within a model containing measures both of structural labour market adjustment, and international trade exposure.

### *3. Labour market*

In addition to specifying two core models of political-economic and macroeconomic sources of variation, we include a model to examine the effects of labour market change, through a number of theoretically relevant predictors capturing core trends in the composition of the workforce, and working conditions. In light of the trends associated with increased international trade, labour market deregulation and globalisation, coupled with trends toward domestic workforce up-skilling and expanded service sector employment, migration (**mig**) has played a key role within many European states in filling the shortfall within low-skilled occupations. Similarly, female labour force participation (**femlp**), which has expanded significantly in recent decades across both Ireland and Denmark, has typically been associated with accession to lower paid, lower-skilled jobs, with lower levels of union engagement often due to the part-time nature of such occupations (Visser 2006). The effect of both variables is not necessarily linear over time however; although female accession has typically been associated with wage depression and downward wage pressure within lower-skilled occupations, greater levels of participation have tended to narrow the skill gap between genders, particularly in states with high public sector employment which has facilitated the movement of females into more secure forms of employment (Rueda and Pontusson 2000). Regarding the experience of work, average working hours have fallen consistently across



many states over previous decades, reflecting not only union capacity for negotiation around working conditions beyond compensation, but also the centralisation of time-setting under Europe-wide conventions, albeit with considerable variation across states in terms of statutory limitations, collective agreements on working week duration, and overtime (Rubery et al 1998). The inclusion of average hours worked per year (**hours**) thus adds a further dimension to the productivity-wage lag story, insofar as the capacity to extract increased returns per unit input reflects not only a change in employee work intensity, but the application of capital-augmenting technology which has increased output relative to per-capita working time reductions. Working time regimes have not converged on a homogeneous model across Europe however, as Ciccia and Ó' Riain's (2013) latent class analysis of working time arrangements has shown considerable variation in the presence of standard, flexible, fragmented and rigid models of working time across Europe. According to their results, the regime of standard working time – in which working schedules are typically rigid, fixed by employers, and in which clear boundaries between work and private life are set – accounts for 35% of the overall distribution of working time within Ireland, and 40% in Denmark. Furthermore within countries, clear divisions have emerged along gender and class lines concerning the distribution of working hours, and work-life balance. As a result, working time trends represent not merely a reduction of net working hours within 'standard working week' arrangements, but an increase of fragmentation and flexibilisation around working time (Rubery et al 1998: 99). The evolution of working hours thus captures the emergence of heterogeneous working time arrangements across member states, as a critical component of overall labour market change.

Similarly, the effects of unemployment (**unemp**) should present as contingent on the nature of specific economies. Much commentary abounds on the role of skills as a differentiating axis within the varieties of capitalism literature, according to which various states residing along the liberal-coordinated continuum tend to favour the acquisition and provision of more, or less specific skills through education (Ebbinghaus and Mannow 2001). Amongst economies in which the incentive structure is geared toward the acquisition of general skills in order to augment and capitalise on labour market flexibility, the acquisition of specific skills can, in cases of labor market reconfiguration, lead to long-term unemployment, or decreased employability (Daudey and Decreuse 2006). Furthermore, employment interacts with other conditions of globalisation such as product market deregulation, in which case the dynamics of global import substitution, international wage competition, and the presence of footloose multinationals may conspire to weaken the capacity of labour to achieve higher returns in times of uncertainty (Kristal 2010). Irrespective of skill profile, the classical Marxian 'reserve army' hypothesis implies that a labour surplus during times of economic downturn should weaken the bargaining capacities of labour, in which case unemployment should exert a downward pressure on labour share in the absence of labour hoarding. This outcome is likely to vary however, depending on the nature of domestic welfare provision, the extent and level of unemployment benefit, and the scope for long term up-skilling within flexible labour markets. The 'reserve army' hypothesis further reveals a curious feature of the European labour share transition, insofar as it posits a falling rate of profit through labour market tightening and upward wage pressure in times of expansion (Raffalovich et al 1992: 244). That this has not been the experience of many states is further suggestive of the validity of an institutional perspective, and the shortcomings of a factor share stability assumption in growth modeling; the inclusion of a model of labour market conditions is thus essential in order to explore how the specific features of labour market structure and organisation interact with labour share, in both the short and long term.

#### **4. Financialisation**

Our final model captures a key trend which has received much academic attention of late; the growing centrality of financial activities such as financial sector employment and profitability, the expansion of consumer credit, capital flow deregulation, the diversification of firm activity away from core productive activities, and an increase in ‘shareholder managerialism’ at firm-level – processes collectively referred to as financialisation (de Serres et al 2002; Krippner 2011; Kus 2012; Ó’ Riain 2012). Krippner’s account of financialisation in the U.S. has drawn attention to a number of characteristic trends associated with financialisation, such as an increase in corporate profitability through financial channels, and the subsidisation of firm profitability through peripheral financial activities at the expense of core, labour-intensive activities (2011: 28). The high capital intensity and productivity of such activities, despite the substantial compensation packages associated with high-skilled financial sector employment, has led to an overall depression of labour share within these sectors, producing a depressive effect on aggregate labour shares (Atkinson 2009). This effect has been particularly notable in Germany and the United States, where labour shares in finance, insurance and real estate in 1995 stood at 30.3%, and 42% respectively; below national average labour shares, and the lowest of all sectors relative to human capital inputs (de Serres et al 2002). Ireland and Denmark have both seen substantial growth in their financial services sectors between 1995 and 2005. For Ireland, gross operating surplus within finance rose from 22.9% of all sectors to 36.5%, finally outstripping manufacturing productivity in 2003, and gross value added as a percentage of all sectors, in 2005. Productivity in Danish financial services has consistently remained above that of manufacturing, whilst its labour share remains the lowest of all sectors (see appendices 2 and 3).

Financialisation has been conceptualised in a number of ways. As stated previously, the work of Kus has revealed a negative association between financialisation (indexed as stock market activity, pre-tax bank income and securities), and income inequality, although certain problems surround the use of GINI as an appropriate measure of income concentration, given that the primary effect of financialisation on inter-sectoral differentials has been for senior pay to outstrip that of others of comparable skill levels, owing to the use of non-indexed performance bonuses, and the provision of stock options as components of overall compensation packages (de Serres et al 2002). Arguably, an index of top-tier income concentration across sectors would capture the concentration effects of delinked pay increases, and perhaps reconcile the conundrum of Ireland’s modest reductions in net GINI between 1980 and 2007, comparable only to those of Sweden (Kus 2012: 480). For Ireland, financialisation has led to changes in regulatory governance, partly as a result of increased European integration and trade liberalisation, but crucially as a result of regulatory decisions taken by the Irish government throughout the 1990’s, which weakened the ability of the state to intervene in capital allocation (Ó’ Riain 2012: 500). The translation of investment rationalities away from productive investment streams toward speculative property lending, coupled with reductions in capital gains tax, gave rise to a situation where growth mechanisms driven by finance began to supplant those of Ireland’s 1990’s export-led boom of employment and expanded consumption. Property investment thus increased 66% between 2000 and 2008, whilst investment in productive capital stock by private firms increased 26% (Ó’ Riain 2012: 507). The resultant collapse of the property market in 2007, and the effects of the global financial crisis reconciles sharply with the finding of much research into the detrimental relationship between labour share, and capital account openness, globalisation and

capital flow deregulation (Boggio et al 2009; Guscina 2006; Harrison 2005). More insidiously, Diwan (2001) has suggested that profound decreases in labour share during times of financial crisis suggest the presence of unequal risk sharing, by which losses become socialised onto increasingly precarious labour market actors, or through mechanisms of state redistribution in times of austerity.

Regarding the more general behaviour of firms, financialisation has also left its imprint upon corporate strategising, with profound implications for long-term labour security. With growing marketisation of firms, and increased demands of product and capital markets, managers have become more sensitised to market signals and short-term profiteering to the benefit of shareholder dividends. As a result, market signals come to dominate rationalisation decisions; in a climate of easy capital movement, production outsourcing and competitive relocation costs, the balance of bargaining power has shifted toward capital. The international labour organisation (ILO) has now come to recognise the implications of financialisation on labour share, noting that an increase in firm investment options beyond real assets, and the effect of ‘aggressive returns-oriented institutions...put[ting] pressure on firms to increase profits, especially in the short term’ (ILO 2013: 50). The dimensions of **finance** and **finance\_wage**, coupled with controls for key elements of associated socio-economic change (**sectoral effect**), capture both the comparative economic importance of finance relative to other sectors of the national economy, and of the growth of domestic credit as a catalyst for expanded consumption. Through these channels, we should expect, on the basis of cross-national research, that financial activities have come to mediate more widely between firm and labour (Thompson 2003), and to depress labour’s share through a range of multilevel mechanisms.

### *2.3. Axes of cross-national comparison*

The preceding commentary has drawn repeated attention to the possibility of cross national variation in the direction of association, effect size, and mechanisms through which these dimensions may influence movements in labour share. Many of these variables relate to key aspects of labour market institutions such as union activity and leftist power, or core characteristics of national economies such as their employment composition, trade and investment volumes, and modes of welfare provision. Accordingly, it is worth considering the utility of a number of conceptual devices introduced at the opening of this paper, which have attempted to marshall this complexity into sets of coherent ideal-typical models, in order to better articulate the essential axes of variability along which differences in labour share dynamics might manifest across countries. Such devices offer scope for abstraction beyond the niceties of individual variables, although their utility here resides within their capacity to meaningfully distinguish between observed divergences in parameter values, rather than their internal theoretical consistency.

Ireland and Denmark are well differentiated along the respective axes of the varieties of capitalism (VOC) and worlds of welfare capitalism typologies (Arts and Gelissen 2002; Blanchard and Giavazzi 2003; Ebbinghaus and Manow 2001; Hall and Gingerich 2004). Esping Anderson’s paradigmatic models of welfare state regimes owe their differentiation to a complex of systematically interwoven legal and organisational features, manifesting as coherent ideal types within the path-dependent historical trajectories of individual states. According to this typology, states may be differentiated by the extent to which their welfare

provision is decommodified (i.e. the ability of citizens to subsist beyond reliance upon market mechanisms), and by the forms of stratification (i.e. narrow or broad-reaching) engendered by internal class coalitions. For liberal economies such as Ireland, markets assume primacy, with state subsidised, means-tested welfare provision, and low income redistribution. Social democrats such as Denmark, in contrast, exhibit high degrees of decommodification, with a universal approach to redistributive welfare provision (Arts and Gelissen 2002). These ideal types in turn capture essential features of the welfare - labour market nexus, which bear close affinities with other aspects of individual societies such as their domestic production regimes, and patterns of inequality (Ebbinghaus and Manow 2001).

The VOC perspective extends this configurational logic to a typology of institutional variations centered on the extent of coordination in the realms of corporate governance, and labour relations (Hall and Gingerich 2004). This perspective operates from a base assumption of socially embedded economic activity, within an institutional architecture of legal conventions, education and training provision, and the extent of economic coordination, which together generate its core binary of; (1) *coordinated economies*, loosely characterised by inter-firm networking, coordinated, centralised wage bargaining, ‘patient’ capital investment, vocational training and longer tenures, and (2) *liberal market economies*, characterised by reliance on short-term financing, decentralised wage bargaining, general education geared toward flexible labour markets, and higher employee turnover (Ebbinghaus and Manow 2001). Within the realms of industrial relations and welfare provision, the VOC perspective draws specific attention to the organisation of relations between labour unions and employers, and the extent of their connections to the welfare state (Jackson and Deeg 2006: 16-17). Hall and Gingerich’s (2004) scatterplot of country-level factor loadings on coordination in labour relations (level of wage coordination, degree of union-employer strategising and labour turnover), and corporate governance (shareholder power over firms, dispersion of control and size of stock market), identifies Ireland as a state with low levels of coordination in both labour relations and corporate governance, whilst Denmark scores comparatively higher on both dimensions (see figure 4 below). Similarly, Blanchard and Giavazzi’s (2003) plot of state locations in terms of labour and product market deregulation places Ireland at a comparatively lower level of product market regulation (see figure 5 below).

Figure 1 Institutional complementarities between coordination in labor relations and corporate governance

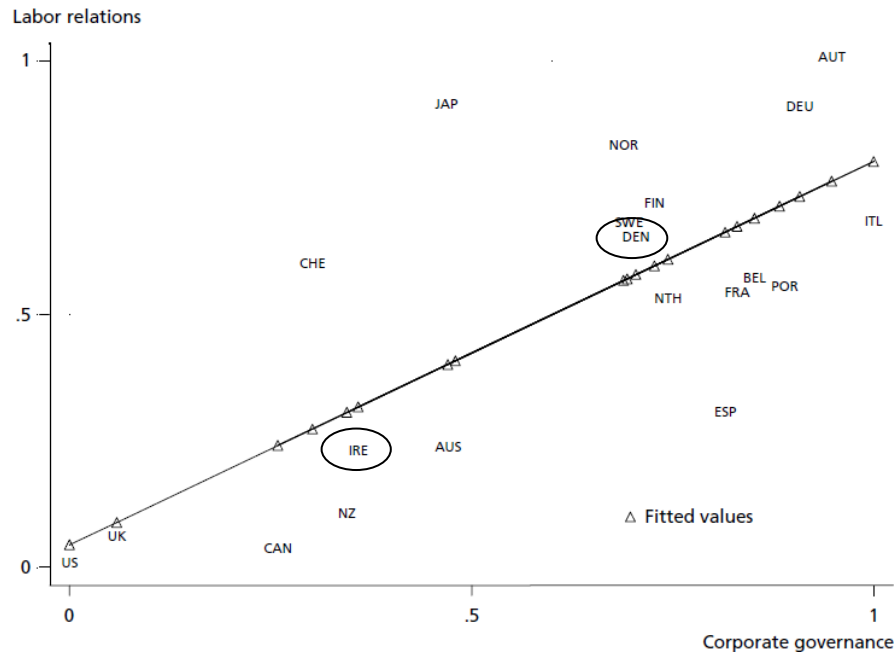


Figure 4. Coordination in labour relations and corporate governance (Hall and Gingerich 2004)

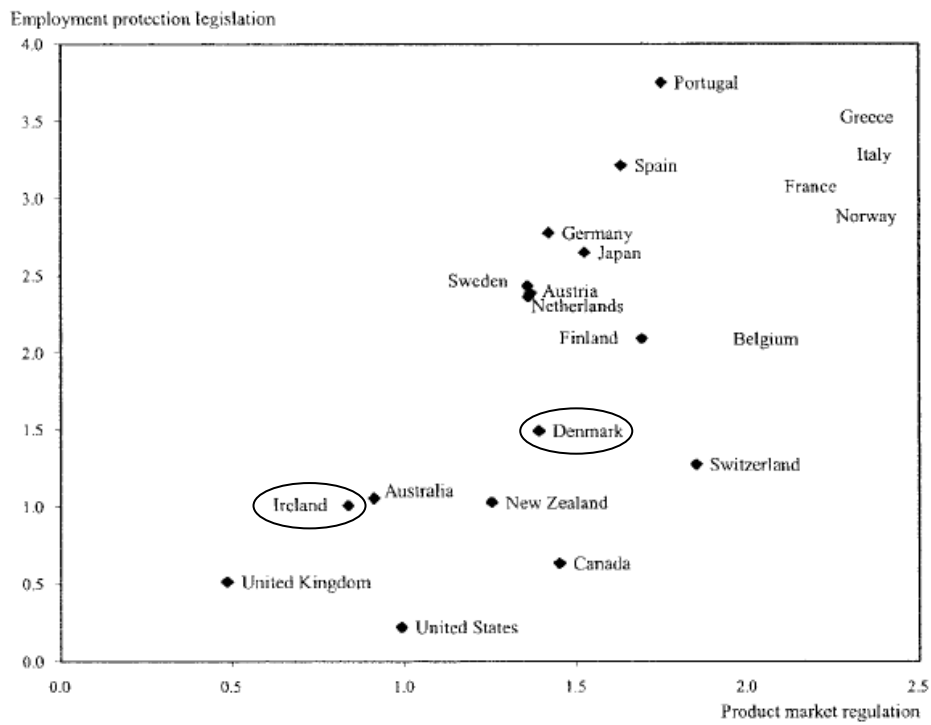


Figure 5. Labour and product market deregulation (Blanchard and Giavazzi 2003)

These axes of differentiation are central to the labour share story in a number of respects. Within states exhibiting deregulation in product and labour markets, ease of market entry has been shown to exert downward wage pressure on incumbent firms, under the influence of foreign direct investment, and trade liberalisation (Blanchard and Giavazzi 2003). The VOC perspective suggests that the centralisation and coordination of wage bargaining should foster cross-sectoral solidarities, depress inter-sectoral wage differentials, and favour an overall equalisation of pay when the benefits of centrally-negotiated sectoral agreements are spread amongst all labourers (i.e. union and non-union). The trade-off of higher union premiums in liberal market economies with lower levels of unionisation thus comes with added risk, in the form of greater tenurial insecurity (Rueda and Pontusson 2000). The spread of entitlements and protections in states with higher union densities should in turn lead to greater labour market security, whilst their vocational training orientation should favour long-term up-skilling, and longer tenures. Within sectors, joint bargaining should favour internal wage equalisation, which in turn benefits both high and low earners, providing a further bulwark against market perturbation.

Regarding models of welfare capitalism, amongst social democrats with historically greater levels of public spending, public employment, and social transfers; wage equalisation effects should be evident through the maintenance of reservation wage levels. Universal benefits should further insulate employees from adjustment costs in times of economic downturn, whilst their greater levels of unionisation should proportionally raise firing costs above those of their liberal counterparts. In this respect, the ‘Ghent’ system of unemployment assistance provision in Denmark (Ebbinghaus et al 2011; Van Rie et al 2011) has established consistently high levels of unionisation, by indexing unemployment benefit rates (up to 90% of previous pay levels), under sectoral systems of state subsidised union administration. This system has contributed to comparatively high levels of unionisation amongst Nordic states, given that access to such funds is typically conditional on minimum contribution periods of one or more years (Visser 2006). The ‘Ghent’ system has thus served to mitigate the effects of precarious employment which, in conjunction with sustained public spending, has led to enhanced labour market participation, particularly amongst cohorts generally associated with occupations of shorter tenure, lower levels of unionisation, and lower wages such as females (Ebbinghaus et al 2011: 111).

In short, both axes imply a distinction in the capacities of the state, and of labour market participants to insulate themselves from the competitive pressures of globalisation, structural change, and inter-firm competition. The institutional configurations described by these heuristics thus sensitise us to the manner in which states and labour may collectively respond to the range of perceived depressive threats detailed in the preceding section, either through the conventional bargaining mechanisms of labour market institutions, or through the availability of state provisions geared toward cushioning the negative effects of increased market exposure. Consequently, both axes suggest a distinction between Ireland and Denmark, in terms of the capacities of state and labour market institutions to distribute economic gains equitably amongst capital and labour, and to support sustainable growth.

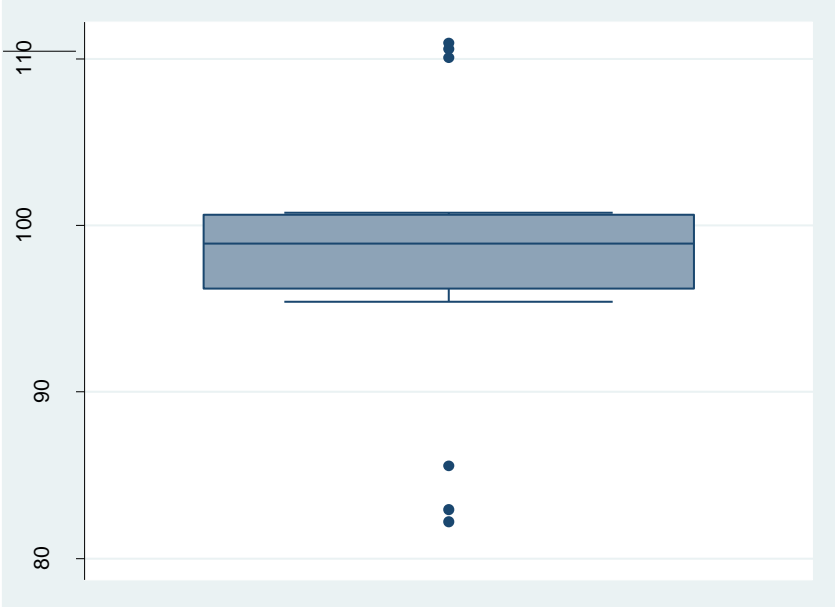
### 3. Data and Methods

#### 3.1. *Measuring labour's share of national income*

The calculation of labour's share of income is far from a matter of consensus, and existing literature exhibits a number of competing methods of estimation. Owing to difficulties in distinguishing capital from labour allocation amongst the self-employed within national accounts measures of compensation, it has become customary to include a correction for incomes of the self-employed, typically assumed to reside at the average rate of compensation of either the sectoral, or national workforce. This 'adjusted' measure assumes equivalence between wages of the self-employed and employees. There is considerable evidence however, that sectoral inequalities in proportions of self-employment and remuneration may produce an under-estimate of aggregate labour share levels, particularly as in recent years, self-employment growth has tended toward those in high-income professions, rather than within sectors of traditionally lower remuneration such as agriculture (Arpaia, Perez and Pichelmann 2009; De Serres et al 2002). Others such as Rodriguez and Jayadev (2010) have taken a more cursory approach, calculating labour share simply as compensation of employees/gross value added, without adjustments for the self-employed wage bill. Both approaches engender related difficulties – especially in the cases of Ireland and Denmark - insofar as both employ Gross Domestic Product (GDP) and Gross Value Added (GVA) as their respective denominators. This introduces a significant source of error into the estimate, as Ireland's economic fortunes are characterised, in part, by their volatility to global vicissitudes, and uneven periods of foreign direct investment (FDI) inflows. This is particularly true of the late 1980's and 1990's, throughout which Ireland began to capitalise on a new wave of FDI, to the extent that between 1991 and 1999, industrial employment in U.S. owned manufacturing plants grew by 91.7%, whilst the professional industrial labour force grew by 124% (O' Riain 2004: 31).

Ireland's various historical phases of protectionist industrial policy and regimes of FDI-led growth, punctuated by sustained periods of recession, further render the calculation of national output difficult, due to the strong influence of multinationals on its GDP base. The presence of favourable corporate tax rates such as Ireland's have proven particularly attractive to foreign multinationals seeking to maximise corporate profit, and in the context of U.S. owned subsidiaries, existing research has suggested that the presence of such affiliates in countries of lower corporate tax regimes results in a favourable outcome of lower tax liabilities for U.S.-based parent companies, given that foreign profits are liable for taxation only upon repatriation (Barry 2005; Bartelsman and Beetsma 2003). As a result, the transfer pricing activities of foreign-owned firms tend to produce the undesirable effect, from the perspective of labour share calculation, of artificially inflating estimates of the *domestic* returns to capital, in the form of inflated estimates of national product (Stewart 1989). As a case in point, the Irish pharmaceutical sector is especially prone to such confounding. Given that this FDI-dominated sector accounted for approximately 16% of Irish industrial exports in 2006, and that 93% of Irish pharmaceutical employment was accounted for by foreign-owned companies, it is worth noting that gross value added per capita in Irish pharmaceuticals at this time was more than double the EU-15 average, a rate which is suggestive of extensive transfer pricing activity (van Egeraat and Barry 2009: 28). The effect of this distortion extends beyond pharmaceuticals; the 'reproduction of computer media' sector, which captures the output of Ireland's extensive, globalised software industry, exhibits a GVA per employee five times that of the UK (Barry 2005: 677). The net effect of these transfer price manipulations is that of a

considerable mismatch between domestically *generated*, and domestically *appropriated* value. The scale of this mismatch across both Ireland, and to a lesser extent, Denmark, may be further illustrated by graphing GNI as a proportion of GDP across the EU-27;



**Figure 6. Ratios of GNI-GDP, EU-27**

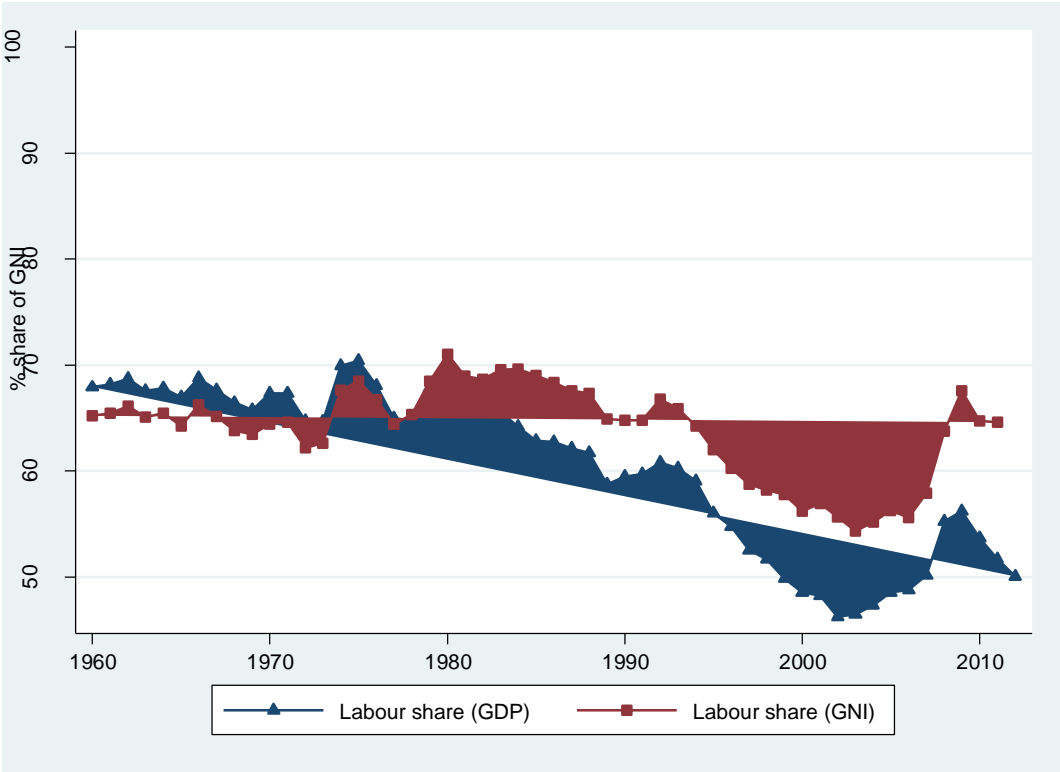
<b>Table 1. GNI/GDP ratio outliers</b>	
<b>Country</b>	<b>GNI/GDP Ratio</b>
Luxembourg	82.215
Lithuania	82.930
Ireland	85.538
Denmark	110.058
United Kingdom	110.59
Latvia	110.947

As may be observed above, although GNI-GDP ratios exhibit broad parity across a majority of countries, a number of outliers exist for which GDP constitutes a considerable over-estimation of domestic capital returns (the lower-bound outliers of Ireland, Lithuania and Luxembourg). On the basis of the above disparity, this paper employs an estimate of aggregate labour share utilising GNI as its denominator, in order to adjust for the considerable contribution of multinationals and foreign-owned subsidiaries to productivity statistics, thereby offering a crucial corrective to existing studies which have relied on a GDP-denominator in their calculation of Ireland’s labour share. The net effect of this adjustment is an inflation and stabilisation of post-1980 labour share rates in Ireland, and a more consistent, moderate reduction in those of Denmark. Despite the computational precision offered by a sectoral

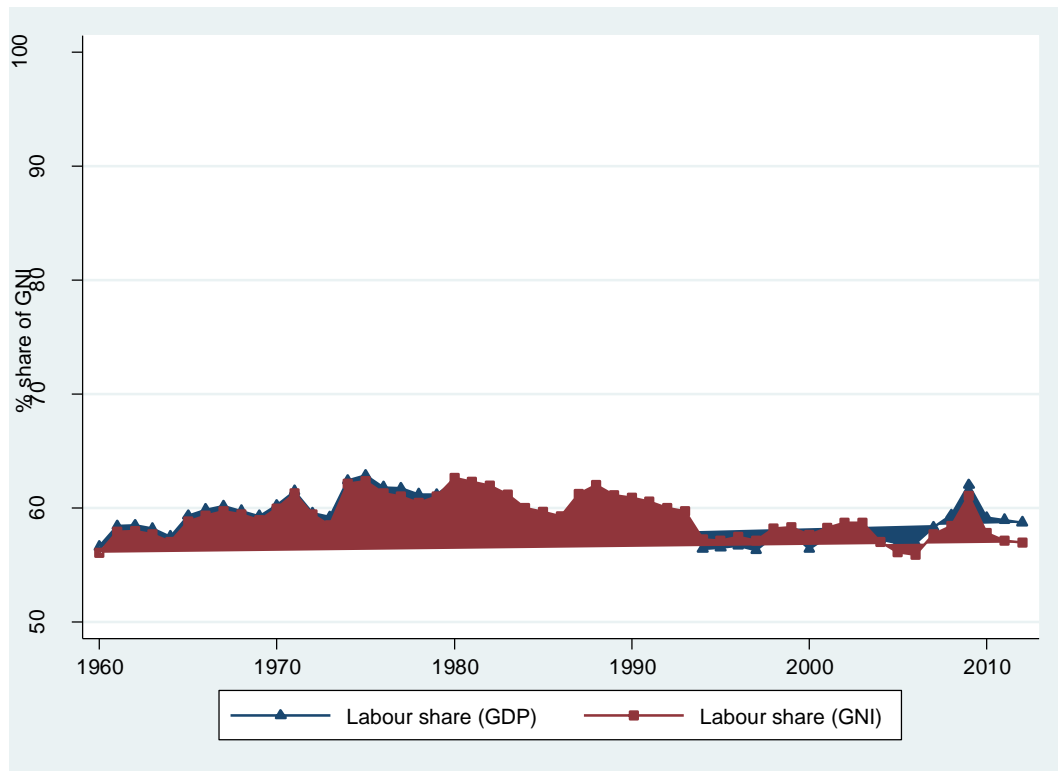


decomposition approach, which offers a weighted estimate based upon the specific character of self-employed remuneration by sector, reliable sectoral data are available from 1970 only for Ireland, which reduces substantially the degrees of freedom possible in sector-aggregated models. Therefore, labour shares were calculated according to the formula reproduced below, which further permits a consideration of potential historical shifts between rates of formal-contractual, and self-employment in the national economy, albeit one which is based on aggregate national accounts data from 1960-2010. The net effect of this adjustment is that of a more modest rate of labour share decline across the historical span of the Irish series relative to that of Kristal (2010), and a marginally greater overall Irish average (63.9%) than that of the European Commission (2007), which has estimated Ireland’s average labour share at 62.1%. Sectorally-decomposed series of shorter duration were also calculated for Ireland and Denmark utilising EU-KLEMS, and OECD Structural Analysis (STAN) data, which offer a decomposition of economy-wide labour shares to ISIC Rev. 3 sectors between 1970 and 2010 (see appendices 5 and 6). The results of adjusting the Irish and Danish aggregate series to a GNI denominator are illustrated below in figures 7 and 8, which graphs both GDP and GNI estimates between 1960 and 2011. As may be observed, both sets of estimates exhibit broad parity until the 1980’s after which Ireland’s expanding, globalised productive base begins to significantly underestimate returns to labour based on GDP alone.

$$\text{Labour Share} = \frac{(\text{Compensation of Employees}) + (\text{Number of Self - Employed} * \text{Nominal Compensation per Employee})}{\text{Gross National Income}}$$

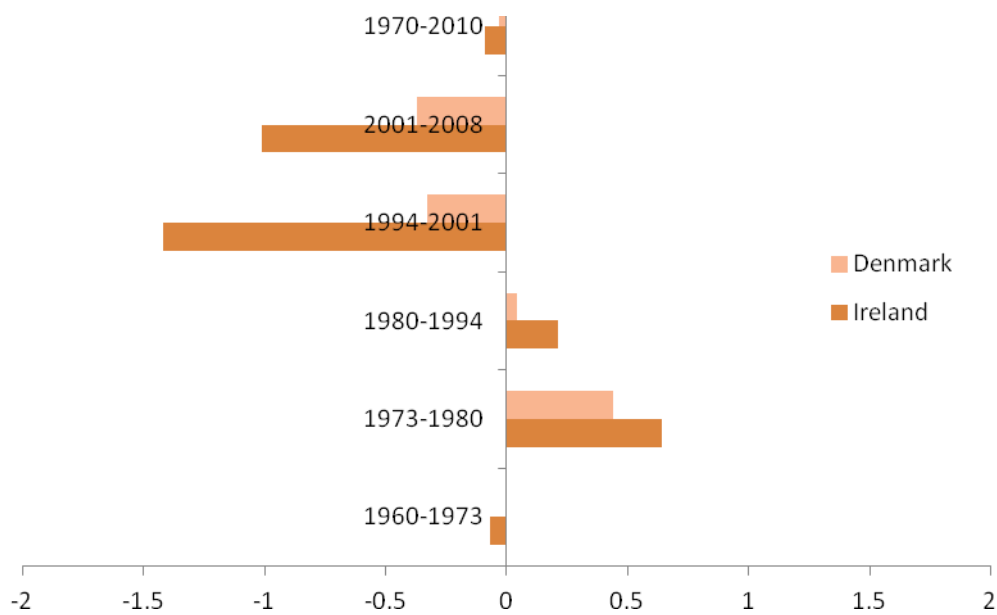


**Figure 7. Labour’s share of national income (Ireland), GDP and GNI denominator, 1960-2012**



**Figure 8. Labour’s share of national income (Denmark), GDP and GNI denominator, 1960-2012**

Furthermore, as may be observed in figure 9 below, both Ireland and Denmark exhibit competing phases of labour share decline, indicating substantial differentiation in their aggregate dynamics. By regressing and plotting a succession of period-specific trend dummies, we may gauge this divergence in adjustment rates across Ireland and Denmark; the coefficient on these partial models indicates the average amount (%) reduction over 1 year within each period (i.e. 1984-1994). Whilst Ireland exhibits faster growth between 1960 and 1980, Denmark adjusts consistently toward a more stable rate of decline relative to that of Ireland which drops to -1.5% per year between 1994 and 2001, compared to -.4% per year for Denmark. Overall, Denmark’s series is more trend-stationary relative to Ireland which is decidedly more volatile, suggesting an imminent need for closer attention to the dimensions articulated in the previous section.



**Figure 9. Period-specific linear trend coefficients, 1960-2010**

Commensurate with substantive and theoretical requirements, and insights gleaned from papers cited throughout, a range of independent variables were selected for inclusion in the time-series models which follow. Single-unit time series analyses, particularly those conducted on series measured over long intervals such as years, typically suffer from the problem of diminished sample size and reduced degrees of freedom, rendering the reliable inclusion of multiple predictors in a single model somewhat problematic. Consequently, an iterative approach to model specification was taken, by which a range of alternate models were specified corresponding to differing components of the nationally-bounded system of institutional and macroeconomic configurations in which the dynamics of labour share manifest. These models were in turn specified according to the criteria outlined in figure 3. Descriptive statistics and descriptions of all input variables are provided in appendix 1, along with details of variable sources

### ***3.2. Model Estimation***

A multitude of existing studies have employed various forms of data pooling, in order to assess both cross-sectional variations in labour share and income inequality between countries, and to explore the determinants of income distribution inequality over time. Investigations of income and labour share distribution over time often utilise pooled observations across multiple countries, in order to maximise sample sizes for panel estimation techniques, and to recover degrees of freedom, thus permitting the inclusion of more predictors than is typically possible with single-unit time series models (Kristal 2010; Jaumotte and Tytell 2007; Lee 2005; Rodriguez and Jayadev 2010; Volscho and Kelly 2012). Such studies have not been received without a measure of criticism however. In a meta-review of 195 published studies employing linear panel models, Wilson and Butler (2007) found that 22.1% included no dynamics, and that 93.1% offered no discussion of their author's decisions either to include or

exclude dynamic specifications. Furthermore, upon re-specifying 20 models from their chosen pool of published works with varying alternative specifications, such as the inclusion of unit fixed effects, the authors identified 8 sets of estimates in which coefficients subsequently varied in magnitude from those of their original investigators, and 5 sets of data where coefficients reversed sign (Wilson and Butler 2007: 113). This does not imply a default rejection of the explanatory capacities of pooled analyses, but instead calls for a sensitivity on the part of the analyst both to the particular method of model specification employed, and indeed, to the very logic of pooling itself.

In light of these caveats, there are a number of reasons why a single-case approach is here mandated. As discussed above, Ireland – and to a lesser extent, Denmark – sit somewhat problematically within existing meta-regimes of socio-economic differentiation, such as those of the influential varieties of capitalism, and worlds of welfare capitalism. Consequently, despite its decidedly liberal categorisation by Hall and Gingerich (2004) based on comparative economic coordination scores, existing studies have emphasised the punctuation of Ireland's liberal trajectory with profound periods of state intervention, such as its participation in social partnership negotiations, which reached beyond issues of wage setting alone to incorporate civic associations with implicit agendas of social inclusion (Teague 2006), and the actions of the Irish 'developmental network state', which mobilised a range of state institutions and mechanisms throughout the 1990's, such as creation of state industrial development agencies and the setting of corporate taxation rates, fostering an influx of foreign capital (O' Riain 2009). In light of such possible deviations from the typical prescriptions of liberalism of social democracy – such as Denmark's 'workfare turn' in the late 1990's, a specific consideration of the evolving institutional space of economic activity is thus central to any interpretation of the dynamics of its returns to labour. To this end, the historical scope of the data employed in these analyses incorporate a number of distinct, characteristic phases of economic development, regimes of industrial policy formulation, and trends of unionisation.

The nature of time series regression thus satisfies a number of related methodological concerns. In purely statistical terms, it satisfies the core requirements of data reduction, albeit with certain limits on the number of potential independent variables, owing to a reduction in degrees of freedom in consequence of the small sample sizes typically available in single-unit time series. However, time-series analysis, in contrast to typical cross-sectional quantitative work, permits a form of 'case-intensive' investigation, which calls for sensitivity to historical nuance both in terms of model specification and interpretation. Time series techniques also permit the partailing of specific historical phases through the inclusion of trend dummies, which allow for the presentation of historical nuances in model coefficients. The specific modelling technique employed in the forthcoming analysis consists of a series of error correction models (ECM), employing both ordinary least squares, and autoregressive error estimators. ECM's are here employed in an attempt to deal with a number of issues which render the specification of time series models somewhat problematic, those of error autocorrelation, and non-stationarity, which are here discussed in turn.

In contrast to regressions performed on cross-sectional data, time series models are particularly prone to spuriousness due to the probable presence of error autocorrelation. Given that time-series data points possess an inherently ordered structure, positive residuals in a particular period are likely to be associated with positive residuals across subsequent periods (and similarly with negative residuals). This characteristic violates a core assumption of the linear model; that of zero covariance between errors. Consequently, parameter estimates in time-series models suffer from an underestimation of variance, which tends to inflate t-statistics due

to the presence of smaller denominators (standard errors). The net effect of this variance underestimation is an upward bias of  $t$ , leading to an increased probability of type-1 errors when assessing coefficient significance. Error autocorrelation is typically dealt with through the inclusion of dynamics, such as the regression of lags of independent variables on the outcome in question, or the use of a family of models known as autoregressive error models (ARp), which estimate two sets of equations in which the autocorrelative structure is contained within a separate error equation, and the structural equation may be interpreted as a ‘steady state’ equation. These problems are dealt with in the context of the error correction model specification (ECM) detailed below.

### ***3.3. Stationarity and unit root tests***

Time-series models are particularly prone to confounding from the property of series non-stationarity. A time-series is deemed stationary if it is mean-reverting (i.e. although the series may fluctuate over time, it should remain stable around its mean value). Social-scientific data are especially prone to shock-persistence and trending behaviour however, and the above time series plots suggest that such characteristics are present in many of our chosen predictors. Regressions employing non-stationary series can result in high  $R^2$  and  $F$  statistics, or in a spurious regression which falsely detects significant relationships between unrelated series. In practice it is difficult to diagnose non-stationarity visually, and unit root tests should be employed as a first-pass prior to model fitting. Furthermore, given that many of the following variables are expressed as proportions, the simple fact of their constraint by upper bounds, and therefore the absence of theoretically infinite variance, implies that such variables cannot meet the criteria of infinite variance required of unit root processes (Volscho and Kelly 2012: 696). Conscious of the questionable validity of regressions conducted on non-stationary variables (Ercolani and Wei 2011), stationarity tests were performed on all variables implicated in the forthcoming analysis; appendix 2 therefore presents the results of Augmented Dickey-Fuller (ADF) unit root tests. On the basis of these results, it is clear that non-stationarity is a significant source of concern in our analysis, and the provisions of the ECM, as detailed below, are further justified.

### ***3.4. The error-correction model***

Conventional approaches to the combined problems of serial correlation and non-stationarity in time series regression often seek to specify various forms of the finite distributed lag model (FDL), in which lags of stationary predictors, and first-differenced non-stationary predictors are combined in a multivariate model of the following general form;

$$y_t = \alpha_0 + \beta_1 \Delta X_{t-i} + \beta_2 X_{t-1} + \varepsilon_t$$

In this model, levels of labour share ( $y_t$ ) are modelled as a function of first differences ( $\Delta X$ ), and lags of predictors ( $X_{t-1}$ ), according to their specific orders of integration. The type of relationship typically observed in analyses of income distribution however, is that of an error correction relationship, in which ‘...deviations from the long-run relationship (errors) are eliminated over time through an adjustment process (error corrections)’ (Volscho and Kelly

2012: 688). As noted above, regressions performed on non-stationary series run the risk of arriving at a spurious model which yields significant coefficients, when in fact no relationship exists. Under certain circumstances in regressions amongst non-stationary series that *are* related, a desirable property known as super-consistency is produced, which yields faster convergence to true parameter values. Typically, the presence of cointegration may be assessed by testing the stationarity of residuals from a regression between two or more non-stationary series; if the residuals of this model are themselves non-stationary, then the regression may be deemed super-consistent, and the desirable properties of convergence to true parameter values may be exploited. The use of ECM's however, permits a more parsimonious mode of assessment. A single equation ECM consists of an autoregressive independent variable ( $\alpha_1 Y_{t-1}$ ), and a series of additional predictors which model both short term effects, and long-term effects. In this case, a 'first differenced' term captures the short term, instantaneous effects of changes in the *level* of predictors ( $\beta_1 \Delta X_{t-i}$ ), whilst a lagged term captures the long-run effect ( $\beta_2 X_{t-1}$ ). The complete model includes a first-differenced outcome ( $\Delta y_t$ ) as follows;

$$\Delta y_t = \alpha_0 + \alpha_1 y_{t-1} + \beta_1 \Delta X_{t-i} + \beta_2 X_{t-1} + \varepsilon_t$$

The parameter on the autoregressive term  $\alpha_1$  thus serves as a test of cointegration in the presence of integrated variables (the above unit root diagnostics indicate orders of integration are present across all variables), whereby a significant coefficient indicates the presence of a long-run relationship between variables (de Serres 2002; Volscho and Kelly 2012). Furthermore, this parameter may be interpreted as the proportion of disturbance, generated by changes in the predictors, which is corrected within a single year. Consequently, the above specification offers the considerable advantage of permitting the incorporation of both short and long-term effects (Busemeyer 2009; Kristal 2010: 744), as well as providing a diagnostic of the potential presence of cointegration, and a parsimonious summary of the system dynamics. With regard to the mechanics of model estimation, a 'Box-Jenkins' approach was adopted, which involves beginning with a parsimonious model containing a limited number of explanatory variables, and progressively adding and removing variables based both on theoretical, and statistical criteria (i.e. t-statistic magnitude). This procedure continued iteratively for each individual model, until a point of saturation, or diminishing returns was reached, the threshold of which was judged on the basis of information criteria (AIC) and parameter significance. Parameters on models 3 and 4 were chosen based both on their coefficient magnitude across previous models, and their theoretical relevance; all models were estimated by ordinary least squares, with robust standard errors, and constructed according to the same essential ECM structure as detailed in the above equation.

## Results and Discussion

Ireland and Denmark exhibit a number of key institutional and structural differences, as detailed in appendices 3-5 which list summary trends in aggregate and sectoral labour shares, employment, and sectoral output. Certain of these trends, although less explicit, are of subtle importance to the labour share narrative. The volatility of Ireland's labour share relative to that of Denmark is borne out by the fact that Ireland's series exhibits second-order integration in its unit root diagnostics, whilst that of Denmark is first-order integrated. Visually, aggregate labour share trends are similarly divergent; although exhibiting comparable variation until the early 1980's – albeit at differing relative levels – Ireland's post-1980's decline is significantly sharper, eventually dipping below that of Denmark in the late 1990's, before rising sharply following the post-2007 collapse in Irish GDP (ax3, 1). This is despite similar historical trends in the sectoral employment compositions of both economies. Ireland has witnessed a profound transition in its employment structure since 1960, during which agricultural employment has fallen drastically, relative to moderate declines in industry and manufacturing, and a drastic rise in services employment. By 2009, service sector employment, including public sector and retail, accounted for 75% of total Irish employment, with particular gains in financial and business services (ax4, 12). Similarly, Denmark has seen a sustained decline in manufacturing relative to total employment, a comparably drastic rise in service sector employment to a level above that of Ireland, coupled with modest declines in agriculture, and substantial gains in financial and business services (ax5, 11).

In terms of economic output and productivity, service sector growth in Ireland has led to a similar consolidation of services output in terms of economy-wide gross value added (ax4, 13). Concurrently, the relative contribution of agriculture to net value added has declined sharply in line with agricultural employment, whilst that of services has grown sharply, overtaking manufacturing in the early-mid 2000's. Despite the low capital intensity of public sector activity, service sector output has come to dominate, rising to over half of economy-wide composition during the 2000's, assisted in part by the rise of financial sector capital intensity. This interpretation is corroborated by sectoral decompositions of productivity, which show the dominance of financial services and manufacturing relative to the per-capita productivity of other sectors (ax4, 11). When adjusted for the comparative labour-intensity of public services, the comparative prominence of service sector activity falls sharply, whilst that of manufacturing – unadjusted for the effects of multinational transfer pricing – assumes growing importance. Provisionally, these trends appear to substantiate something of the technological augmentation-capital intensity narrative of aggregate labour shares, given that Ireland shows significant gains in per-capita output in manufacturing during the 'technological revolution' era of the post 1980's, coupled with a sharp rise in finance, under the influence of deregulated capital movement, and favourable capital gains taxation rates, relative to which labour's share has fallen.

In Denmark, the disparity between service and manufacturing sector output is yet more pronounced (ax5, 11). Combined service sector output now accounts for almost 80% of Danish gross value added, relative to which manufacturing and agriculture have experienced near-uninterrupted decline. Similarly, financial sector output has risen sharply relative to that of the 'real' economy, surpassing manufacturing during the 2000's. The dynamics of Danish sectoral change are thus similar to those of Ireland, albeit with more pronounced intra-sectoral disparities. These disparities are especially pronounced when examined in productivity terms (ax5, 10). Relative to others, per-capita output in finance has outstripped that of all other

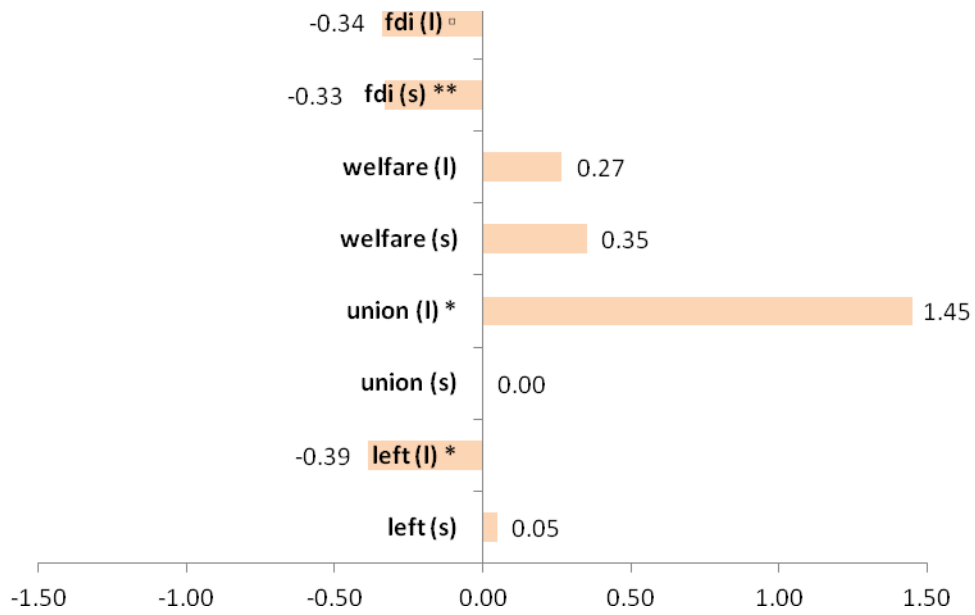
sectors, suggesting that the Danish economy has undergone a process of financialisation – at least in sectoral and output terms – similar to that of Ireland, whereby capital-intensity has come to dominate aggregate output dynamics. Denmark defies the classical ‘hump shape’ of pan-European productivity and labour share dynamics however, by exhibiting more stable upward trends in decomposed manufacturing output during the technological growth era, with little evidence of structural breaks pre/post 1980.

Evolving economic composition, in terms of output and productivity, plays a key role in labour share variation. The transition to a service economy, coupled with alternating rates of growth and decline in agriculture, manufacturing, construction and finance, suggests that the distribution of economy-wide, labour-intensive employment has also fundamentally altered. Sectoral decompositions of Ireland’s labour share reveal that aggregate labour share dynamics conceal important inequalities, and highly variable extents of capital intensity both within, and between sectors (ax4, 10). In sectors exhibiting high rates of self-employment and labour intensity such as construction and agriculture, their decline relative to the rise and stability of capital-intensive finance and manufacturing implies a concurrent reduction in aggregate labour share – a conclusion which appears borne out at least descriptively. For Denmark, a similar mix of labour share inequality across sectors presents, albeit with decidedly greater labour intensity in manufacturing – partly attributable to the greater influence of fdi-induced transfer pricing in Ireland, and greater extents of small-medium enterprises in Denmark – along with lower agricultural labour intensity (ax5, 9). Finance, however, exhibits much lower labour share levels, insofar as its higher degree of capital intensity - coupled with its overall rise in sectoral importance relative to other sectors of the Danish economy - suggests that a similar depressive effect on aggregate labour shares should be identifiable in line with a classical technological-capital augmentation account. That this has not been the case is suggestive of the presence of underlying institutional relationships mediating labours returns, which appear to generate a comparative stability in the Danish series despite broadly similar patterns of structural-economic change across both economies. Table 2 (below) details the results of the first set of ECM models, accounting for political-economic (1) and macro-economic (2) sources of variation detailed schematically in figure 3.



**Table 2. Political-economic and macro-economic models of labour share (OLS)**

$\Delta$ ls (Labour share, GNI denominator)				
	Ireland		Denmark	
	1. Political-economic	2. Macro-economic	1. Political-economic	2. Macro-economic
ls <sub>t-1</sub>	-.599**	-.259*	-.439**	-.704**
$\Delta$ left	.032		-.095 <sup>+</sup>	
left <sub>t-1</sub>	-.135*		.000	
$\Delta$ union	.003		.101	
union <sub>t-1</sub>	.223*		.142*	
$\Delta$ welfare	.817		.640*	
welfare <sub>t-1</sub>	.281		-.302*	
$\Delta$ fdi	-.069**		-.005	
fdi <sub>t-1</sub>	-.061 <sup>+</sup>		-.007	
$\Delta$ trade		-5.683		4.964
trade <sub>t-1</sub>		-11.534**		13.695**
$\Delta$ service		-.096		.193
service <sub>t-1</sub>		-.570 <sup>+</sup>		.142
$\Delta$ comp		.173*		.089*
comp <sub>t-1</sub>		.176*		.105
$\Delta$ cpi		-.379**		-.002
cpi <sub>t-1</sub>		.039		.423**
Constant	25.516**	52.365*	20.499**	14.479
Adj. R <sup>2</sup>	.5544	.7579	.5864	.7362
Model <i>F</i>	(9, 22) 11.60***	(9, 17) 31.14***	(9, 25) 5.76	(9, 11) 12.90
AIC	106.1702	92.9647	94.7635	48.42862
Mean VIF	5.13	13.15	2.19	3.92
N	32	27	35	21



**Figure 10. Standardised coefficients, political-economic model (Ireland)**



**Figure 11. Standardised coefficients, political-economic model (Denmark)**

Consistent with theoretical predictions, the resilience of Denmark's labour share to underlying fluctuations in institutional structure is more profound, and indeed more favourable to labour, than in Ireland. The muted long-term effect of unionisation in Denmark is likely attributable to its higher base levels of union density; unionisation typically exhibits a threshold effect, whereby additional units at higher levels yield little additional returns in compensation – in pooled analyses, such effects are typically modeled as a quadratic function using exponential terms. Therefore, the above model is likely recording larger potential gains of additional union membership, and a more substantial 'union wage premium' effect characteristic of liberal market economies, in the context of Ireland's comparatively lower base levels of unionisation which exhibit narrower sectoral coverage, low statutory protection, and lesser extents of bargaining centralisation than those of Denmark (ax3, 2). Similarly, the effect of fdi approaches zero and is non-significant in the Danish context, whilst that of Ireland is significant and negative, owing to Ireland's greater extents of global trade, and the volatility of its exposure to global labour and product market price fluctuations, which profoundly influence the domestic strategies of multinationals. The pronounced short-term effect of fdi inflow has been verified in existing studies, which have observed stronger effects at earlier stages of financial openness (Decreuse and Maarek 2008: 24). Descriptive output further corroborates the cyclical, volatile nature of fdi inflows across both contexts, (ax3, 5), according to which fdi rises dramatically throughout the 1990's in Ireland, concurrent with substantial declines in labour share, whereafter it remains mean-reverting for the duration of the series.

Leftist partisanship exhibits a negative effect in Ireland, owing to historical difficulties of ideological dilution, and the suppression of labour-friendly policy programmes under the influence of centre-right coalition formation, which has characterised the largely peripheral position of the left in successive Irish administrations. Therefore, this model of partisanship is arguably unable to account for the influence of majority leftist cabinets, owing to their absence from historical record. Similarly, the leftist ideological homogeneity of social-democratic Denmark has likely muted variation along the left-right continuum, producing non-significant leftist effects (this higher base level of leftist representation, and lower variation may be observed across both Ireland and Denmark in ax3, 3). Provisionally, in line with the compensation hypothesis, periods of increased welfare spending precede those of increased labour share in Ireland, although the effect does not achieve significance. The long-term effect of welfare is negative in Denmark, which is perhaps indicative of the stabilisation of Denmark's welfare spending during the 1990's, and the emergence of more workfare orientations, albeit under a national model of universal entitlement (Torring 1999).

Unionisation, and its interaction with other dimensions of the political-economic sphere arguably constitutes a key locus of differentiation between both countries. According to the varieties of capitalism perspective, union densities and bargaining coverage should result in a stabilisation of compensation between sectors, a distinction which is controlled for in the specification of parallel models for Ireland and Denmark, based on their separation on labour market coordination indices (Hall and Gingerich 2004). In contrast to Denmark where access to social protection is tied to union membership, Ireland's system of voluntary, non-statutory recognition affords greater latitude to employers, whilst its regime of fdi-led multinational growth has led to a proliferation of employers engaging in avoidance practices. This has been particularly pronounced amongst multinationals with the capacity to mobilise intensive H.R. systems geared toward opting out of collective bargaining, and through their engagement in practices of parallel non-recognition at greenfield sites (Lamare et al 2009; Roche 2001). Conversely, the provisions of the Danish Ghent system, despite Denmark's more pronounced

SME industrial structure, have favoured sustained union densities throughout times of high unemployment, whilst broader bargaining coverage has served to stabilise inter-sectoral compensation inequalities relative to structural employment and labour market change (Ebbinghaus et al 2011; Rueda and Pontusson 2000; Van Rie et al 2011). Opposing structural covariates have been found in the Irish context, according to which new-entrant, high-tech, U.S.-owned multinationals exhibit a ‘...strong anti-union animus and a general determination to assert their preference for remaining non-union in the economic and institutional circumstances now prevailing’ (Roche 2001: 52). Therefore, it is not surprising that the long-term effect of unionisation, in the context of periods of high labour share and high union density between 1960 and 1980, should exhibit a strong positive effect in the Irish model.

Ireland’s economic growth of the 1990’s has long been tied to the role of fdi and trade liberalisation, given that Ireland is one of the most fdi-intensive economies of Europe. The evolution of Ireland’s fdi-led growth regime may be parsed into a number of distinct phases; its emergence from protectionism and discarding of restrictions on foreign industrial ownership; its elimination of manufactured export tax, consolidating Ireland’s position as an intra-European export platform; its integration into the EU common market, and its later capitalisation on high-tech multinational investment (Barry 2006). Foreign-owned operations typically wield greater influence over work practices than incumbent counterparts, and much Irish inward fdi has been concentrated in manufacturing (particularly electronics, and other high-tech sub-sectors), and services – particularly financial (O’ Mahony and Barry 2004).

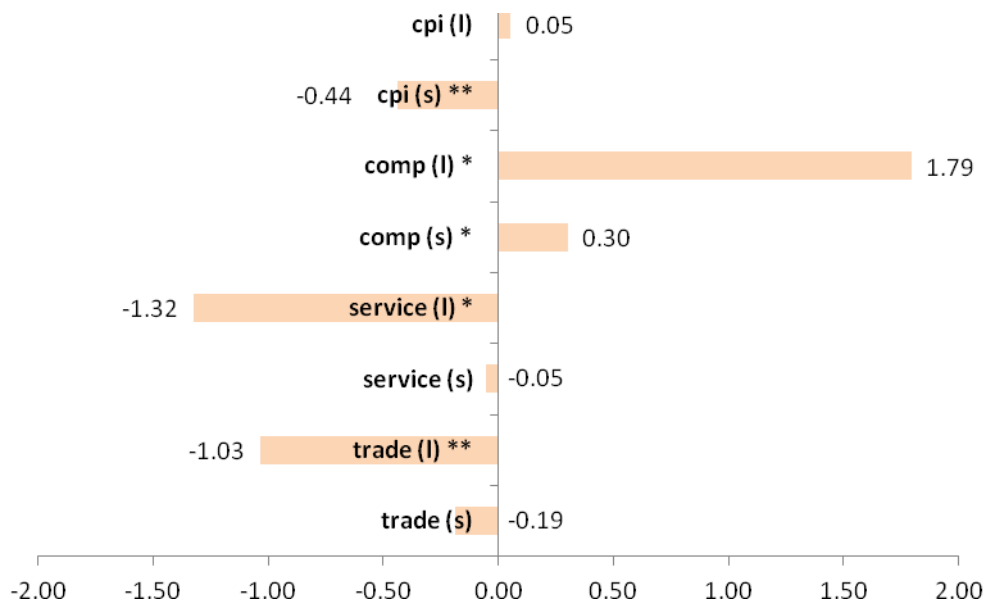
Our meta-analysis of net fdi inflow coefficients across existing research has affirmed a negative effect within pooled analyses (see appendix 5). These results contrast sharply with those of Denmark however, which despite comparable levels of fdi inflow relative to Ireland (ax3, 5), exhibits a negligible coefficient on fdi intensity. Campbell and Pedersen (2007) have argued that the Danish economy, in contrast to the rigidities of the varieties of capitalism CME model, has devolved into a heterogeneous framework of dynamic interactions between market, and non-market institutions which has engendered competitive gains contrary to the ideal-type institutional convergence mandated by proponents of the VOC approach. It is therefore likely that this heterogeneity has afforded considerable latitude in Danish institutional structure, in terms of its ability to reflexively respond to the effects of fdi, which have not produced levels of multinational residence comparable to those of Ireland (Denmark also retains close trading links with its geographical neighbours, compared to Ireland’s global exposure as a hierarchically integrated export platform). In terms of flexicurity, employers within liberal market economies are typically more responsive in the short term to market signals concerning hiring and firing; the lower securities associated with lower union density, high fdi and consequent flexibilisation in Ireland are thus mitigated in Denmark with its emphasis on generous unemployment compensation and higher labour market activation spending which serve to cushion the wage-depressive effects of labour market insecurity (Campbell and Pedersen 2007: 317).

By contrast, Ireland’s 1990’s regime of fdi intensification saw the consolidation of foreign-owned manufacturing, the emergence of spin-off services employment in response to the movement of multinational manufacturing to Asia and central Europe, and an augmentation of capital gains and corporation tax favourable to financial sector expansion, sectors typically identified as significant covariates of non-unionisation (Barry 2006; Ó Riain 2012). The relationship between multinational presence and wage dynamics in Denmark is somewhat more complex; although unionisation typically engenders wage premiums relative to non-unionised employment, the union-premium effect is not present amongst Danish foreign-

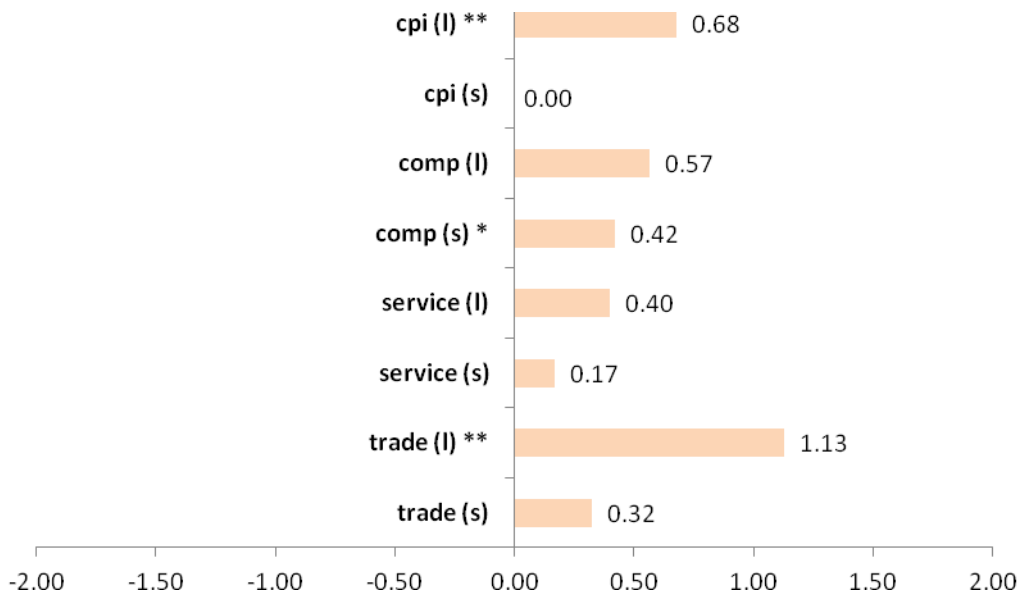
owned multinationals. This is despite the presence of a multinational wage premium independent of unionisation controls, which is suggestive of diminished bargaining power both within foreign-owned enterprises, and at higher union densities (Braun 2008). However, Philip Lane (1998) has previously commented on the depressive effects of national wage moderation in Ireland under social partnership, according to which workers were less advantageously placed to take advantage of rising growth. Concurrently, the flexibilisation associated with a globalising labour market within Ireland, although having yielded gains in real wages, has led to the emergence of a flexicurity model based on high flexibility, and lower security relative to the protections afforded Danish workers within similar sectors (Heyes 2013). This conclusion is thus commensurate with existing accounts of the augmented power of footloose multinationals with lower relocation costs, which has tended to compromise the bargaining power of labour through traditional industrial action, and wage bargaining channels under threat of relocation, resulting in declining labour shares (Choi 2001; Hutchinson and Persyn 2009).

With regard to welfare, Hardimann et al (2008) have found little evidence for the compensation hypothesis in Irish data; in contrast with states such as the Netherlands where wage bargains were struck bilaterally with competitiveness-enhancement commitments, Irish social partnership agreements with lower sectoral coverage traded tax cuts for wage moderation, characteristic of the reactionary, conflict-mediating nature of Irish political culture (Hardimann et al 2008). In terms of welfare provision, Ireland's approach has remained similarly reactionary and characteristically liberal, with high reliance on means-tested income transfers, and the lowest levels of social services investment of the EU-15 (Kirby 2008). By contrast, Denmark remains one of the highest spenders on active labour market programs within the OECD, a feature which facilitates continual upskilling during periods of unemployment, and stronger individual labour market competitiveness (Campbell and Pendersen 2007: 317).

By contrast, Irish welfare reform has been piecemeal and reactionary, with new measures added in an ad-hoc manner in response to emerging needs (Kirby 2008: 24). Furthermore, the reliance of Irish welfare funding on regressive sources such as direct goods and services taxes, corporation and property tax has left national budgets vulnerable to external shocks such as fdi volatility, the effects of which are evident in the dramatic post-2007 spurious upsurge in 'labour share' following the collapse of Ireland's GDP in the wake of the global financial crisis, and demand slump (ibid: 25). The reactionary nature of Irish welfare provision has therefore not served to significantly augment labour share in a manner which might favour the establishment of reservation wage mechanisms leading to compensation stabilisation (Rueda and Pontusson 2000). The negative coefficient on Danish levels likely reflects a stabilisation and decline in its welfare spending levels during periods of moderate labour share decline throughout the 1990's and 2000's (ax3, 4), during which it adopted a strategy of workfare, activation-oriented welfare provision, albeit one detached from the de-commodified neoliberal underpinnings of the liberal U.S. and U.K. (Torfing 1999). This likely accounts for the anomaly of the dual significance of Denmark's short and long-term welfare effects, which have tended to augment compensation stability in the short term during periods of economic vulnerability, whilst the state reduced its proportional welfare bill, and diversified its provision strategies over the last two decades. Overall, despite such changes in the nature of spending and provision, the social democrats have maintained favourable national poverty rates, with 12.6% of residents recorded as economically vulnerable, compared to 20.3% within the liberal cluster (Whlean and Maitre 2010: 323).



**Figure 12. Standardised coefficients, macro-economic model (Ireland)**



**Figure 13. Standardised coefficients, macro-economic model (Denmark)**

One of the most striking divergences between the Irish and Danish results is the opposing direction of the effect of global trade volume, which achieves long-term significance in both models. Computationally, we might expect that a substantial proportion of this Irish trade volume is subject to transfer pricing inflation, but the outcome of GNI-estimated labour share controls for this potential source of confounding. The opposing trends of global trade share across both contexts (ax3, 6) further suggest that Ireland has increased its global exposure substantially more than that of Denmark, resulting in greater exposure to international sources of risk and instability. The effect of this instability on labour share manifests through a number of related channels; a depression of domestic wages through competition from low-wage competitor countries and cheap input costs – an effect which is especially pronounced amongst developing countries where capital output often outstrips stagnant wages already at subsistence level –, and an increase in capital output under the increased mobility endowed by capital account openness, which raises rents disproportionately (Jayadev 2007). The evolution of the Irish corporate tax regime is exemplary of this tendency, whereby between 1987 and 1998, taxes on financial profits were cut along with corporate tax rates for all trading companies (Barry 2006).

That Ireland's trade volume has increased relative to Denmark's decline is equally striking, implying a consequent augmentation of bargaining power in the face of tighter product, and labour market regulation as suggested by the Danish positive coefficient. The nature of Ireland's greater openness in light of the behaviour of footloose firms is underscored with reference to the experience of Dell, which relocated core production overseas in the face of uncompetitive production costs, resulting in the emergence of subsidiary jobs of greater skill requirements, albeit with less labour-intensity than core manufacturing (Collins and Grimes 2010). Conversely, uncompetitive foreign labour costs have been noted as positively correlated with labour share returns, lending some credence to the mechanism of global exposure and comparative relocation costs as a critical source of compromised bargaining capacity (Hutchinson and Persyn 2009: 25). Equally, this model reveals that the associated proliferation of service sector employment has led to overall labour share depression albeit subject to the more positive influence of high-skilled technical employment. Similarly, trade exposure interacts with other institutional components to the detriment of unionisation in liberal market economies. As O' Farrell has shown, international competition lowers the effect of union premiums, by eliminating union wage premiums relative to the higher wages achievable through individual bargaining (2010). As the previous model has demonstrated, there exists a key distinction between both countries in terms of the protections afforded workers in the labour market; therefore, it is likely that this trade variable is more sensitive to depressive fluctuations in domestic conditions, and to the increased sensitivity of Irish firms of market signals concerning hiring and firing compared to the insulation experienced in Denmark. The demonstration of opposing trade effects across both contexts thus adds a crucial dimension of nuance to existing work which has found a consistent negative effect for global trade volume, and trade openness on labour share (see appendix 6).

In terms of the sectoral composition of employment and economic output, equally striking are the opposing coefficients on service sector employment between both countries. Typically, the accession of service sector employment has been associated with a dilution of union membership away from its core bases of industrial employment, although the parallel growth of public sector employment – especially in Denmark – has served to mitigate the depressive effects of sectoral transition on union density, the effect of which has been shown to vary across national contexts in terms of welfare provision, and of the nature of union membership, and benefit administration. These depressive effects of service sector growth have occurred in

the Irish context, despite associated workforce upskilling and real wage growth. Danish services employment has enjoyed comparative security from the effects of subsidiarity, outsourcing and subcontracting, as evidenced in the case of call centre work, a sector which is characterised by high degrees of labour flexibility. In finance and utilities, Danish labour has managed to retain a unified wage structure under market segmentation and firm rationalisation, resulting in both high-performance labour flexibility, and wage stability with union bargaining around wage structure, and working time arrangement (Sorensen and Weinkopf 2009). The lack of a collective hedge against rationalisation and labour market flexibility in Ireland, coupled with the above negative coefficient suggests that the individualisation associated with service sector expansion has limited such capacities substantially, resulting in profound long-term labour share depression.

Conversely, the growth of high-skilled, high-tech labour has managed to capitalise on the inherently flexible nature of mobile, short-term contract-based employment. Ireland rose to become one of the worlds highest exporters of software during the 1990's having capitalised both on sources of U.S. multinational investment, and on the substantial growth of an indigenous software sector (Ó Riain 2004). The informalised nature of such employment, coupled with low degrees of contractual security, contrary to that of low-wage service sector employment, has ensured that the skill-premium of such work has remained entrenched in both contexts, albeit to a greater extent in Ireland, consistent with the equalisation effects of coordinated market economies, relative to the greater potential skill-premium associated with liberal market economies. Given that flexibility within such sectors resides with the employee, rather than the firm, the accumulation of valuable skills in a flexible labour market suggests a shift in the bargaining capacities of labour relative to those of capital (Daudey and Decreuse 2006), an outcome which is largely substantiated by the above results. In such sectors, labour has tended to eschew collective representation, identifying more with management given its comparatively lower historical need for collective insulation (Ebbinghaus et al 2011: 111).

Finally, the opposing consumer price coefficients suggests a crucial distinction in terms of wage-lag (assuming the validity of the wage-lag hypothesis) which implies that real wage growth lags behind that of productivity (Raffalovich et al 1992). The long-term effects of price index fluctuation are non-significant in the Irish context, whilst that of the short term is both negative and significant, relative to the positive long-term effect of Denmark. This distinction is thus suggestive of the presence of divergent wage-lag dynamics, and of potential cyclical effects in the dynamics of labour share, consistent with our underlying institutional narrative of the capacity of compensation to keep pace with productivity growth in the Danish context. Relative to productivity growth, the proportion of labour compensation in Denmark is stationary relative to that of Ireland (ax5, 10), despite substantial gains in financial sector capital output.

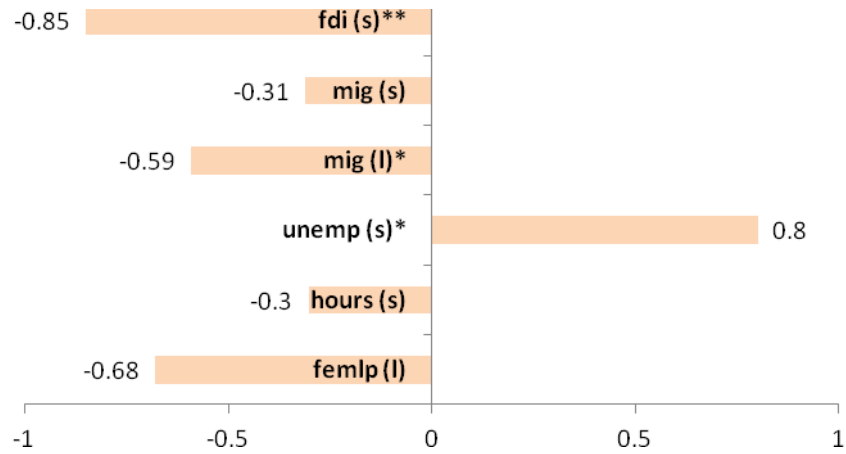


**Table 3. Labour market and financialisation models of labour share (OLS)**

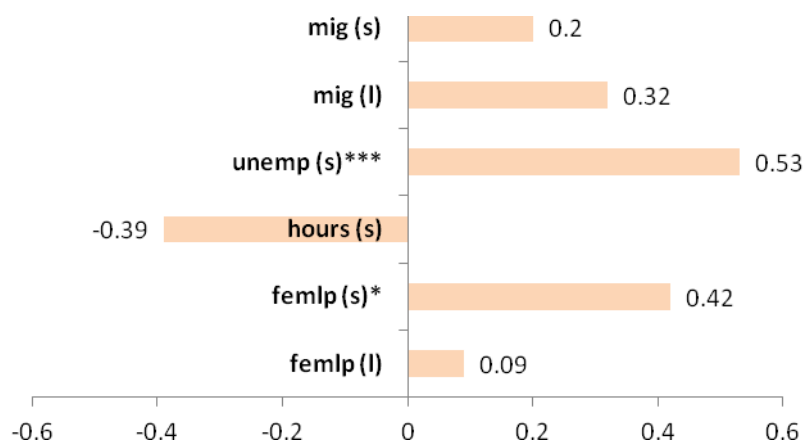
$\Delta$ ls (Labour share, GNI denominator)				
	Ireland		Denmark	
	3. Labour market	4. Financialisation	3. Labour market	4. Financialisation
ls <sub>t-1</sub>	-1.485*	-1.100**	-.359*	.034
trade <sub>t-1</sub>		-8.761 <sup>+</sup>		4.436
$\Delta$ fdi	-1.493**			
$\Delta$ mig	-.107		.193	
mig <sub>t-1</sub>	-.161*		.267	
$\Delta$ unemp	.830*		.599***	
unemp <sub>t-1</sub>				
$\Delta$ hours	-.017		-.029 <sup>+</sup>	
hours <sub>t-1</sub>				
$\Delta$ femlp			.414*	
femlp <sub>t-1</sub>			.061	
femlp 83-94 <sub>t-1</sub>	-.288			
$\Delta$ finance				.344**
finance <sub>t-1</sub>		-.100		-.039
$\Delta$ ls_const		.267***		
ls_const <sub>t-1</sub>		.328**		
$\Delta$ ls_man				-.088
ls_man <sub>t-1</sub>				-.102
$\Delta$ ls_serv				.785*
ls_serv <sub>t-1</sub>				.049
$\Delta$ finance2		.138		.727
Constant	109.316*	43.781*	15.767 <sup>+</sup>	-.879
Adj. R <sup>2</sup>	.9347	.9349	.6489	.8351
Model F	(7, 4) 11.87*	(6, 7) 28.46**	(7, 18) 19.11***	(9, 9) 16.65***
AIC	21.5908	36.8521	66.5961	43.5982
Mean VIF	4.33	8.80	1.84	4.94

**Table 3. Labour market and financialisation models of labour share (OLS)**

$\Delta$ ls (Labour share, GNI denominator)				
	Ireland		Denmark	
	3. Labour market	4. Financialisation	3. Labour market	4. Financialisation
N	12	14	26	19



**Figure 14. Standardised coefficients, labour market model (Ireland)**



**Figure 15. Standardised coefficients, labour market model (Denmark)**

Finally, a set of additional models are included, specifying a number of labour market conditions (3), along with those associated with increased financialisation (4). We have introduced a subtle distinction into the Irish labour market model however; given that public employment consolidated comparatively earlier in Denmark, coupled with the presence of protections favourable to female labour market accession, the comparative lag of female labour force participation renders it difficult to capture the effects of female accession in a manner which permits valid comparison. Consequently, female labour force participation is modeled in the Irish context with a period-specific trend dummy, capturing the effects of female accession between 1983 and 1994. The inclusion of fdi in the Irish model is mandated, in light of the centrality of fdi dynamics to Irish labour market composition, as established in the preceding analyses. Denmark presents as favourable to increased female labour force accession, despite the expected depressive effects of female entry into low-skill, part-time employment which, coupled with the balancing of family demands, has tended to dilute female union participation (Ebbinghaus et al 2011: 112). The growth of public employment in Denmark has served to mitigate the precarity of increased accession however, coupled with a protective institutional context of high unionisation, extensive bargaining coverage, and welfare provision geared toward labour market activation.

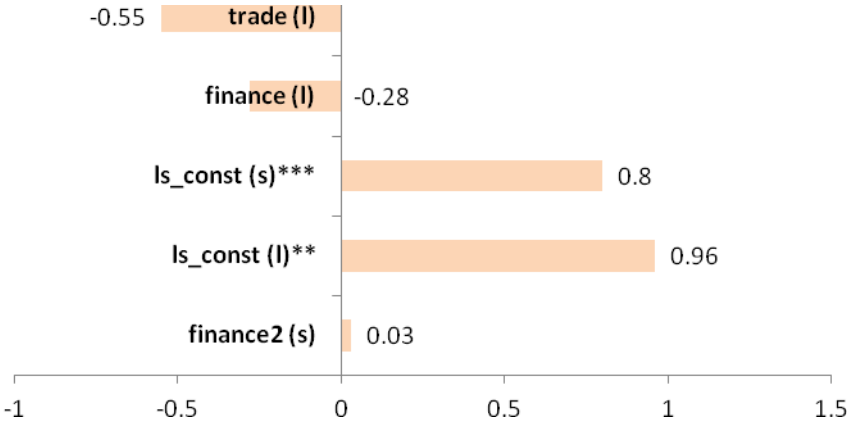
Conversely, the effect of Irish female labour force participation is negative, suggesting an intermediary effect on compensation depression vis-a-vis the absence of pro-active protections geared toward activation, and establishing greater workplace ties. Moreover, occupational growth has remained polarised in the Irish context, whereby parallel growth in both high and low-skilled occupations has led to a two-tier model of female labour market accession, between low-skilled personal services and sales, and high-skilled labour associated with public sector growth. In terms of human capital, women are achieving parity with men in terms of representation within certain sectors, however this has not translated into proportional advancements into upper-managerial roles (Turner and McMahan 2011). Public sector growth has been critical to both the Irish and Danish labour market structure, with both affording the opportunity for increased female participation. In Ireland, however, although females account for 65% of civil service employees, they represent only 12% of secretary generals (ibid: 236). Conversely, Denmark has seen the emergence of labour agreements of broader coverage, which include provisions for flexible working hours, negotiation of working time arrangements at firm level, and the provision of paid leave, thus enabling the achievement of a greater balance between work and family life, and long-term career advancement (Campbell and Pedersen 2011: 318; Torfing 1999).

Similarly, the depressive effects of structural employment change introduced in model 2 are reflected in the effects of net migration, which exerts a negative long-term effect in Ireland, compared to its moderate, insignificant effect in Denmark. During Ireland's period of upskilling and educational upgrading, a condition which facilitated its capitalisation on new streams of fdi during the 1980's and 1990's (Kirby 2008), the displacement of domestic labour created a consequent shortfall in the low-skilled labour supply, which was met by increased immigration, particularly from European accession states, facilitated by centralised labour market deregulation. The net effect of these combined trends has been a movement of mobile employees into sectors of diminished contractual security and comparatively lower union coverage, resulting in a shift in bargaining power toward employers.

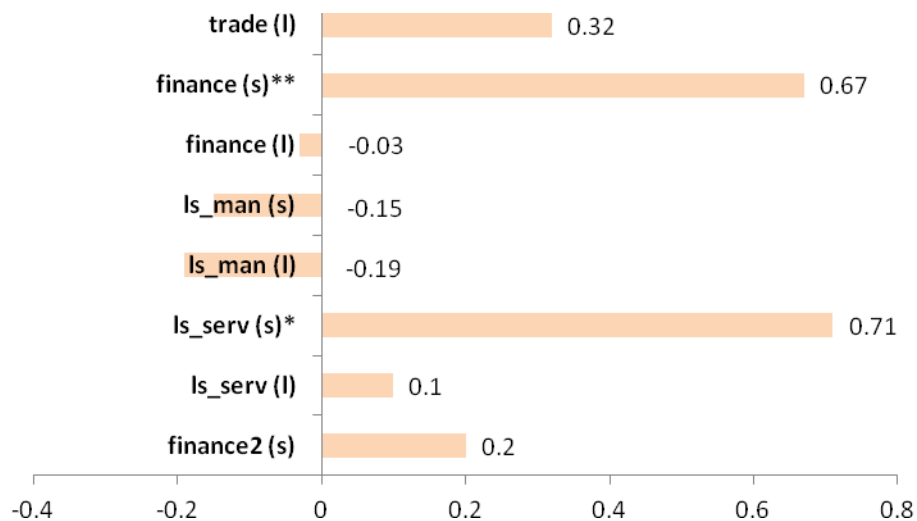
Counter-intuitively, the effect of unemployment in both contexts is significant and positive (long-term unemployment did not achieve significance in any specification). Typically, unemployment has been associated with a reduction in bargaining capacity owing to over-

supplies of labour which tend to depress labour shares, given the increased selectivity afforded firms in the selection process. In Denmark, the provisions of the Ghent system, and the extent of bargaining coverage combine to ensure a reduction in firm responsiveness to market signals concerning labour shedding, whilst favouring employee retention during times of economic hardship. Consistent with the skill profile of coordinated market economies, Danish activation measures as detailed in model 1, have further ensured long-term individual labour market competitiveness through upskilling. As a result, Danish unemployment levels have historically been muted compared to those of Ireland, and less susceptible to global economic fluctuation and signification (ax3, 11). Alternatively, the Irish direction may be indicative of the presence of labour hoarding, resulting in a substantial lag between periods of economic downturn, and labour share responsiveness. This hypothesis is borne out, in part by evidence of the past four years, which shows a drastic inflation of Ireland’s labour share following the initiation of the financial crisis in 2007. Figure 7 thus suggests that the initial shortfall in Irish GDP prefigured labour shedding by approximately 2 years, whereafter the most recent labour share figures exhibit a return to their downward trending behaviour under the influence of high unemployment.

Finally, working time exhibits little influence in both Denmark and Ireland, in which the effect is neither significant nor substantial in magnitude. Bargaining in the Danish services sector has often focused on the regulation of working hours and conditions beyond those of direct compensation (Sorensen and Weinkopf 2009), whilst its flexicurity measures have ensured commensurate labour market protections for vulnerable employees; in this sense, it is interesting that aggregate working hours imply a marginally depressive effect on labour share. In both Ireland and Denmark, annual working hours have fallen, albeit with substantial sectoral covariation, and differences in the extent to which clear boundaries between work and private life are demarcated (Ciccia and Ó Riain 2013). Falling working hours, coupled with increased labour input productivity growth thus appears to present a moderate source of labour share depression in the form of proportional compensation reduction. This is especially interesting in the Danish case, in which it appears the wage-lag effect is absent, suggesting further research into the components of labour share at sectoral level (i.e. productivity, labour input, employment diversity) is warranted.



**Figure 16. Standardised coefficients, financialisation model (Ireland)**



**Figure 17. Standardised coefficients, financialisation model (Denmark)**

The results of our parallel financialisation models are somewhat ambiguous however, suggestive of a crucial divergence from established cross-national narratives of the depressive effects of financial sector consolidation (Atkinson 2009; de Serres et al 2002; Diwan 2001; Guscina 2006; Kus 2012; ILO 2013). Variable specifications were employed in order to account for structural differences between Denmark and Ireland, and to control for the presence of alternating sources of confounding on the financialisation effect. For Ireland, this model included construction labour share, trade volume and financial sector wages. Given that the sectoral effects of finance are typically cited as key to its depressive influence on labour share, the specific nature of the Irish financial bubble, buoyed as it was by an outpouring of investment into labour-intensive construction suggests a counter-balance of the depressive influence of low financial labour shares, with those of high-share construction, a suspicion borne out by the substantial inequalities between both sectors in terms of observed labour share (ax4, 10). Furthermore in Denmark, the growth of its capital intensity in finance has been complemented with parallel service sector employment, and declining manufacturing employment, profitability and output (ax5, 11-13). Both Ireland and Denmark also exhibit negative correlations distributed across lags, between labour share and domestic credit volume, and financial sector gross operating surplus (ax4, 14 and 15; ax5, 14 and 15).

Strikingly, despite the substantial difference in output and capital relative to other Danish sectors, the effect of financialisation under additional sector controls, and in the absence of colinearity, is positive and significant. This model should be interpreted with a measure of caution however; although variance inflation diagnostics indicate an absence of colinearity, the non-significance of the correction term in the Danish model suggest the presence of cointegration may not be relied upon. Nonetheless, when compared to the negative effect of financialisation in the Irish context, the divergence suggests a crucial nuance has been overlooked in established narratives of the effects of financial sector capital intensity, which emphasise the depressive sectoral effects of financial sector intensity without a complementary illustration of institutional covariates, as has been attempted through the preceding models. Therefore, the comparative stationarity of Danish labour shares, relative to the substantial growth of its financial output, is suggestive of the efficacy of the redistributive

capacities of state and labour market institutions, which generate stability in labour/capital ratios, despite the inherently global orientation of much boundary-less financial activity.

By contrast, Irish capital flow deregulation resulted in a redirection of investment away from productive sources located within the real economy, toward speculative, short-term sources of liquidity in the form of property development (Ó Riain 2012). Therefore, despite boosting output and returns to labour in both construction and finance, the result was a precarious dependence on an inherently unstable source of growth, coupled with an increased reliance of state institutions – conversely associated with labour market resilience in Denmark – on precarious sources of funding. The overall effect of this sustained regime of financialisation and deregulation was an entrenchment of capital market porousness, an augmentation of firm mobility, and a compounding of the dependence of Irish growth on sources inherently exposed to global vicissitudes, such as those driven by fdi, and in the Irish context, fluctuations in international financial markets. The utility of this model resides not in its confirmation of the depressive influence of financialisation in the Irish context – arguably this model is incapable of factoring parallel processes associated with financialisation, such as growth in private credit volume, and the orientation of managerialism toward short-term dividends – but in its capacity to sensitise us toward the mitigating influence of resilience-augmenting state and labour market institutions, which appear to profoundly temper the depressive impact of financial sector growth in Denmark. On the basis of these results, it is clear that a structural-sectoral account of the impact of financialisation alone is insufficient to explain the contrasting dynamics of sectoral diversification across states.

## **Conclusion**

On the basis of the foregoing analyses, it is clear that existing heuristics of cross-national comparison are in need of revision, and that the inferences of cross-national labour share studies utilising pooled time-series modeling are overlooking a critical source of inter-state variation and nuance, both in terms of coefficient magnitude, and in terms of their elaboration of the mechanisms through which the covariates of labour share exert their influence in an opposing manner across national contexts. Although the varieties of capitalism perspective performs adequately as a locus around which to distinguish the essential institutional configurations of individual states, it insufficiently developed the scope of its empirical testing. Therefore, although existing research has emphasised the capacity of institutional ideal-type convergence to foster enhanced growth capabilities, little attention has been paid to the manner in which the differentiating axis of coordination generates divergent regimes of labour share distribution, giving rise to contrasting mechanisms of factor share mediation between states with enhanced union coverage, universalist welfare provision, and pro-active labour market policies & industrial relations systems. The preceding analysis has shown that the effect of a myriad of institutional and structural variables contrast profoundly between national contexts, whereby the complementarities described by the varieties of capitalism heuristic give rise to opposing historical outcomes for labour. Arguably, existing theory fails to sufficiently incorporate both this potential for inter-state configurational diversity, and for its role in determining national outcomes beyond those of growth augmentation. Similarly, the axis of welfare state retrenchment limits our ability to account for the diversification of welfare and protection measures in response to global change in a manner which, rather than devolving responsibility for social security to market or individual with the effect of increased insecurity, develops in line with the requirements of labour market diversification.

The preceding discussion offers only a partial perspective on the dynamics of compensation however. As a crucial intermediary between income inequality and national economic activity, labour's share of income determines the respective levels of compensation available for distribution amongst employees, a level which in turn influences the overall distribution of income at national levels. Further works in this area, particularly those concerning income inequality, should pay careful attention to the role of labour share in the income equality mix – a dimension typically absent from accounts which work merely from manifest income distribution alone. This restrictive level of operation misses a critical intermediary step in the establishment of relative compensation rates across countries, and indeed, in the very setting of the pool of income relative to capital returns. Crucially, this research has revealed that the range of institutional and structural covariates typically implicated in the income equality narrative exhibit robust relationships with labour share levels, such that additional works which fail to take account of the augmentation of capital-labour ratios run the risk – especially in comparative work – of missing a crucial axis of cross-national differentiation.

- Appendix 1: Data and descriptive statistics (Ireland and Denmark)**
- Appendix 2: Unit root tests (Ireland and Denmark)**
- Appendix 3: Combined variable graphs (Ireland and Denmark)**
- Appendix 4: Labour share and sectoral graphs (Ireland)**
- Appendix 5: Labour share and sectoral graphs (Denmark)**
- Appendix 6: Labour share meta-analysis**



## Appendix 1: Data and descriptive statistics (Ireland and Denmark)

Descriptive statistics, coverage and variable descriptions (Ireland)						
Variable	Mean	Standard Deviation	Min	Max	Coverage	Description
ls	63.908	4.373	54.341 (2003)	71.045 (1980)	1960 – 2012	Labour share
left	14.298	3.520	9 (1982)	23 (1996)	1960 – 2006	Left legislative seats as % all parliamentary seats
union	52.893	9.109	34.9 (2007)	64 (1978)	1960 – 2009	Union density (union members as % total workforce)
welfare	7.541	1.656	5.031 (2000)	11.245 (2010)	1970 – 2011	Welfare spending as % of GDP
fdi	4.005	7.828	-14.922 (2005)	26.148 (2000)	1974 – 2011	Foreign direct investment net inflows (% of GDP)
trade	0.623	0.182	0.412 (1976)	1.078 (2002)	1960 – 2012	% share of combined global goods imports and exports
service	62.918	5.051	55.6 (1983)	75.5 (2010)	1983 - 2010	Employment in services as % total employment
comp	37.145	21.040	14.299 (1986)	72.608 (2011)	1974 – 2011	Computer and communications as % total service exports
cpi	6.211	5.637	-4.480 (2009)	20.876 (1981)	1961 – 2011	Consumer price index - % change on previous period
mig	0.310	6.994	-14.495 (1960)	16.356 (2005)	1960 – 2009	Net migration rate
unemp	9.181	4.352	3.900 (2001)	16.800 (1985/1986)	1960 – 2012	Unemployment rate
hours	2188.293	242.775	1803.780 (2010)	2629.95 (1960)	1960 - 2011	Mean annual hours worked
femlp	51.531	9.216	36.907 (1984)	64.219 (2007)	1983-2011	Female labour force participation rate
finance	30.618	6.351	22.910 (1995)	40.676 (2008)	1995 – 2009	FIRE gross operating surplus as % all sectors
ls_const	95.124	9.602	84.498 (2006)	122.905 (2009)	1994 – 2009	Construction adjusted labour share
finance2	15.092	1.623	12.012 (1995)	17.328 (2009)	1995 - 2009	Wages and salaries of finance as % total economy

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**Descriptive statistics, coverage and variable descriptions (Denmark)**


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<b>Variable</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Min</b>	<b>Max</b>	<b>Coverage</b>	<b>Description</b>
ls	59.234	1.845	55.882 (2006)	62.6444 (1980)	1960 – 2012	Labour share
left	45.404	3.705	35 (1974)	50 (1972)	1960 – 2006	Left legislative seats as % all parliamentary seats
union	70.402	7.876	56.9 (1960)	80.8 (1983)	1960 – 2009	Union density (union members as % total workforce)
welfare	16.951	2.574	10.7 (1973)	20.3 (1993)	1970 – 2011	Welfare spending as % of GDP
fdi	1.744	3.939	-2.465 (2010)	22.497 (2000)	1974 – 2011	Foreign direct investment net inflows (% of GDP)
trade	1.025	.283	.549 (2012)	1.560 (1962)	1960 – 2012	% share of combined global goods imports and exports
service	69.686	3.939	62.5 (1981)	77.7 (2010)	1981 - 2010	Employment in services as % total employment
comp	35.618	5.203	27.551 (1997)	43.372 (1999)	1975 – 2004	Computer and communications as % total service exports
cpi	5.075	3.654	15.275 (1974)	1.258 (1993)	1967 – 2011	Consumer price index - % change on previous period
mig	1.441	1.500	-1.779 (1975)	5.541 (1995)	1960 – 2011	Net migration rate
unemp	4.679	2.638	.6 (1970)	9.6 (1993)	1960 – 2012	Unemployment rate
hours	1599.730	92.305	1493.94 (1994)	1879.65 (1970)	1970 - 2009	Mean annual hours worked
femlp	76.446	1.627	72.784 (1983)	79.102 (1992)	1983-2011	Female labour force participation rate
finance	33.534	3.340	25.088 (1970)	44.900 (2009)	1970 – 2009	FIRE gross operating surplus as % all sectors
ls_man	74.384	3.210	69.026 (2000)	81.846 (1974)	1970-2009	Manufacturing adjusted labour share
ls_serv	66.522	2.539	61.790 (1970)	73.095 (2009)	1970-2009	Services adjusted labour share

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**Descriptive statistics, coverage and variable descriptions (Denmark)**

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<b>Variable</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Min</b>	<b>Max</b>	<b>Coverage</b>	<b>Description</b>
finance2	14.875	2.125	12.8042 (1995)	18.409 (2008)	1990-2009	Wages and salaries of finance as % total economy

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## Appendix 2: Unit root tests (Ireland and Denmark)

Unit root tests (Ireland)*				
Variable	ADF (Level)	ADF ( $\Delta$ )	ADF ( $\Delta^2$ )	ADF Result
ls	-1.440 (-2.936)	-2.027 (-2.938)	-5.724 (-2.941)	I(2)
left	-3.072 (-2.950)	-	-	I(0)
union	-0.570 (-2.941)	-2.426 (-2.944)	-5.650 (-2.947)	I(2)
welfare	-2.016 (-2.964)	-2.450 (-2.966)	-4.132 (-2.969)	I(2)
fdi	-2.554 (-2.975)	-2.692 (-2.978)	-3.798 (-2.980)	I(2)
trade	-1.729 (-2.933)	-1.922 (-2.936)	-3.932 (-2.938)	I(3)
service	0.683 (-3.000)	-2.306 (-3.000)	-3.033 (-3.00)	I(2)
comp	0.177 (-2.975)	-2.933 (-2.978)	-3.598 (-2.980)	I(1)
cpi	-1.138 (-2.938)	-4.368 (-2.941)	-	I(1)
mig	-2.198 (-2.941)	-2.573 (-2.944)	-5.150 (-2.947)	I(2)
unemp	-1.936 (-2.933)	-2.702 (-2.936)	-5.430 (-2.938)	I(2)
hours	-1.160 (-2.936)	-3.673 (-2.938)	-	I(1)
femlp	-.787 (-3.000)	-2.638 (-3.000)	-3.905 (-3.000)	I(2)
finance	-1.699 (-3.000)	-1.424 (-3.000)	-	-
ls_const	-1.141 (-3.000)	.319 (-3.000)	-	-
finance2	-.412 (-3.000)	-2.623 (-3.000)	-	-

\*Lag setting of 3 used for all augmented Dickey-Fuller tests; 5% critical values of test statistic in parentheses

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**Stationarity tests (Denmark)\***

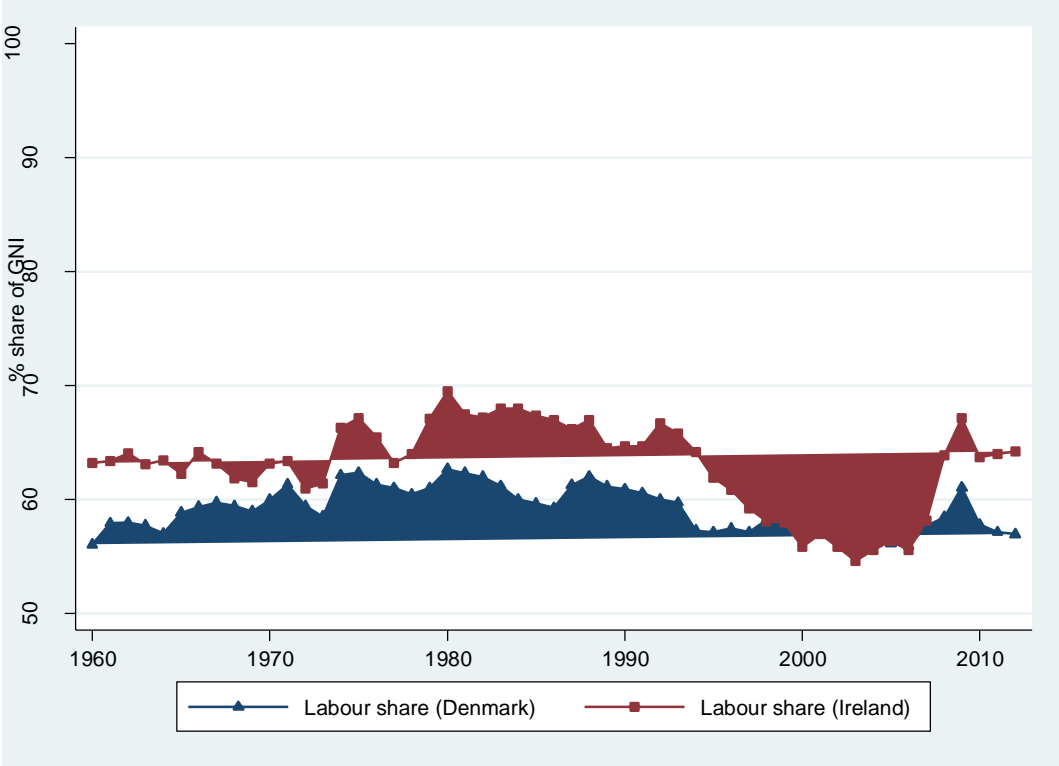
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<b>Variable</b>	<b>ADF (Level)</b>	<b>ADF (<math>\Delta</math>)</b>	<b>ADF (<math>\Delta^2</math>)</b>	<b>ADF Result</b>
ls	-1.661 (-2.933)	-4.731 (-2.936)	-	I(1)
left	-1.615 (-2.950)	-5.009 (-2.952)	-	I(1)
union	-1.904 (-2.941)	-2.125 (-2.944)	-4.769 (-2.947)	I(2)
welfare	-2.336 (-2.966)	-3.253 (-2.969)	-	I(1)
fdi	-2.950 (-2.964)	-5.566 (-2.966)	-	I(1)
trade	-0.985 (-2.933)	-3.594 (-2.936)	-	I(1)
service	1.465 (-3.000)	-1.824 (-3.000)	-3.615 (-3.000)	I(2)
comp	-2.809 (-3.000)	-2.179 (-3.000)	-3.622 (-3.000)	I(2)
cpi	-1.122 (-2.955)	-3.003 (-2.958)	-	I(1)
mig	-1.775 (-2.936)	-4.808 (-2.938)	-	I(1)
unemp	-1.682 (-2.933)	-4.111 (-2.936)	-	I(1)
hours	-2.130 (-2.969)	-2.302 (-2.972)	-2.992 (-2.975)	I(2)
femplp	-2.280 (-3.000)	-3.232 (-3.000)	-	I(1)
finance	-0.742 (-2.969)	-1.798 (-2.972)	-2.584 (-2.975)	-
ls_man	-1.915 (-2.969)	-4.312 (-2.972)	-	I(1)
ls_serv	-1.502 (-2.969)	-3.415 (-2.972)	-	I(2)
finance2	-.363 (-3.000)	-1.759 (-3.000)	-	-

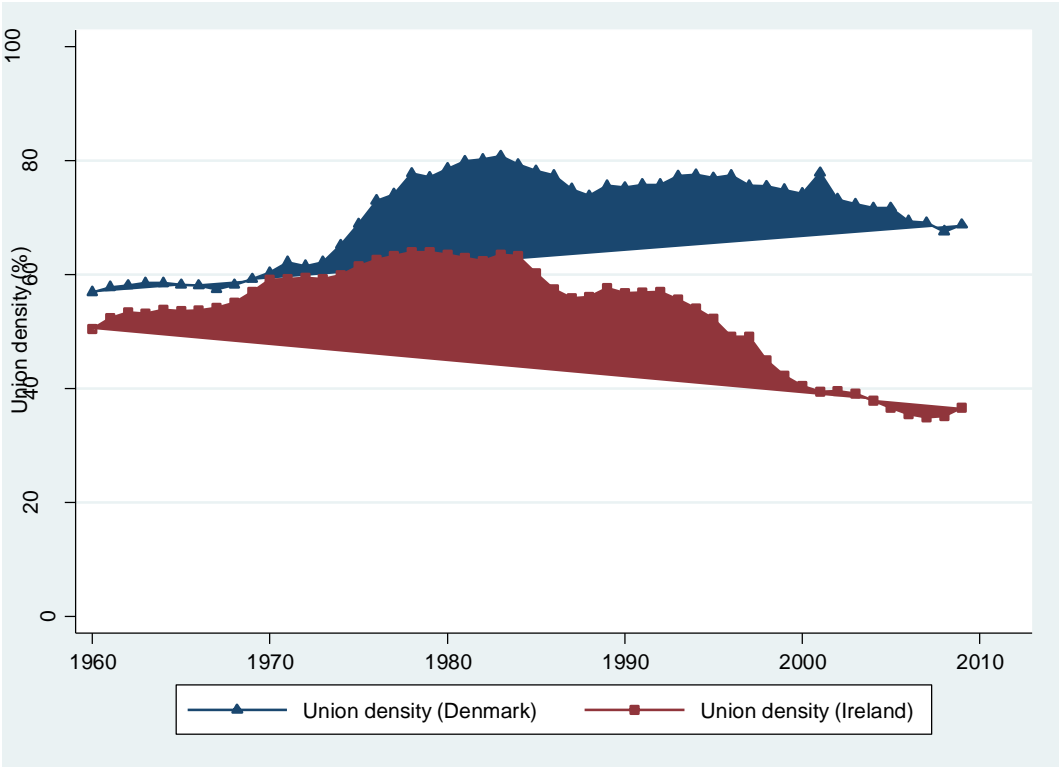
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\*Lag setting of 3 used for all augmented Dickey-Fuller tests; 5% critical values of test statistic in parentheses

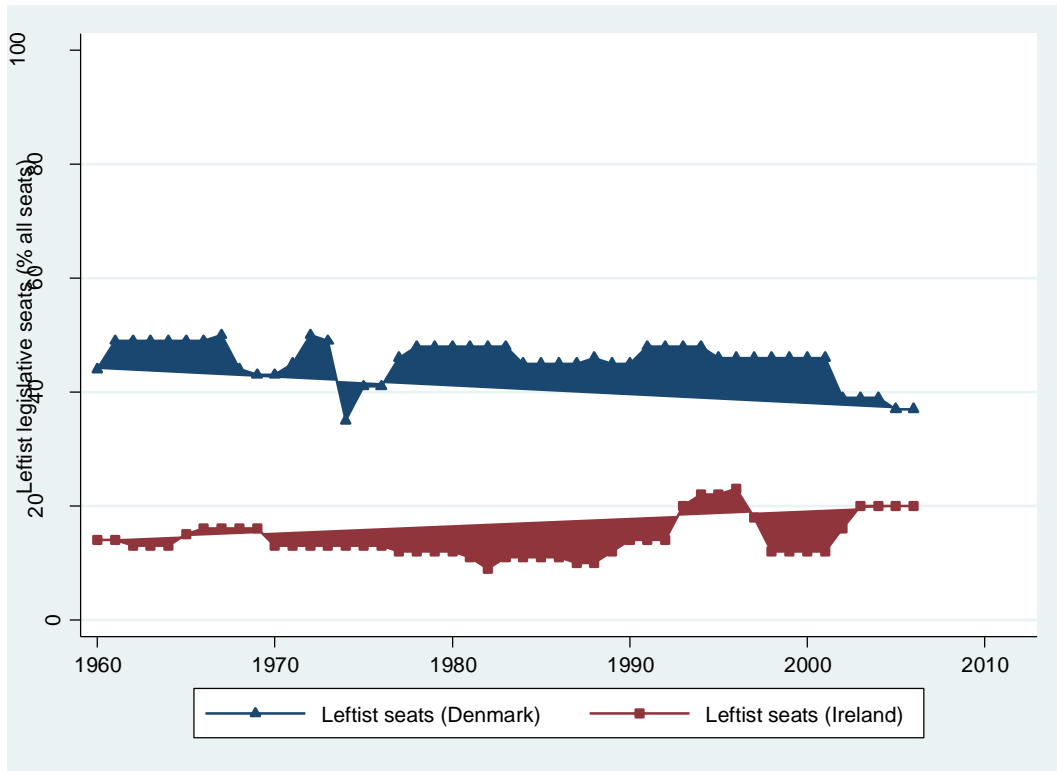
**Appendix 3: Combined variable graphs (Ireland and Denmark)**



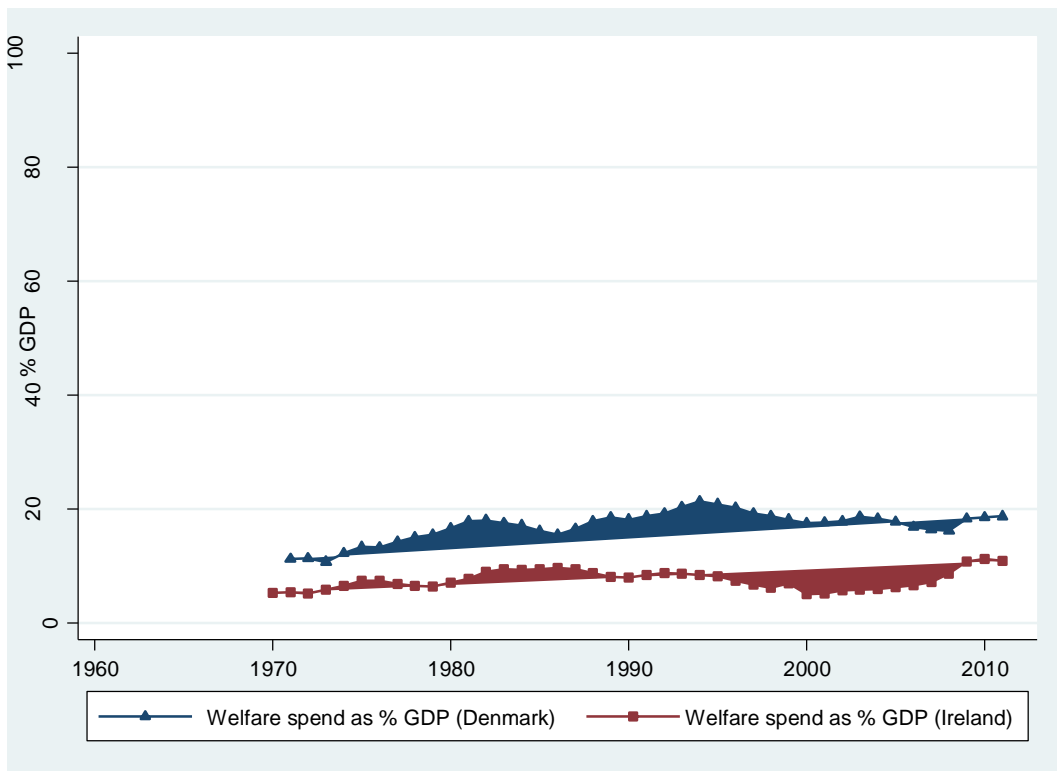
**1. Labour share (GNI Denominator)**



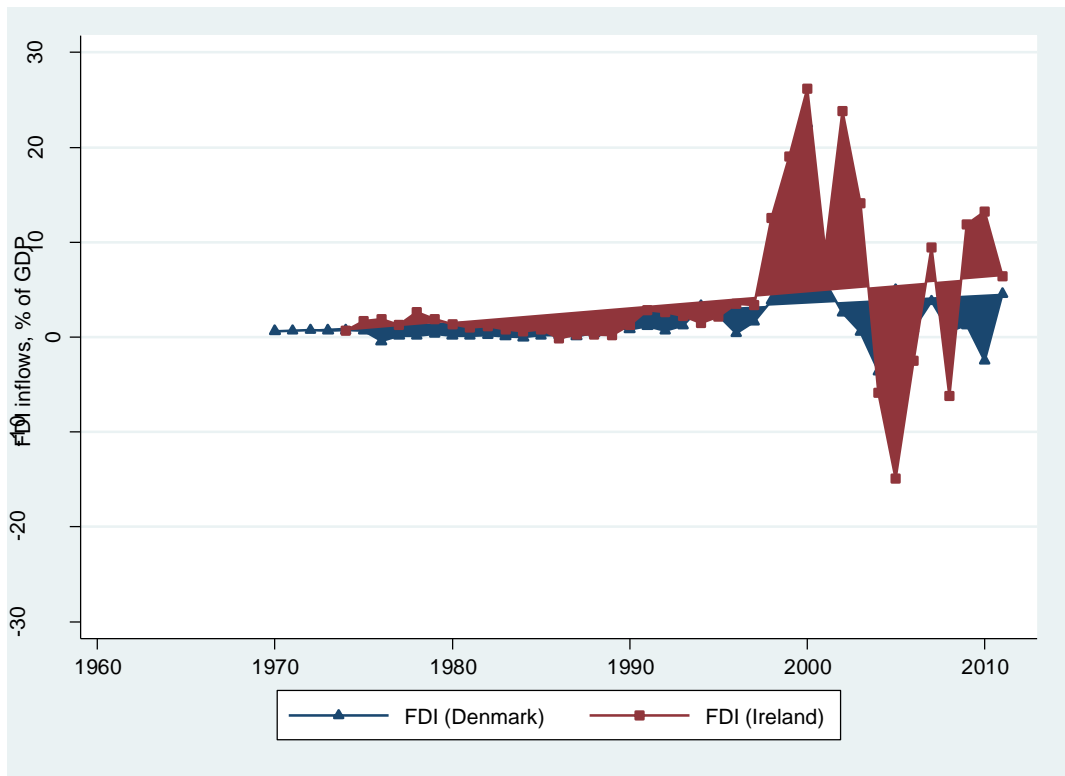
**2. Union density**



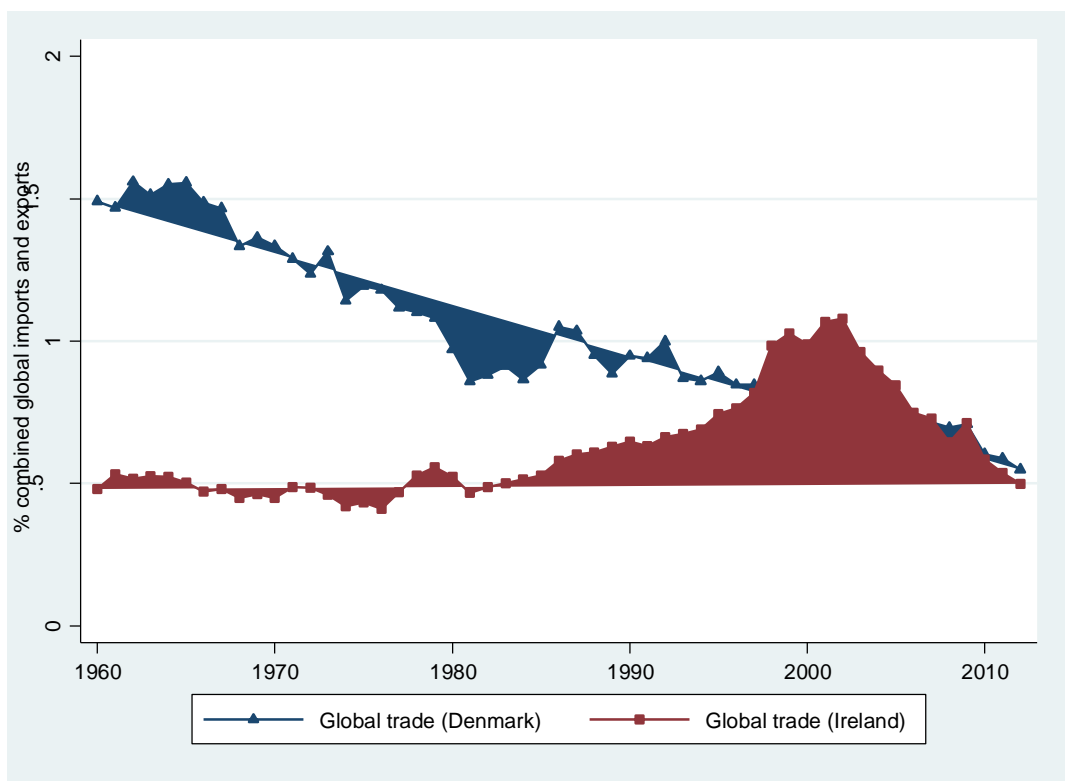
### 3. Leftist cabinet



### 4. Welfare spending

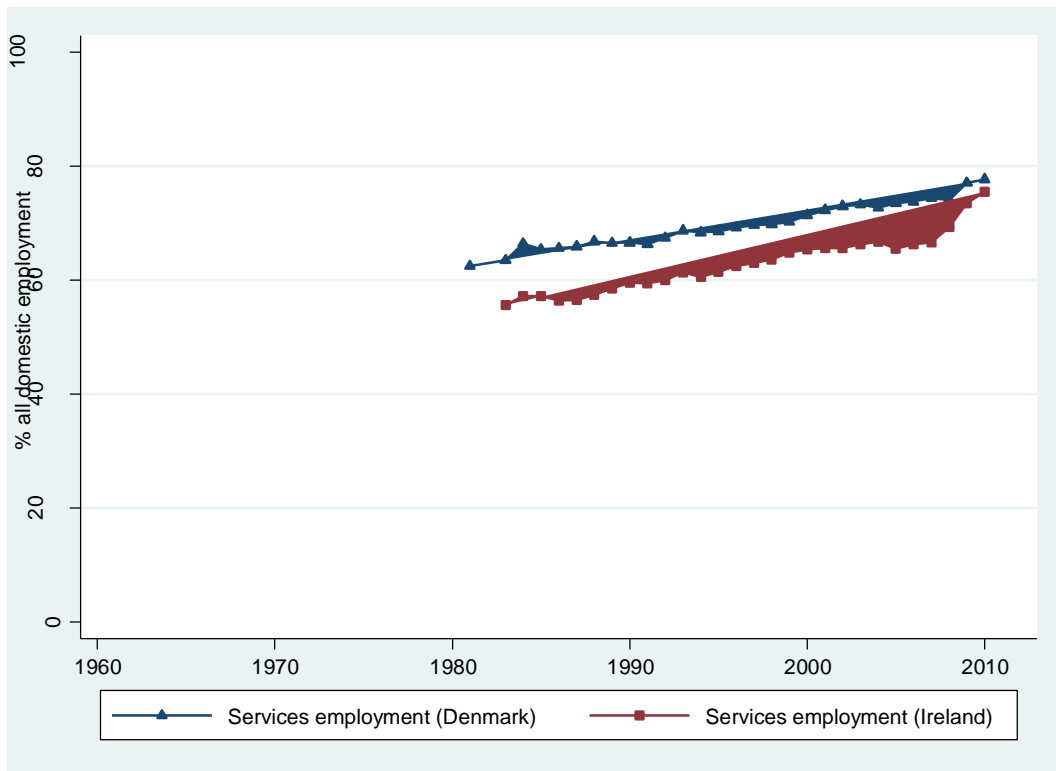


**5. FDI inflows**

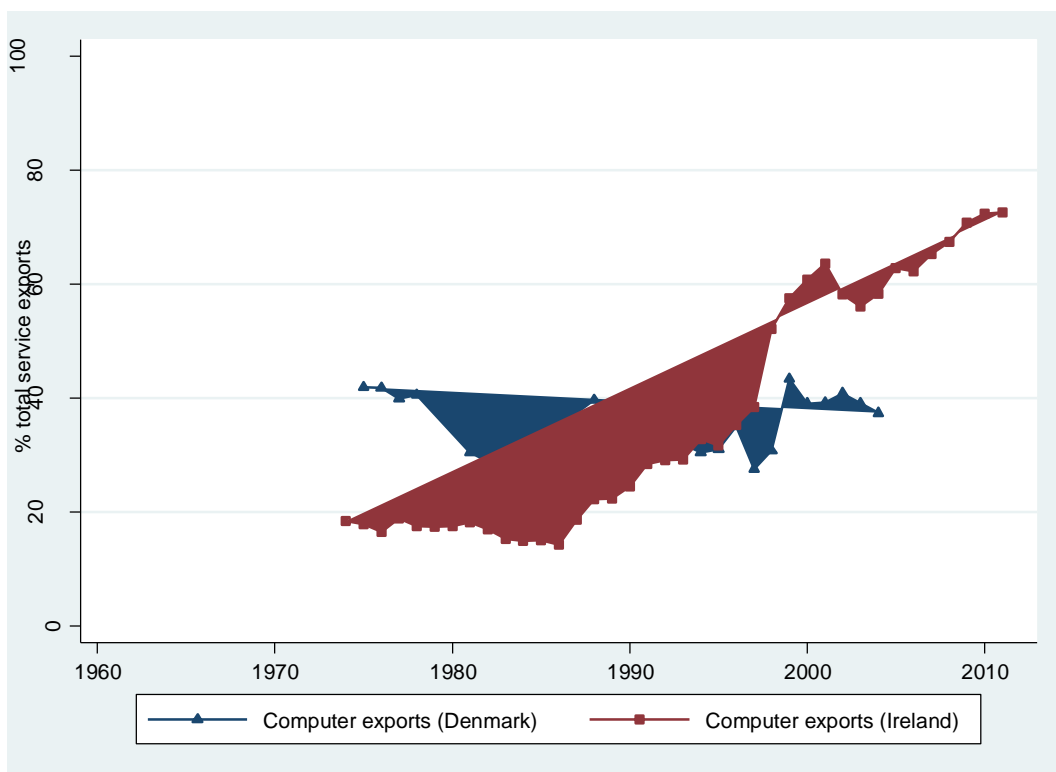


**6. Global trade share**

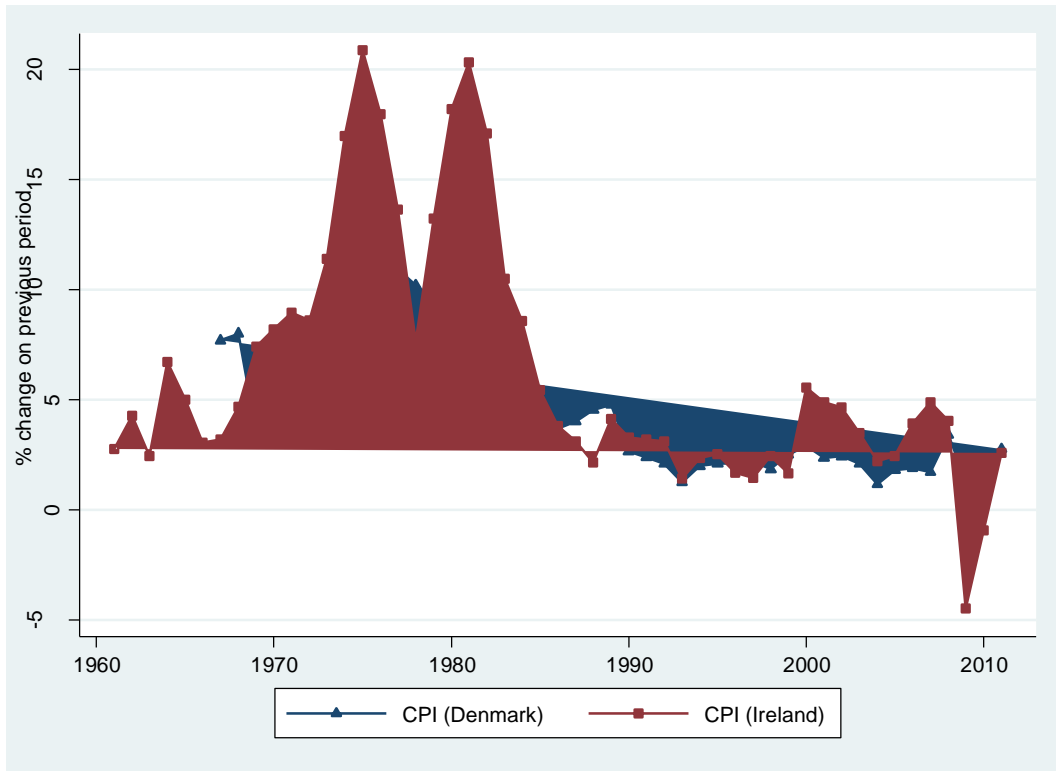




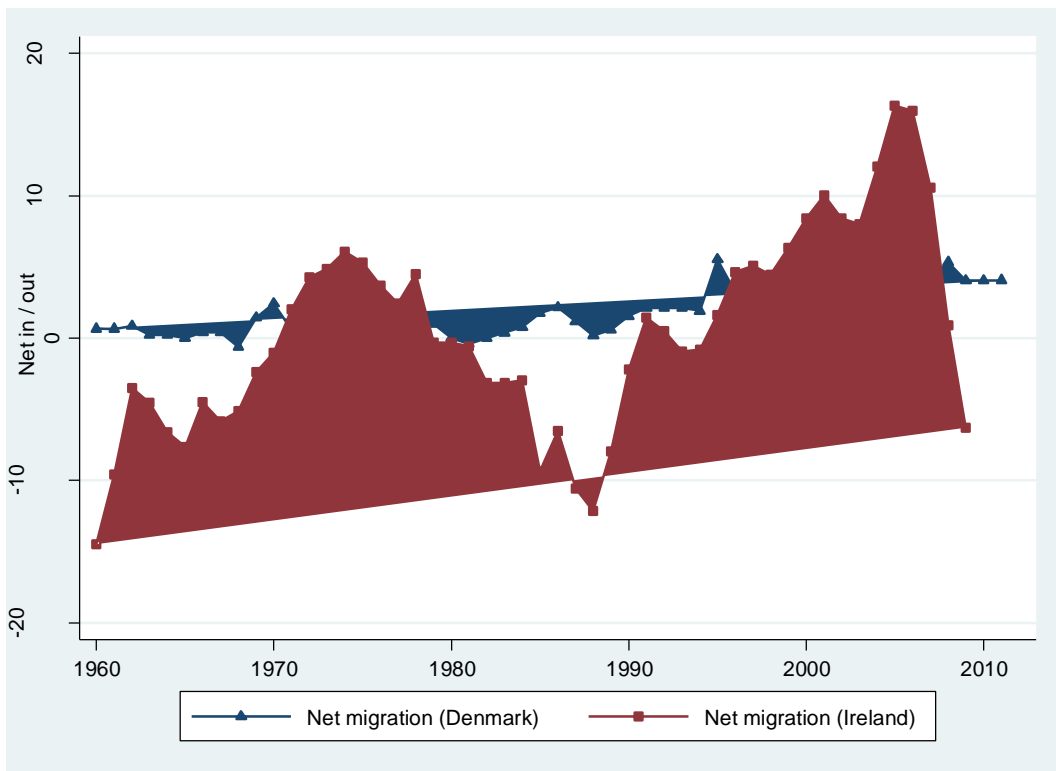
## 7. Service sector employment



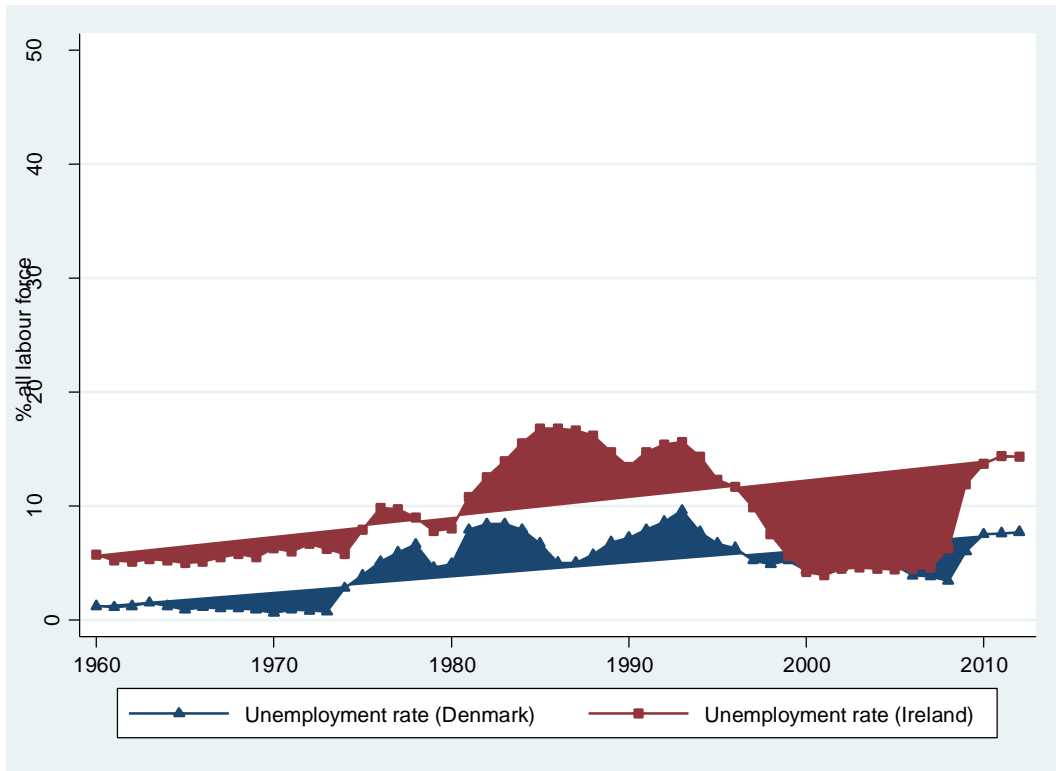
## 8. Computer and communications exports



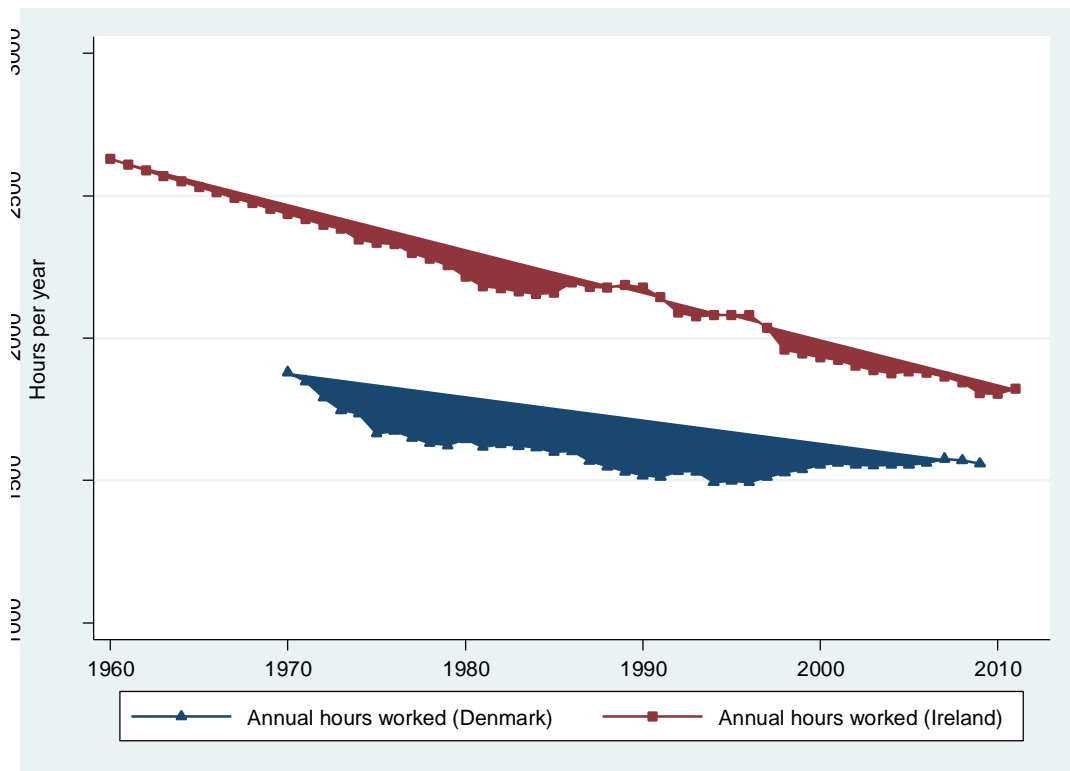
### 9. Consumer price index change



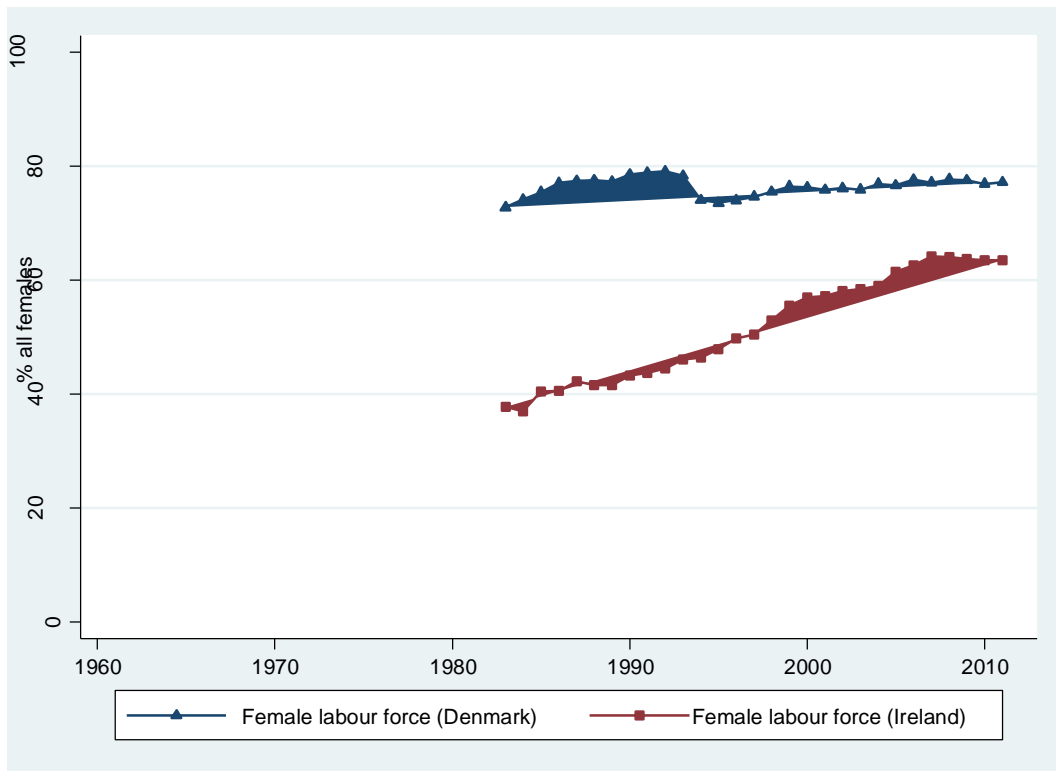
### 10. Net migration



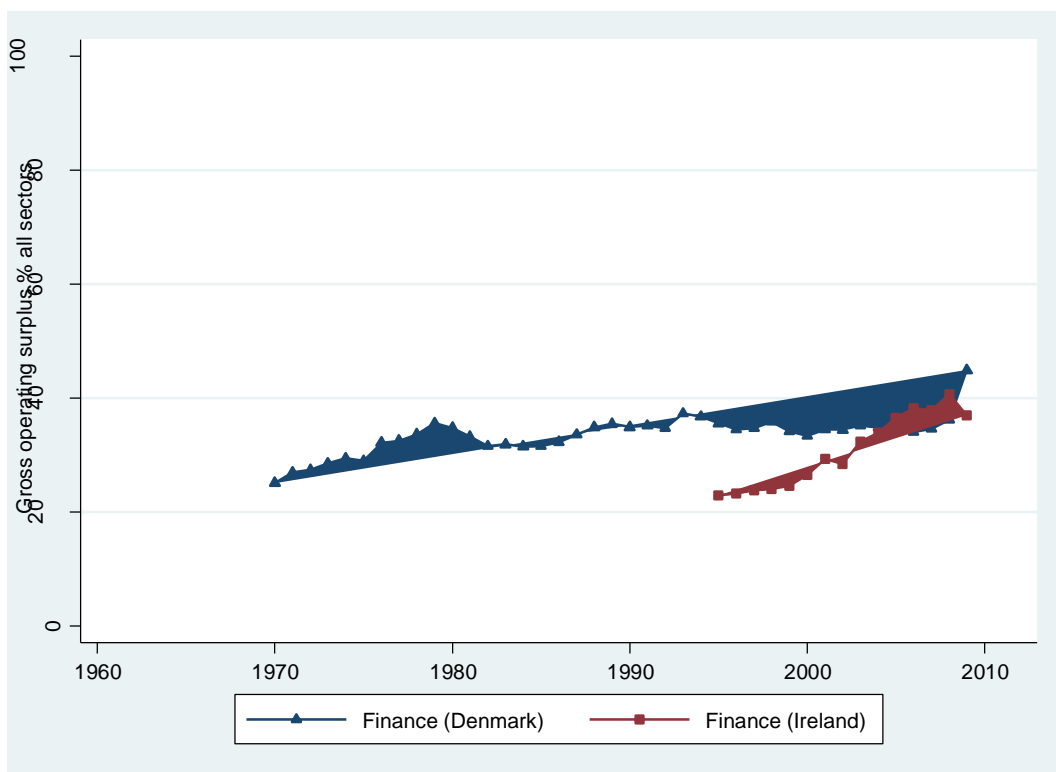
**11. Unemployment rate**



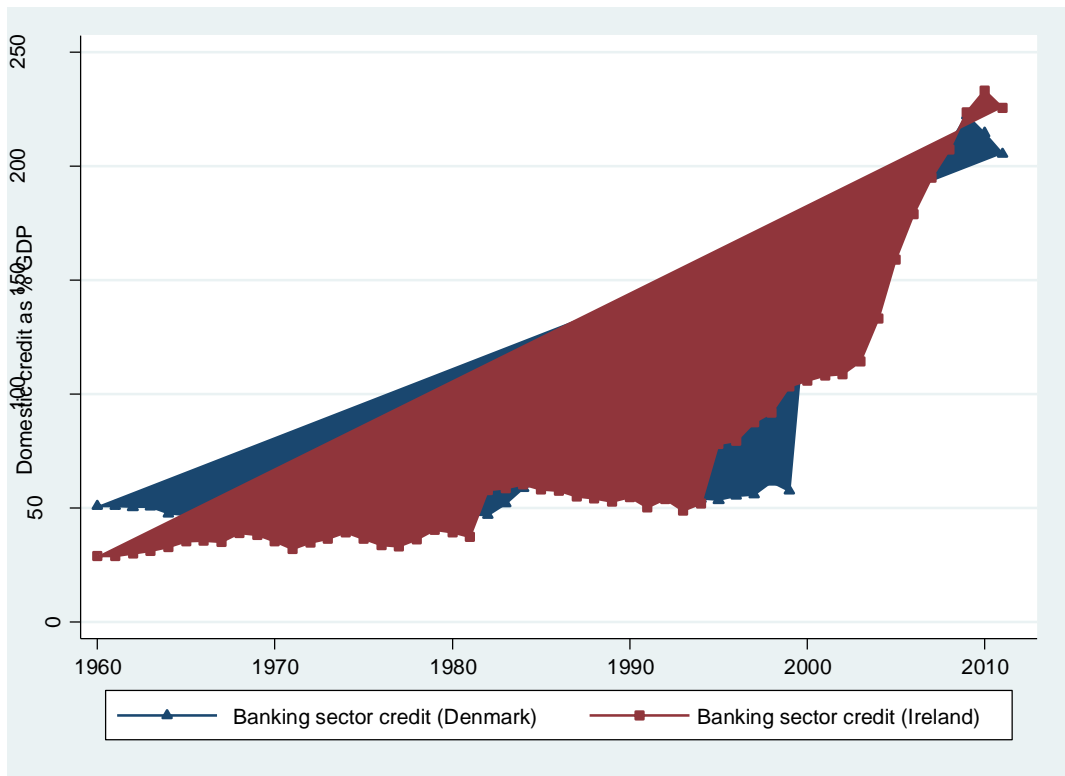
**12. Annual hours worked**



### 13. Female labour force participation

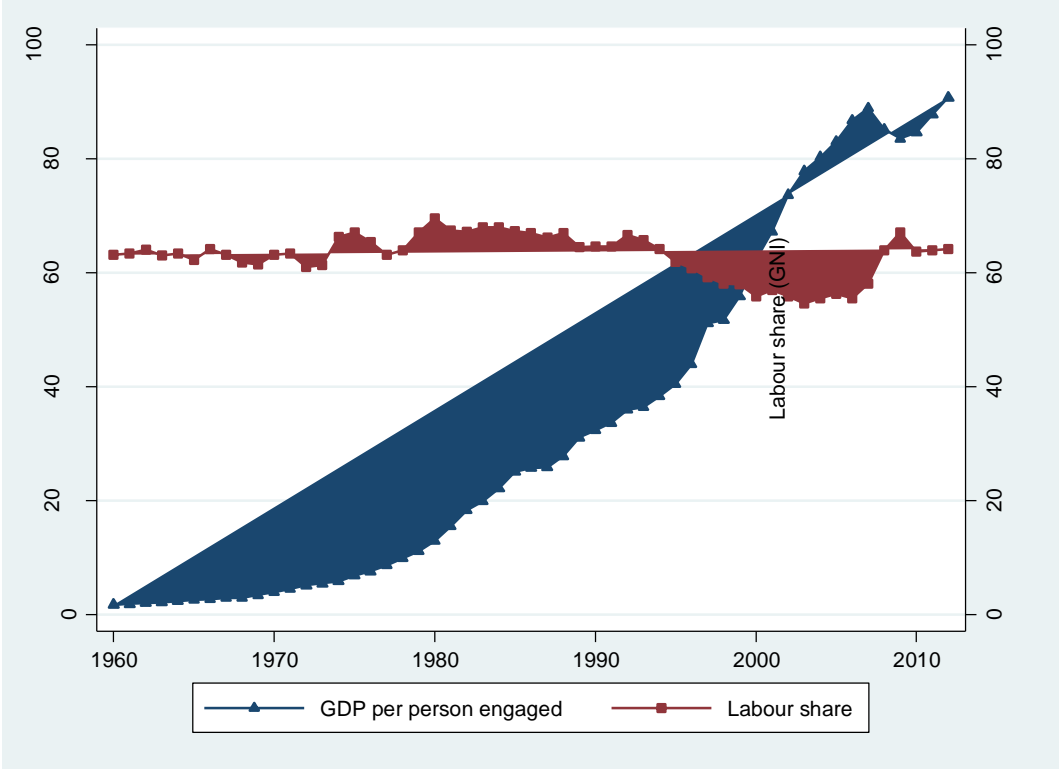


### 14. Financial sector gross operating surplus (% all sectors)

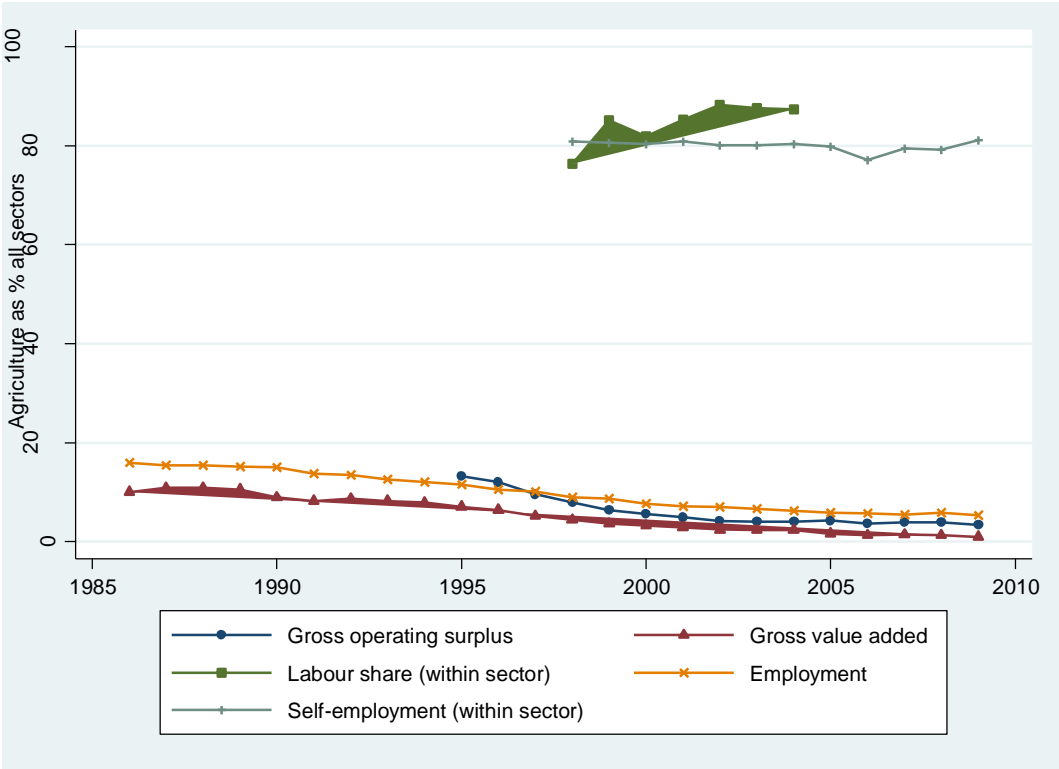


**15. Domestic credit provided by banking sector (% GDP)**

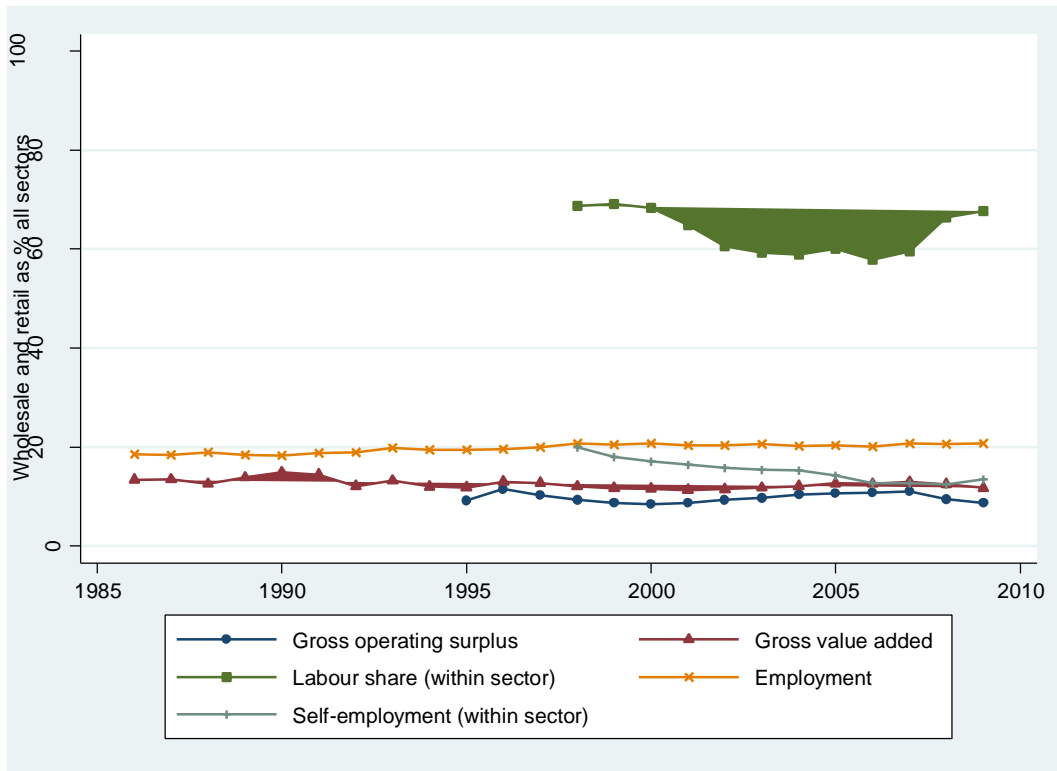
**Appendix 4: Labour share and sectoral graphs (Ireland)**



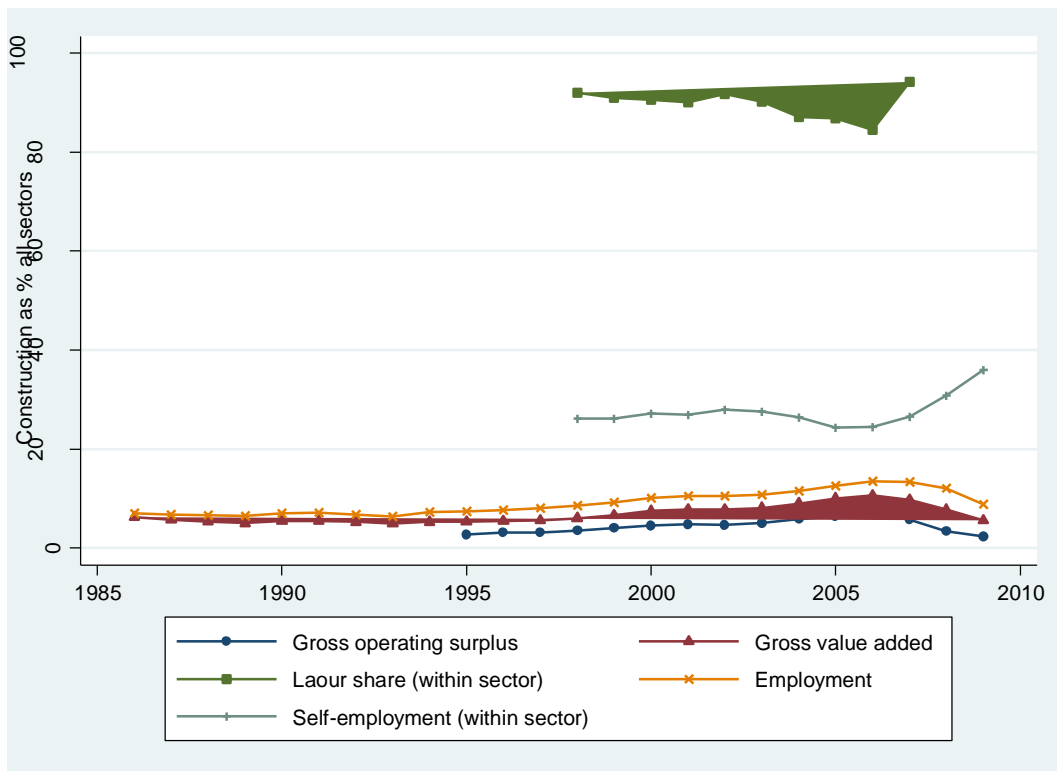
**1. Productivity growth and labour share trends: Ireland, 1960-2012**



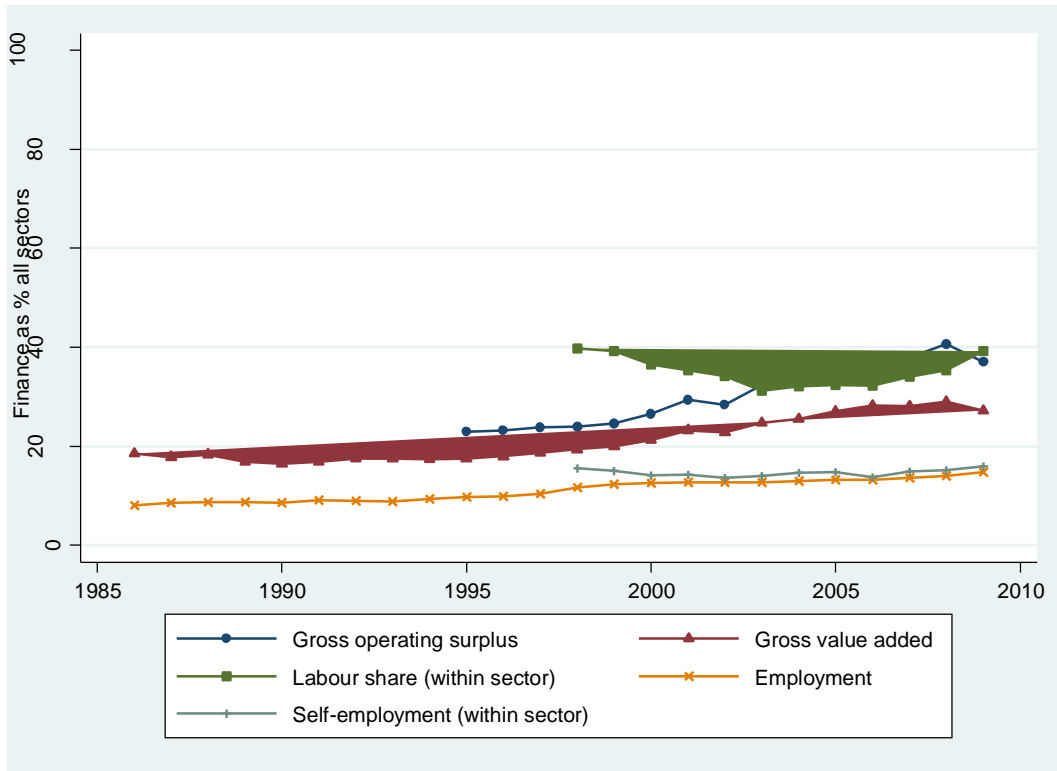
**2. Agriculture, 1986-2010 (collapse in GVA 2004-2005) (OECD)**



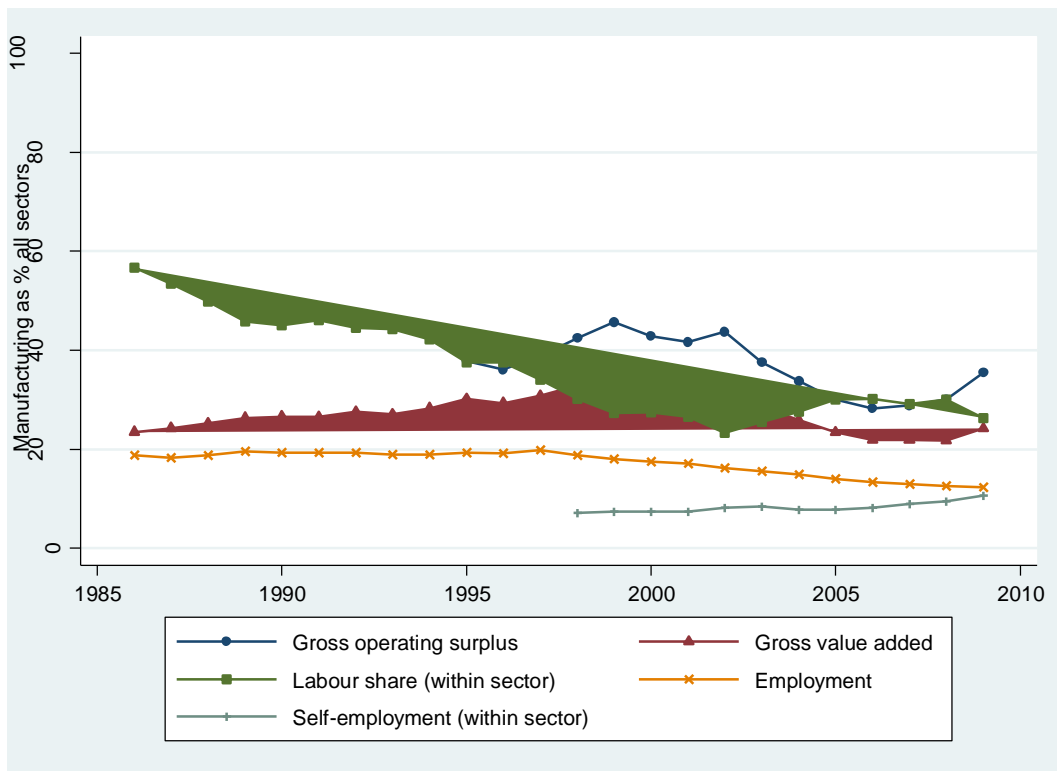
### 3. Wholesale, retail, restaurant and hotel, Ireland, 1986-2010 (OECD)



### 4. Construction, 1986-2010\* post-07 collapse in employment inflates self-employed remuneration estimate and resulting labour share (OECD)

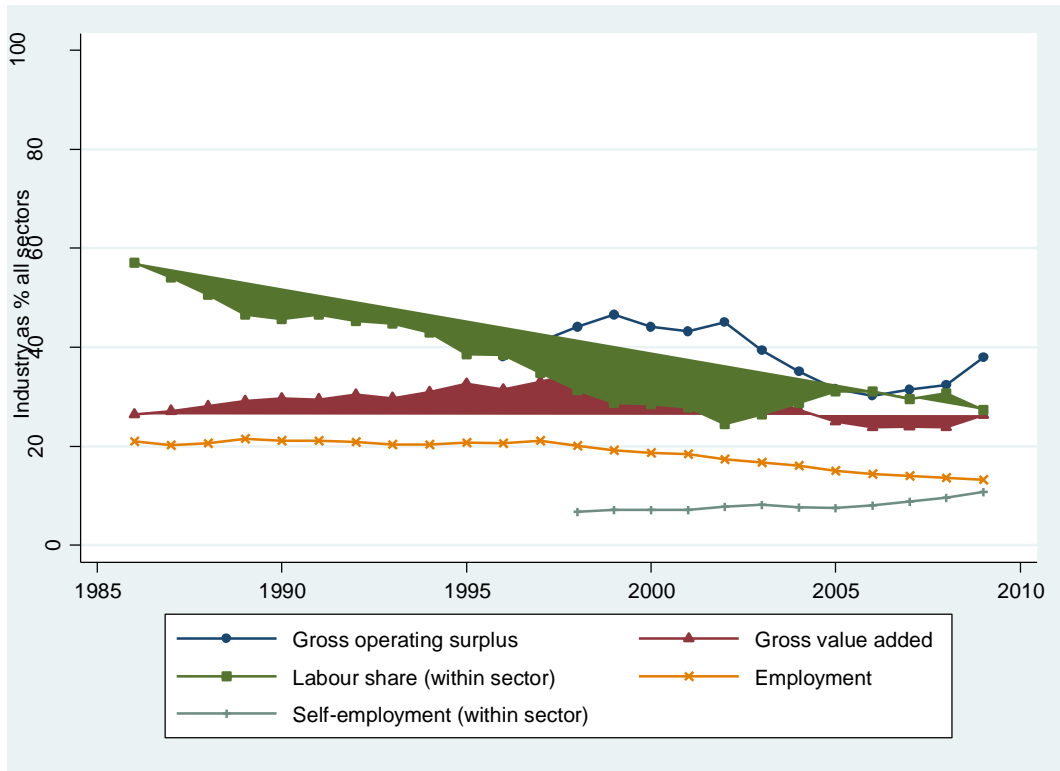


### 5. Finance, insurance and real estate, 1986-2010 (OECD)

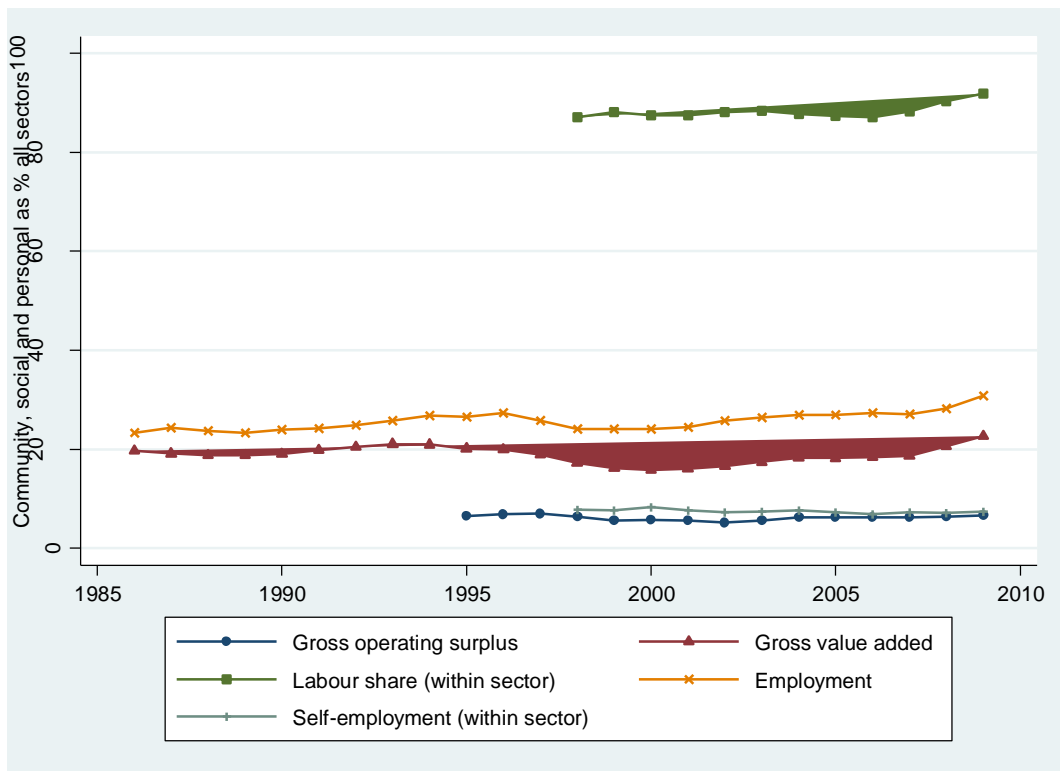


### 6. Manufacturing, 1986-2010 (OECD)

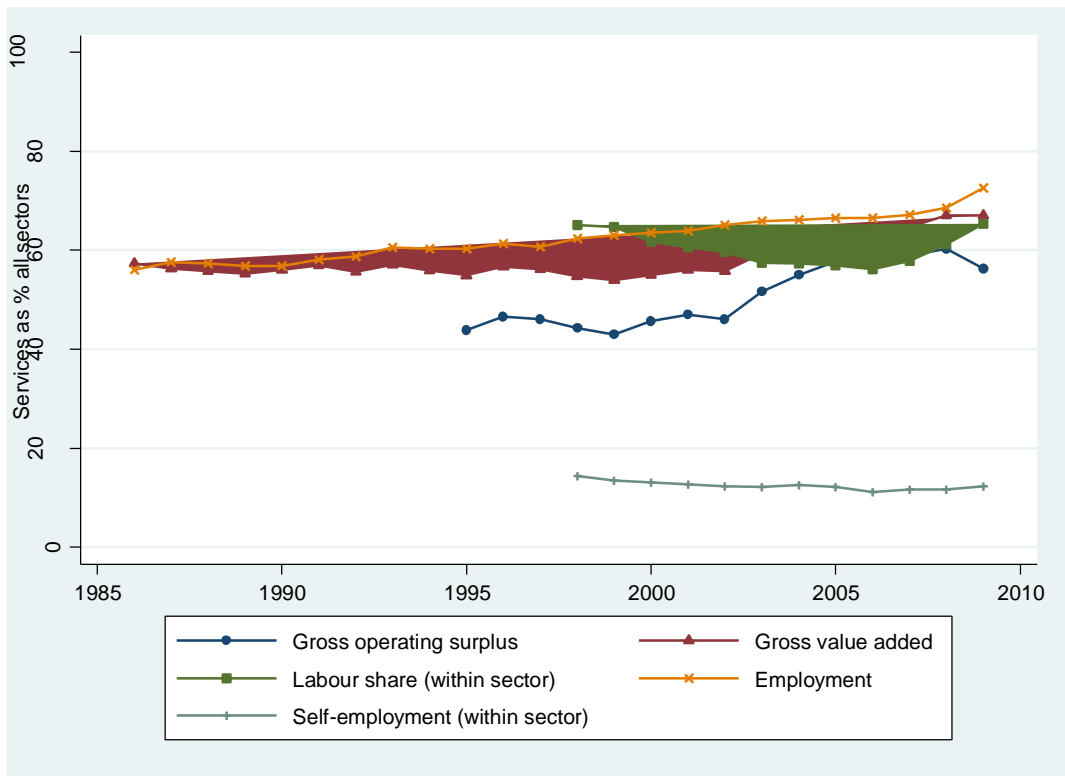




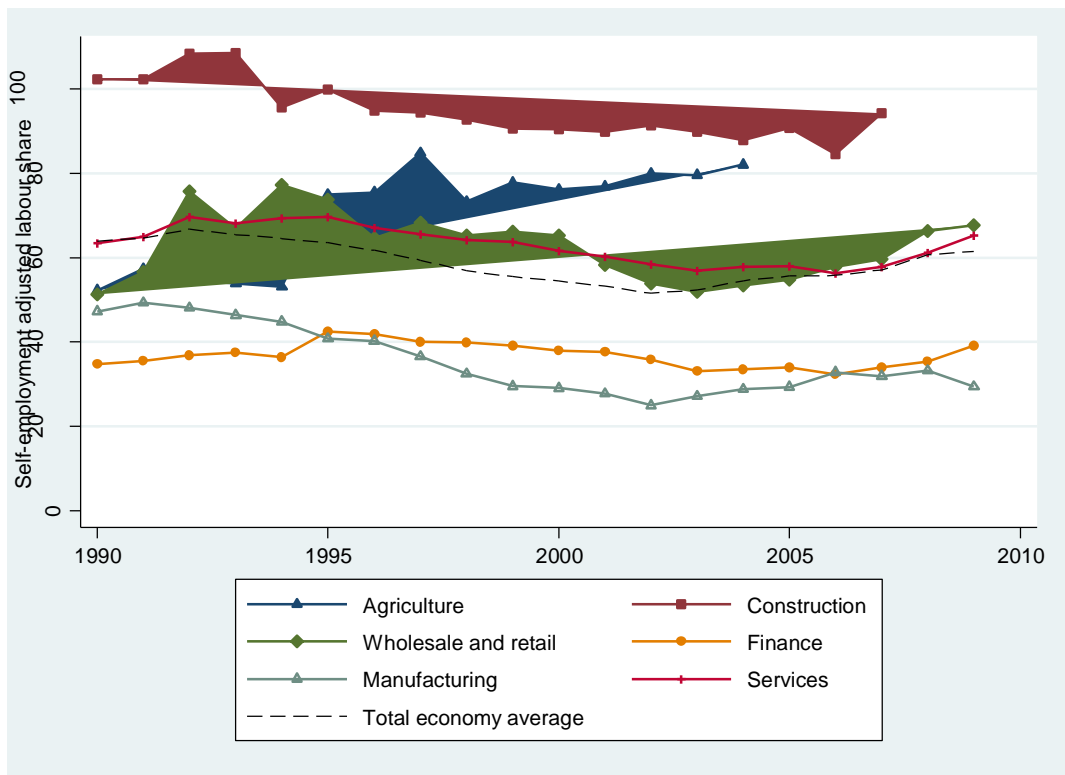
## 7. Industry, 1986-2010 (OECD)



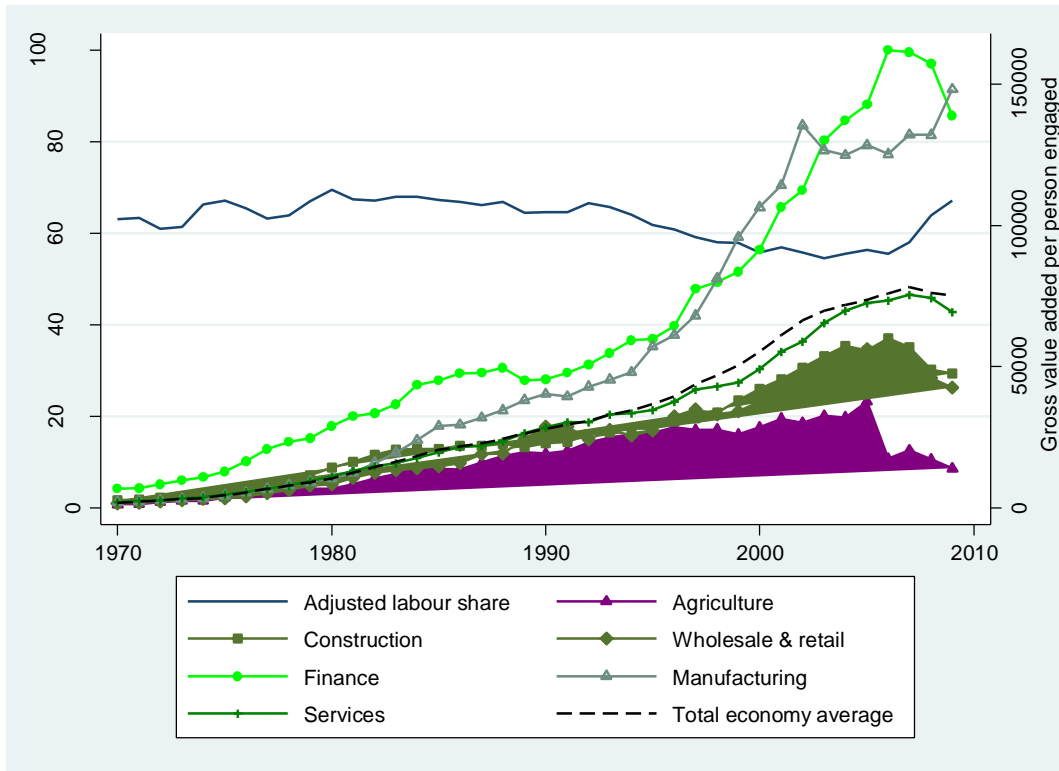
## 8. Community, social and personal service, 1986-2010 (OECD)



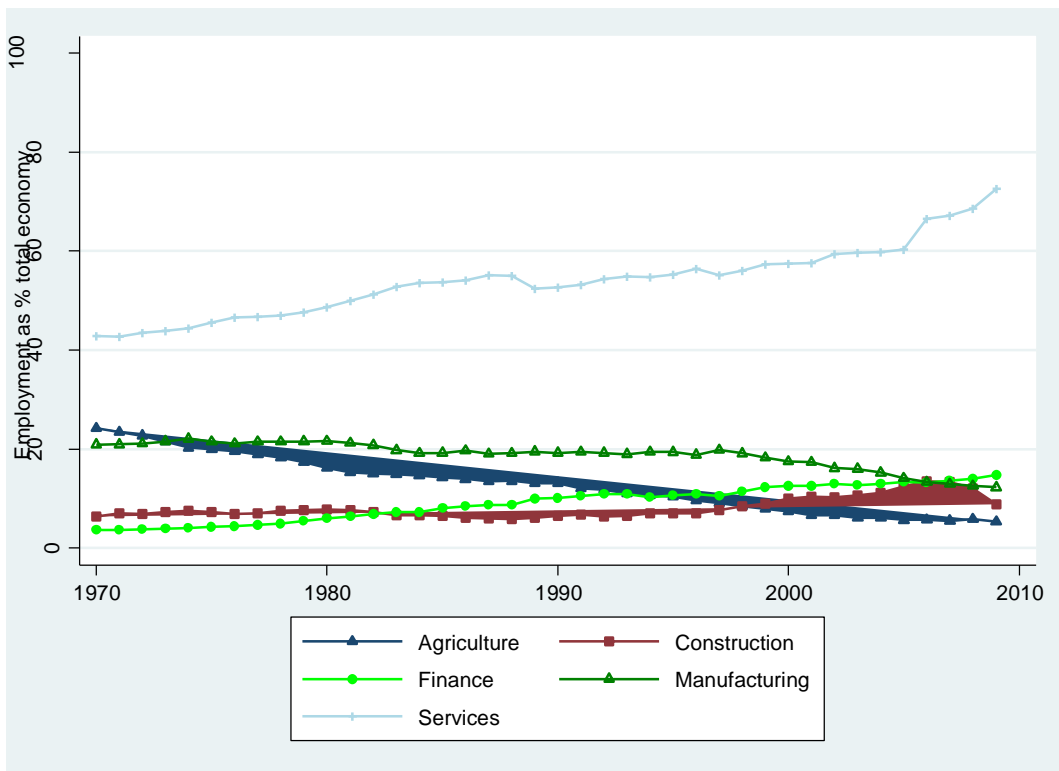
**9. Combined services, 1986-2010 (OECD)**



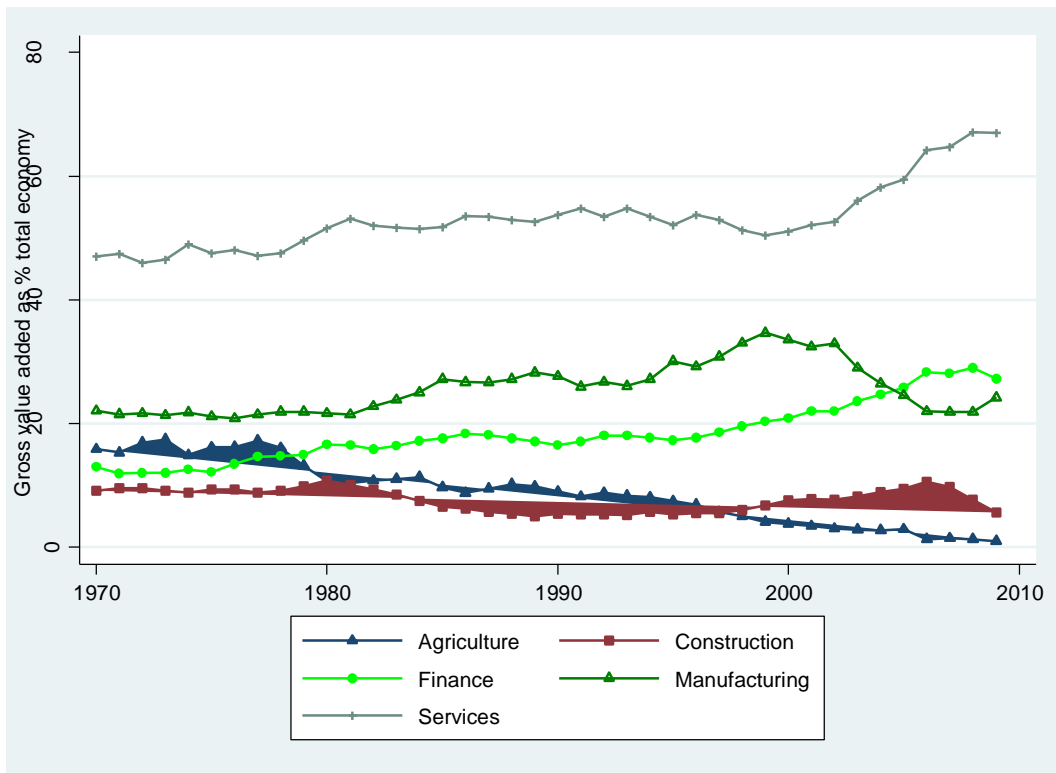
**10. Sectoral decomposition of adjusted labour share, 1990-2008 (KLEMS)**



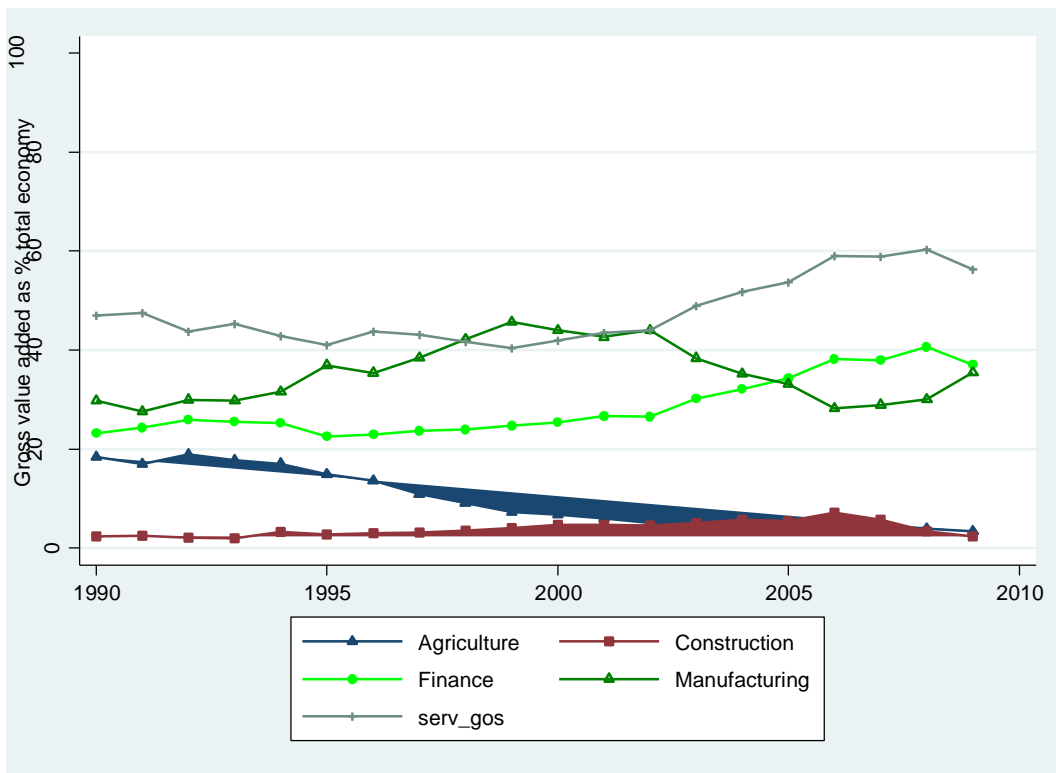
**11. Sectoral decomposition of crude productivity, 1970-2010 (KLEMS)**



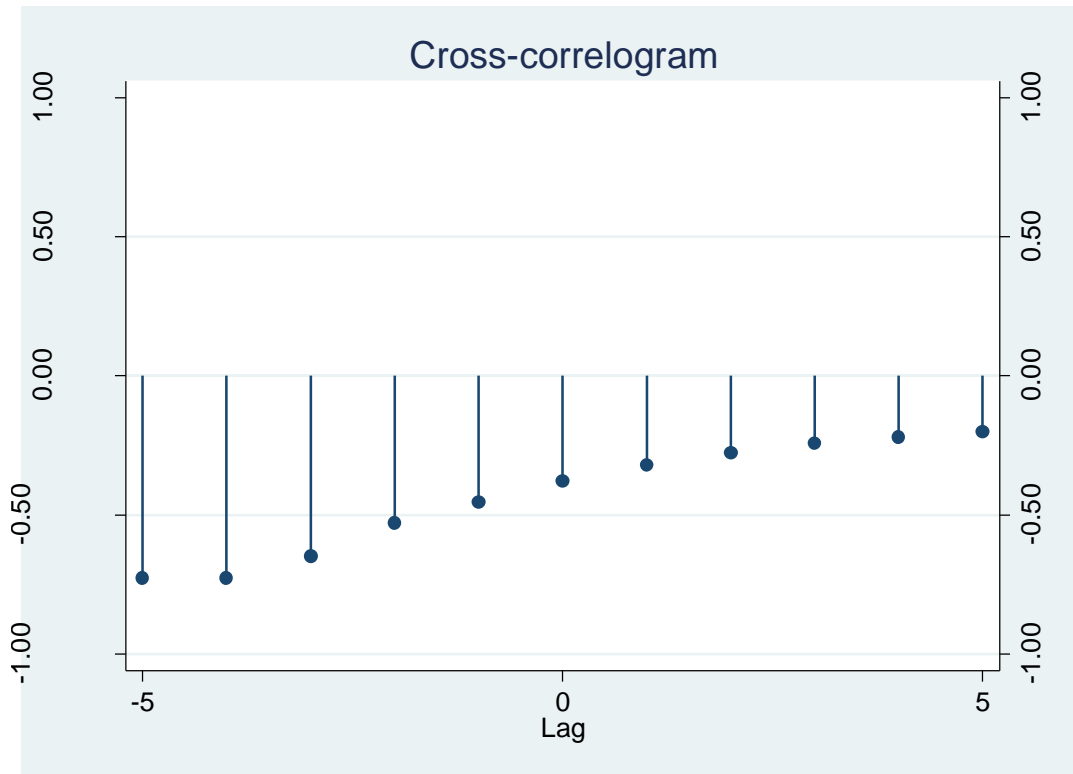
**12. Sectoral decomposition of employment, 1970-2009 (KLEMS)**



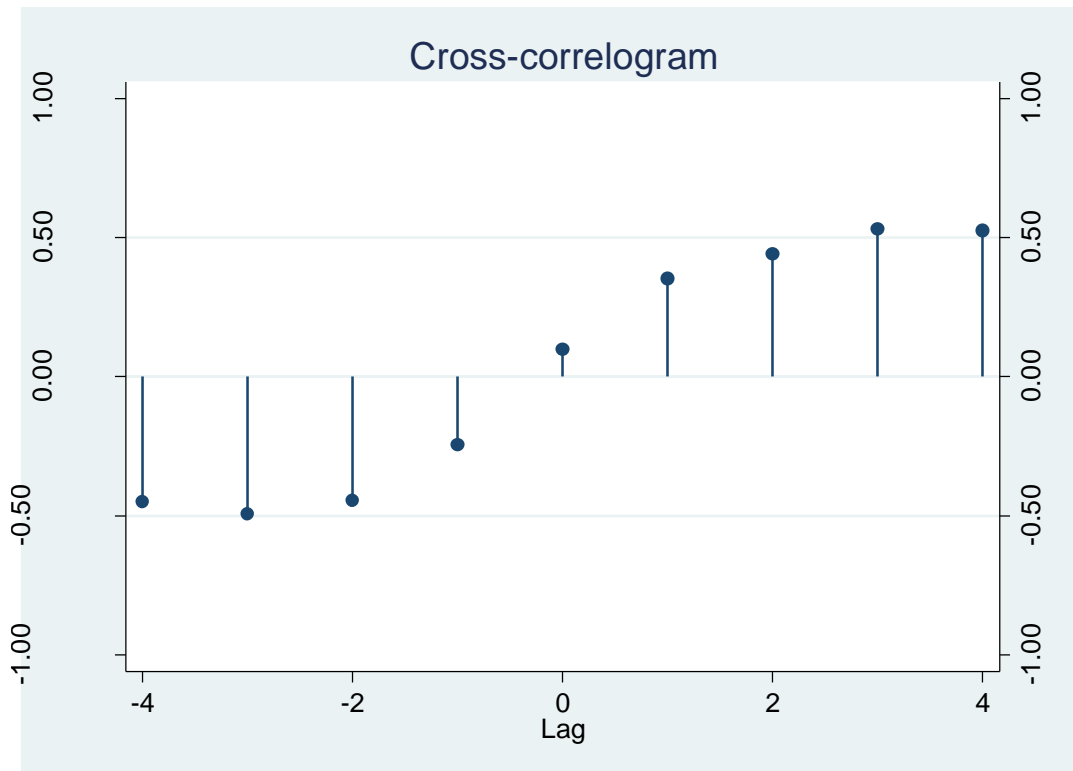
13. Sectoral decomposition of gross value added, 1970-2009 (KLEMS)



14. Sectoral decomposition of gross operating surplus, 1990-2009 (KLEMS)

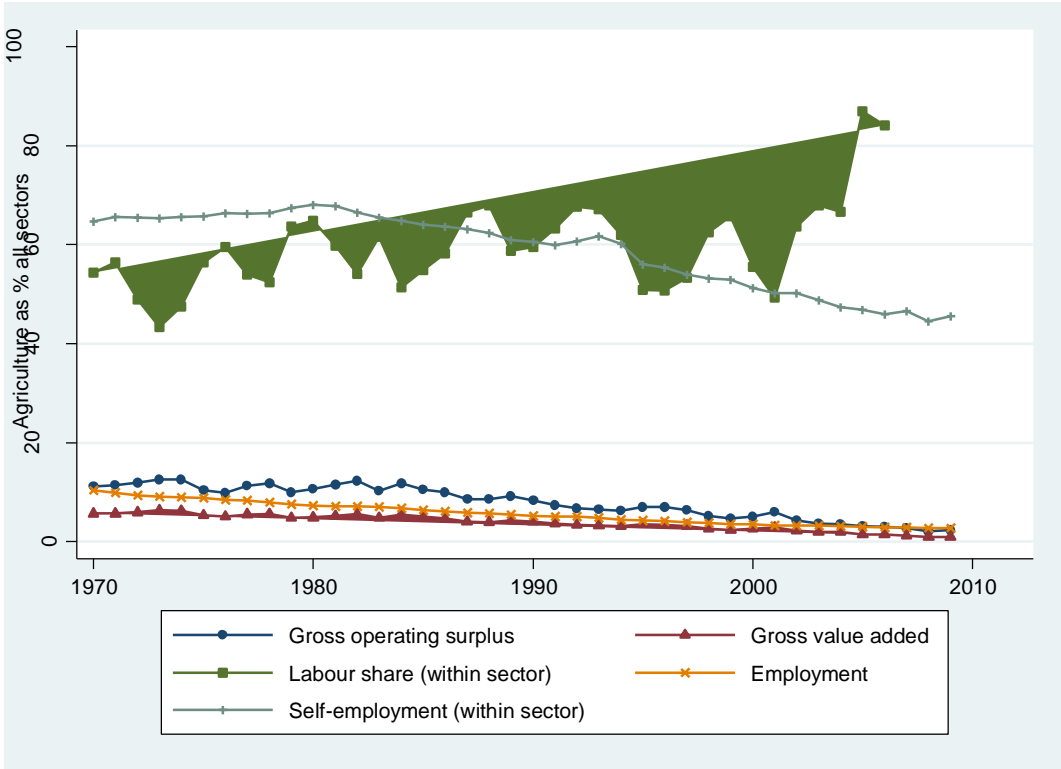


**14. Credit volume cross-correlogram**

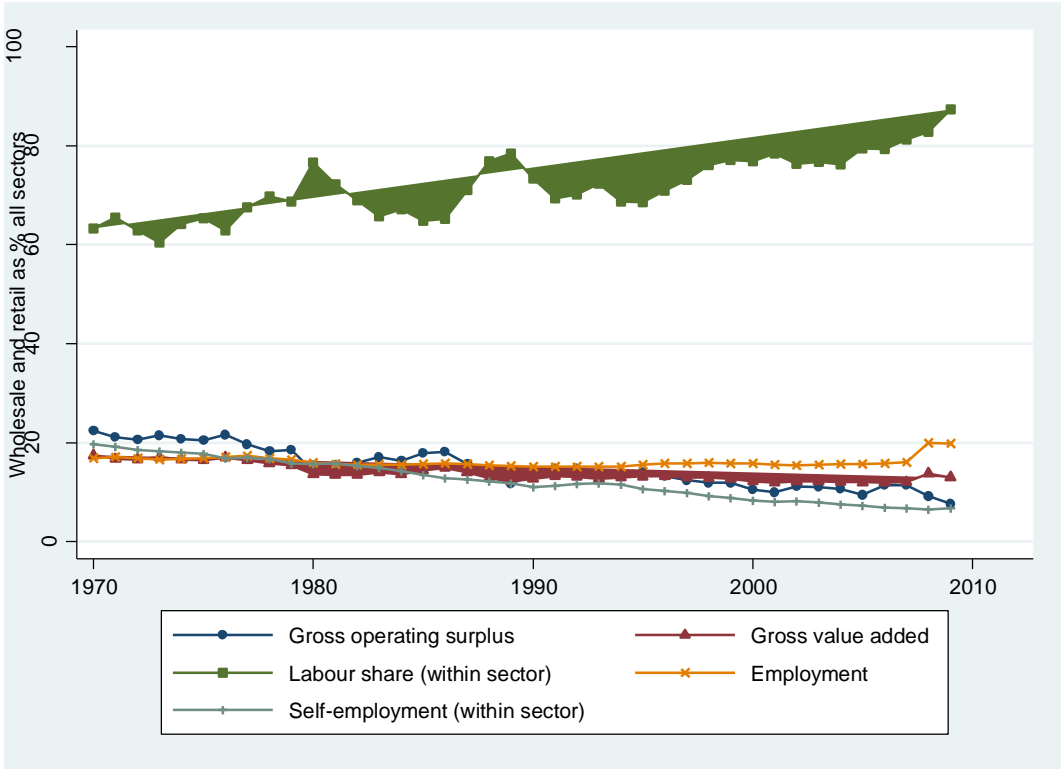


**15. Finance cross-correlogram**

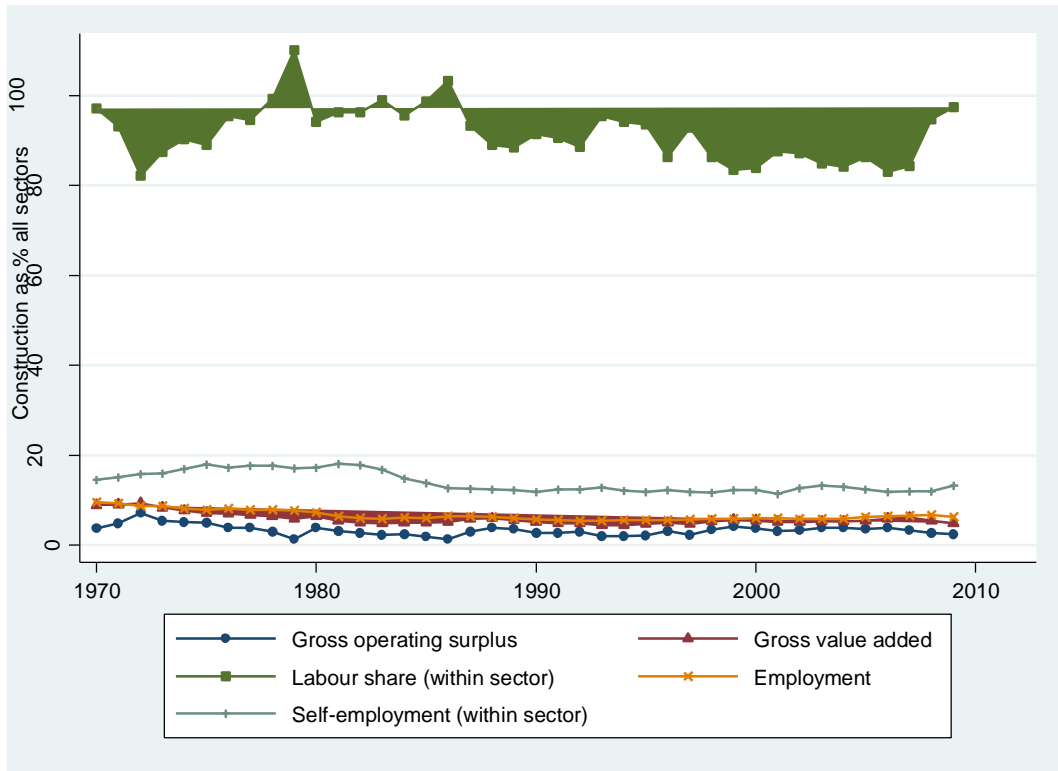
**Appendix 5: Labour share and sectoral graphs (Denmark)**



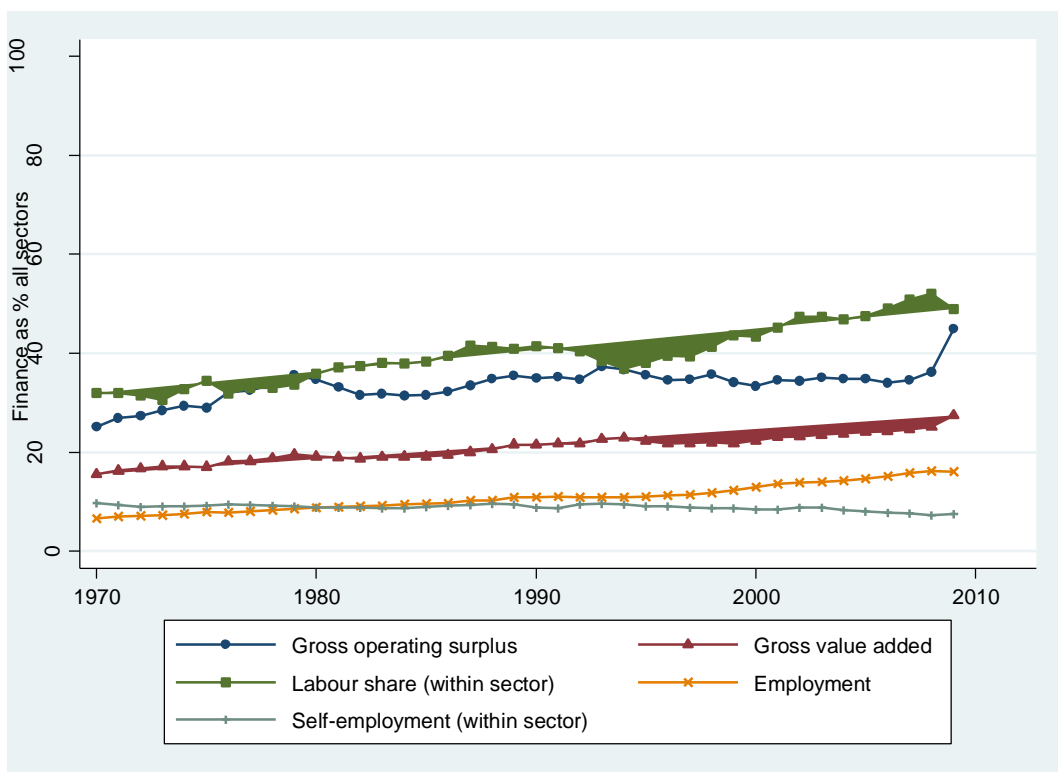
**1. Agriculture, 1970-2009 (KLEMS & OECD)**



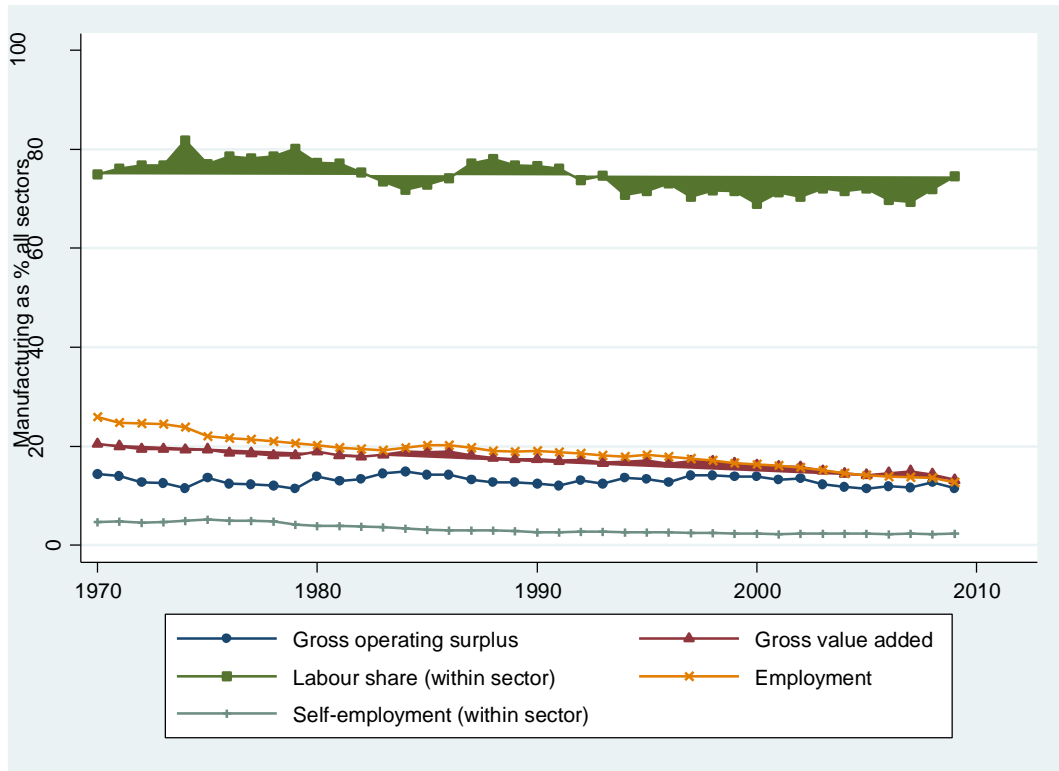
**2. Wholesale, retail, restaurant and hotel, 1970-2009 (KLEMS & OECD)**



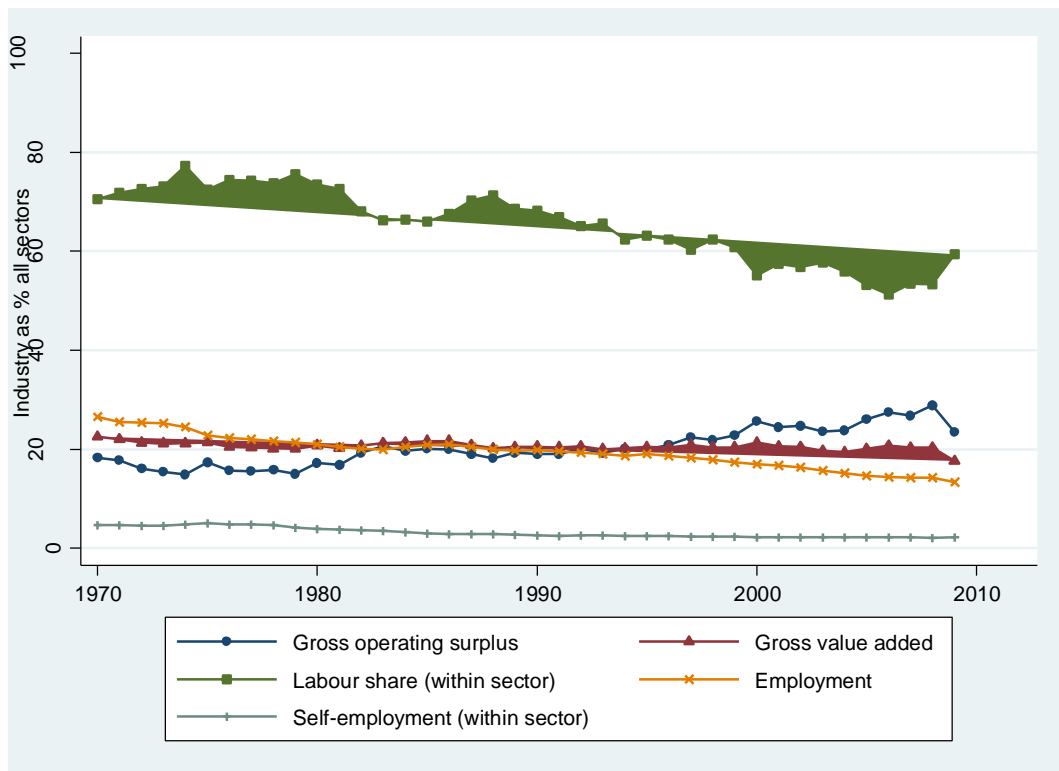
### 3. Construction, 1970-2009 (KLEMS & OECD)



### 4. Finance, insurance and real estate, 1970-2009 (KLEMS & OECD)

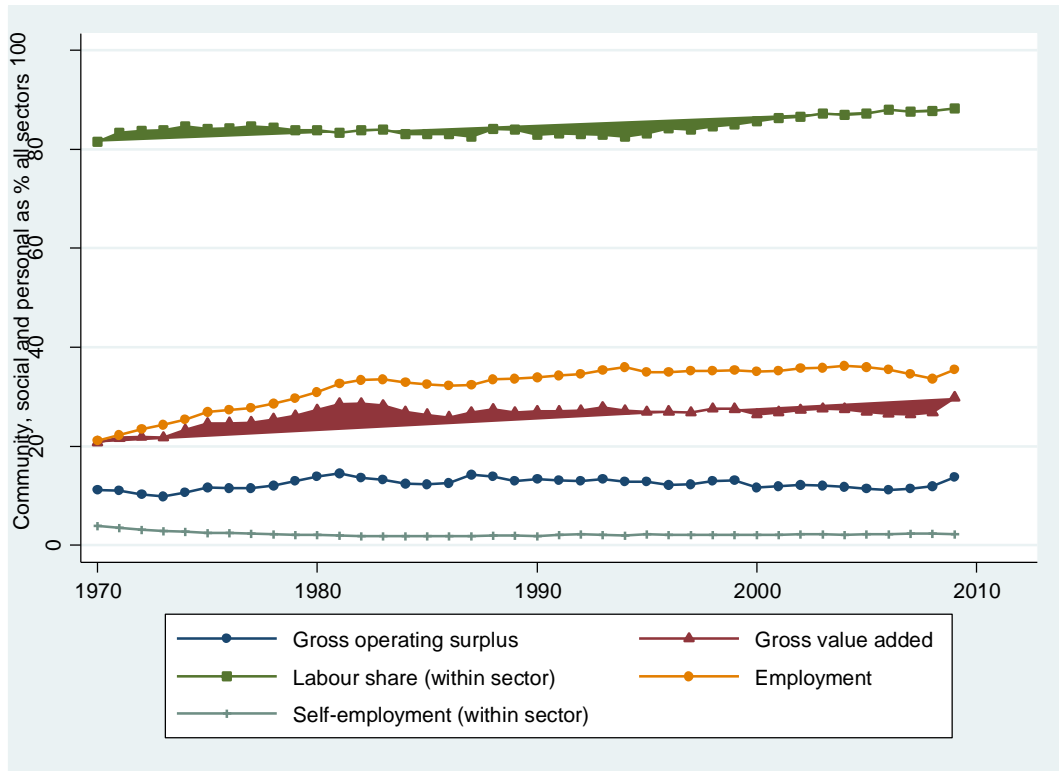


### 5. Manufacturing, 1970-2009 (KLEMS & OECD)

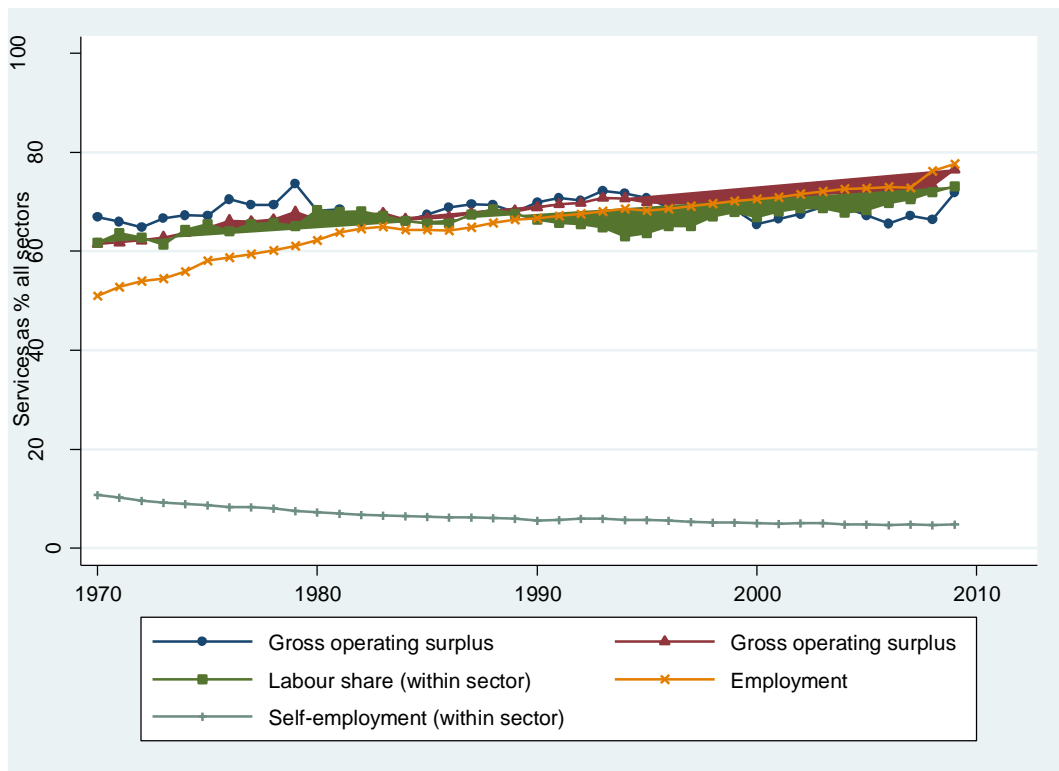


### 6. Industry, 1970-2009 (KLEMS & OECD)

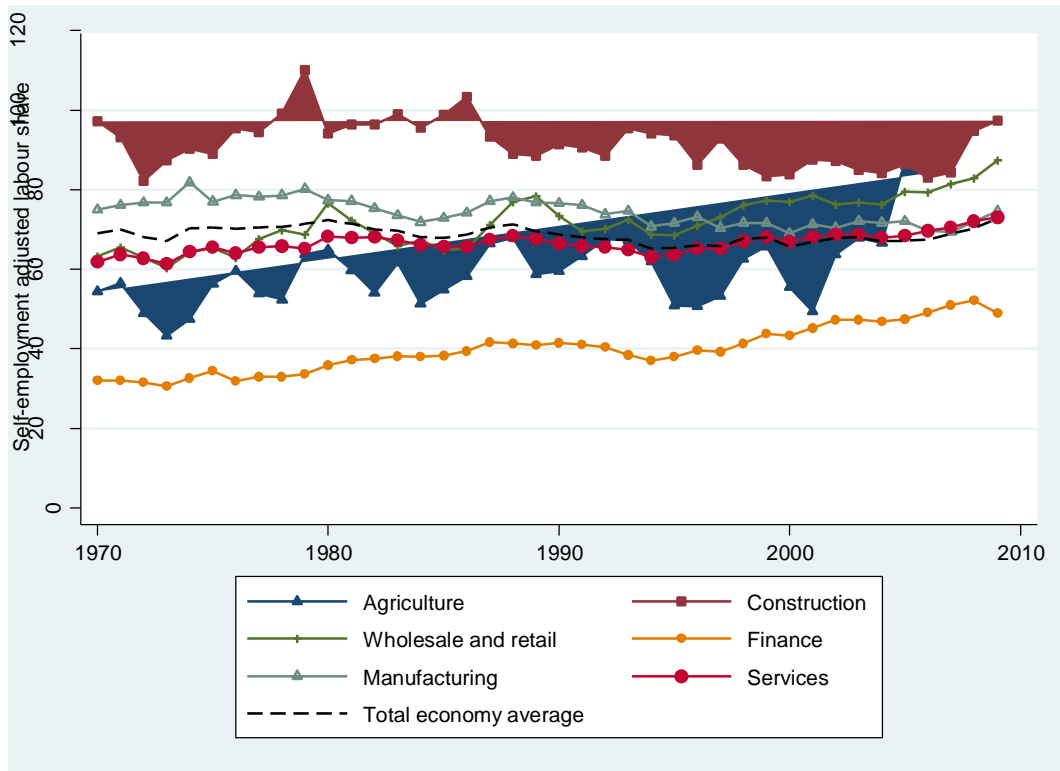




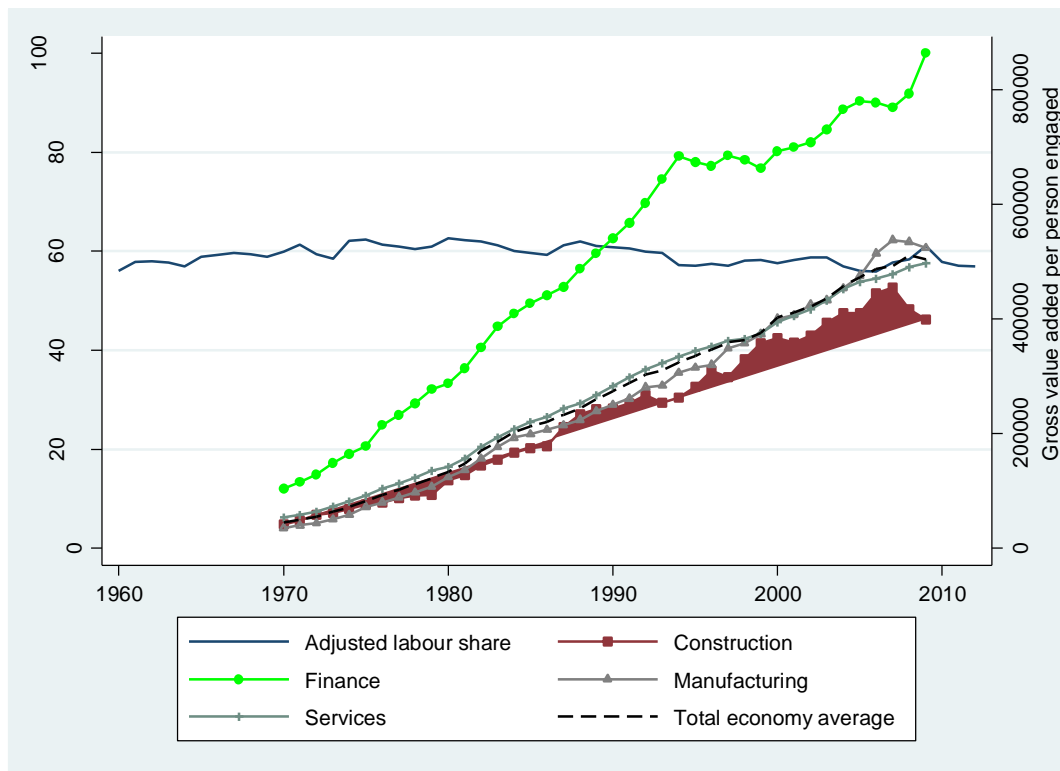
**7. Community, social and personal service, 1970-2009 (KLEMS & OECD)**



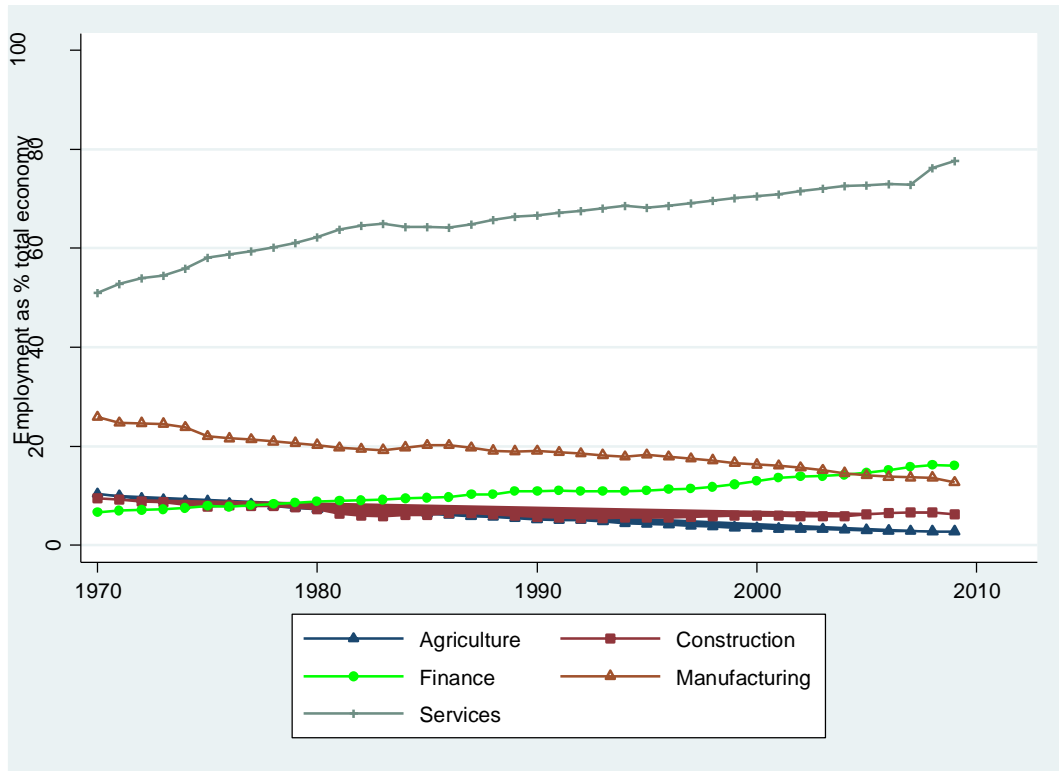
**8. Services, 1970-2009 (KLEMS & OECD)**



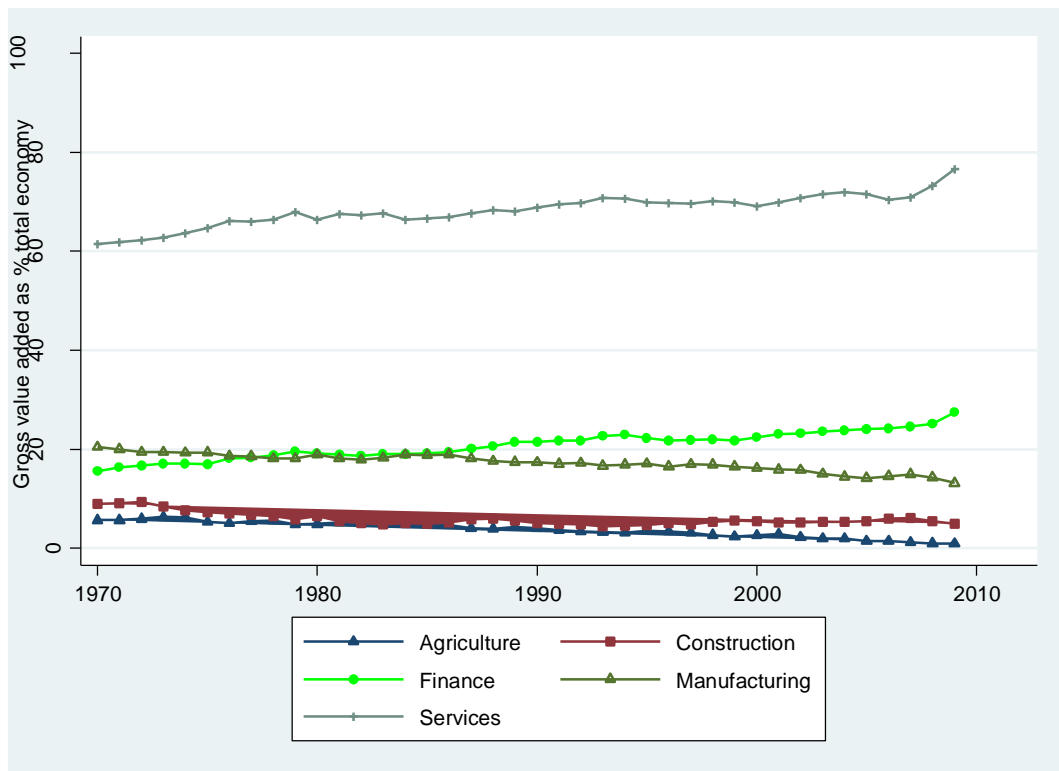
### 9. Sectoral decomposition of adjusted labour share, 1970-2009 (KLEMS & OECD)



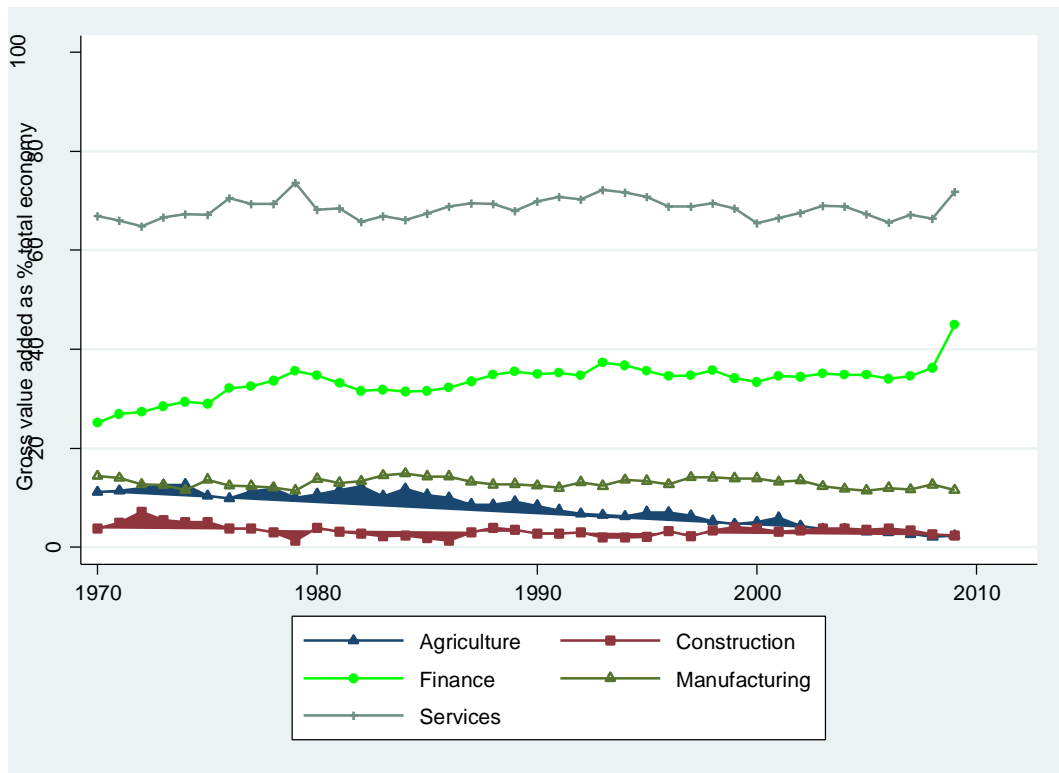
### 10. Sectoral decomposition of crude productivity, 1970-2009 (KLEMS)



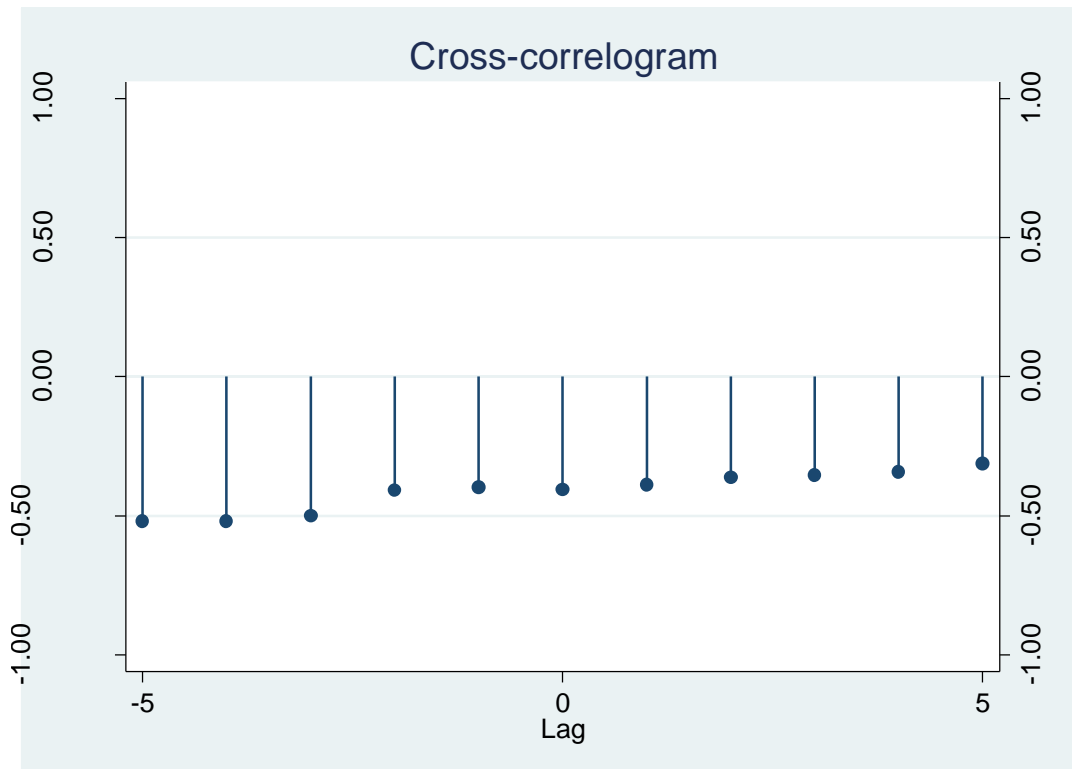
**11. Sectoral decomposition of employment, 1970-2009 (KLEMS)**



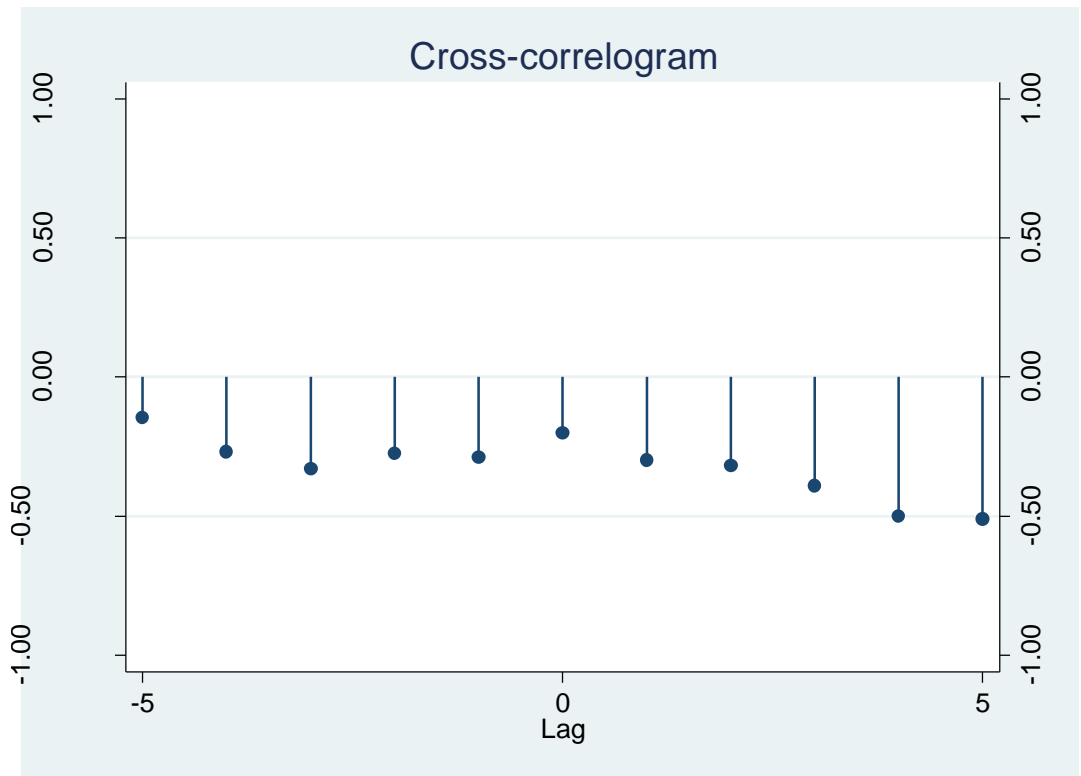
**12. Sectoral decomposition of gross value added, 1970-2009 (KLEMS)**



**13. Sectoral decomposition of gross operating surplus, 1970-2009 (KLEMS)**



**14. Credit volume cross-correlogram**



**15. Finance cross-correlogram**

## Appendix 6: Labour share meta-analysis

	Kristal 2010	Daudey and Decreuse 2006	Daudey and Garcia- Lenalosa 2007	Decreuse and Maarek 2008	Diwan 2001	European Commission 2007	Guscina 2006	Harrison 2005	Jaumotte and Tytell 2007	Jayadev 2007	Wallace, Leicht and Raffalovich 1999
Sample	OECD	OECD	OECD + developing	OECD + developing	OECD + developing	EU-11	OECD	Advanced OECD	Advanced OECD	OECD + non- OECD	U.S.
Coverage	1961-2005	1960-2000	1970-1994	1980-2000	1975-1995	1960-2006	1960-2000	1990-2004	1982-2002	1972-1995	1949-1992
Data source	AMECO, OECD	OECD	UNIDO	UNIDO, World Bank	UN SNA	AEMCO, EU KLEMS	OECD, IMF	UN SNA	OECD, ILO, UNIDO	UN SNA	-
Model estimation method	OLS, fe	OLS, fe	OLS, fe	GMM, fe	OLS, fe	OLS, fe	OLS, fe	OLS	OLS, fe	OLS	OLS
Dependent	$\Delta$ labour share	Labour share	GINI	Labour share	Labour share	Labour share	Labour share	Labour share	Labour share	Labour share	$\Delta$ labour share
Productivity	_*						_**			_*	
Unemployment	_*	_*		_***						-	-
Inflation	+							-			_**
Union density	+*	+***				+	+		-	+*	+*
Strike activity	+										-
Leftist cabinet	_*										
Government spending	+*				+***			+**			
FDI	-			_***				_**			
Net migration	+								_***		
Education		+***									
Openness (economic/financial)		-	-	+***		_***			-	_*	
Labour share			_*								
Manufacturing labour share			-								
Per capita GDP			_***								
International trade	_*			-	-		_***				
Regulation					+***				+**		
Financial crisis										_**	
Economic growth											_**

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