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# Labour's declining share of national income in Ireland and Denmark: the national specificities of structural change

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## Abstract

The share of national income going to workers has decreased steadily across Europe since the 1980s. This apparently uniform decrease in labour's share conceals differences amongst states however—in 'liberal' Ireland, this fall has been drastic, while that of 'social democratic' Denmark has been moderate. This article presents a parallel time series analysis of institutional and structural factors shaping labour's share in Ireland and Denmark. Our results show that factors common to the study of variation in labour's share operate in different ways in different countries, both in magnitude and causal mechanism. We find that stressors such as global trade, foreign investment and high-tech growth produce different effects in each location. Equally, protections such as unionization, leftist cabinets and welfare spending display contradictory effects in both locations. We conclude that 'power resource' models of labour share should be supplemented with comparative approaches that emphasize how institutionalized socio-political logics mediate returns to labour.

**Key words:** labour share, national income, comparative, time series, power resources, Ireland, Denmark

**JEL classification:** O57 Comparative Studies of Countries, D33 Factor Income Distribution, D63 Equity, Justice, Inequality, and Other Normative Criteria and Measurement

## 1. Introduction

The question of inequality in capitalist societies is back on the political agenda. Most famously through Tomas Piketty (2014), social science research has paid increasing attention to inequalities between the very wealthiest and 'the rest', after a period when most attention focussed on the inequalities within 'the rest'. This article joins this debate, investigating the

distribution of national income between capital and labour in Denmark and Ireland, two small open European economies.

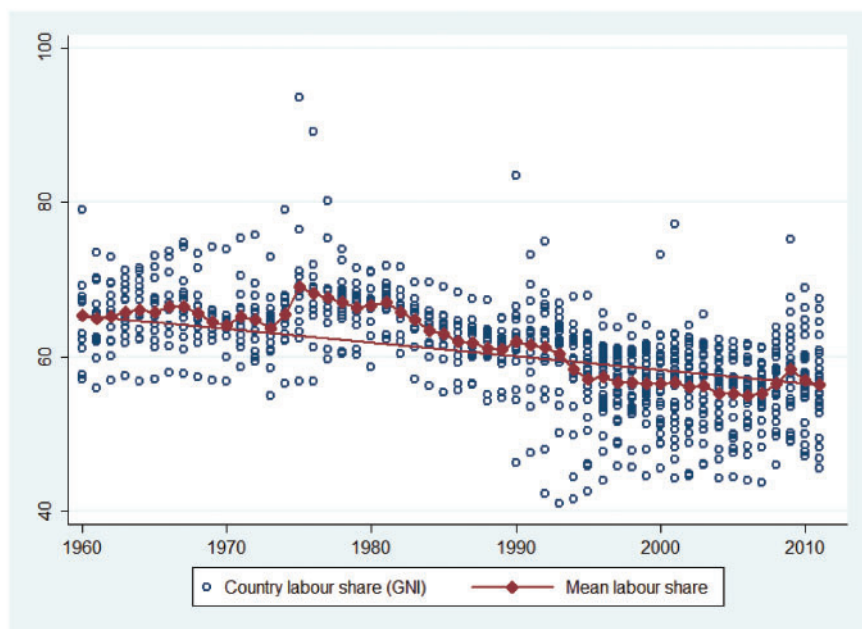
Analyses of labour share are an important complement to more common studies of income inequality: those focused on the distribution of income within ‘labour’, and those of wealth inequality, focused mainly within ‘capital’. In each case, labour share extends the perspective in important ways. In practice (if not in theory) the labour share in any society defines the boundaries of the pool of resources that is to be distributed within the national distribution of income. In studies of income inequality, it is typically a largely hidden dimension of national distributional patterns. While studies of wealth inequalities extend their frame of reference to assets, they largely ignore the stream of income that derives from that wealth, particularly the ownership of capital that enables productive investments and financial trading. Labour share therefore represents a critical linking element in overall systems of distribution (Atkinson, 2009).

Literature on labour’s share has shed significant light on causes of the uneven distribution of national income. However, this literature only touches indirectly on the different configurations of these factors in different national contexts, a task that can only be adequately undertaken within a comparative framework. This article presents a case-centered approach, based on parallel time series analyses of institutional and structural determinants of labour’s share in Ireland and Denmark. We bring together analysis of the structural reorganization and distributional politics of capital and labour that has been central to debates around labour share (Kristal, 2010), with analysis of the effects of institutional configurations of national production, welfare regimes and labour markets that has been the focus of comparative political economy (Ebbinghaus and Manow, 2001).

We make three main arguments. First, we show that while there is clearly a broad trend towards an increasing share of income going to capital, the degree, direction and patterns of change vary significantly across countries. In contrast to the emphasis in the bulk of the labour share literature on common factors that shape distributional outcomes, we argue for an analysis of the interaction of configurations of factors within national societies. Our analysis develops this approach through a comparative political economy of labour’s share of national income in the Irish and Danish economies, representing ‘liberal’ and ‘social democratic’ models of capitalism, respectively. Secondly, we show that the dynamics of these two cases contradict the expectations of not only general economic models but also ‘power resources’ and (earlier and later) ‘varieties of capitalism’ (VOC) approaches. Our analysis suggests that the distribution of national income can only be understood within the context of broader national ‘trade-offs’, ‘social contracts’ or ‘worlds of capitalism’ which themselves represent differing responses to the challenges of contemporary liberalization (Thelen, 2014), although we depart somewhat from Thelen’s account of those varying responses. Thirdly, we argue that parallel time series analyses of national cases are essential to reveal these comparative differences in the political economy of capital and labour, differences that are obscured by the more conventional pooled time series analyses whose strength is identifying the cross-contextual effects of causal factors.

## 2. The comparative political economy of labour share

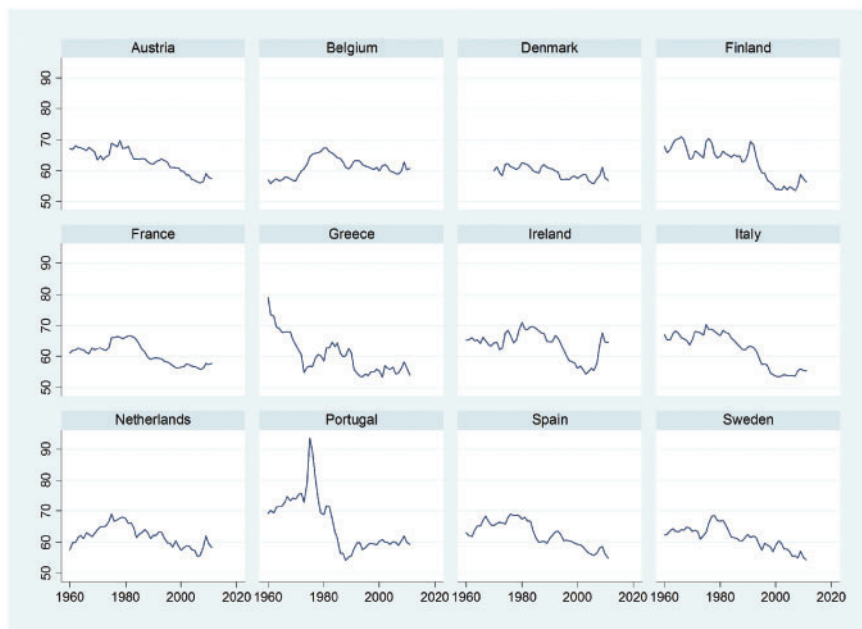
The trend towards labour’s declining share of income across the Organization for Economic Co-operation and Development (OECD), with few exceptions such as Japan, is no longer in doubt. The share of national income going to employees and the self-employed has decreased steadily across the USA and Europe since the 1980s, under the apparent combined pressure of



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

globalization, sectoral shifts in national employment and policies of economic liberalization. Figure 1 (below) illustrates aggregate trends across Europe since 1960. In contrast to the relatively constant downward trend in the US, European labour shares exhibit a characteristic ‘hump-shaped’ distribution, with labour’s share of income peaking during the early 1980s, before embarking on a sustained, albeit punctuated, period of decline. This apparently uniform decrease in aggregate labour shares conceals a variety of contrasting dynamics amongst individual European states as demonstrated in Figure 2. States thus differ not only in their levels of labour share, but also in their trends and fluctuations over time. In Ireland, for example, the long-term fall was dramatic, while that of Denmark has been comparatively moderate. Furthermore, while declines in labour’s share of national income are generally associated with rising inequality within incomes (Flaherty, 2015), this is not always the case (Trott, 2013; International Labour Organization, 2015). As such, Denmark can sustain a lower relative level of labour share than Ireland, while recording a more equitable personal income distribution.

de Serres et al. (2002) have attributed labour share reductions to the growing importance of capital-intensive activities such as financial services, coupled with shifts in domestic manufacturing toward outsourcing, with consequent wage depression. By these ‘standard’ accounts, aggregate labour share declines throughout the 1990s simply reflect a fall in the supply of unskilled labour, along with widespread increases in employment, which have outpaced growth in real compensation per worker (Giscina, 2006 p. 11; Jaumotte and Tytell, 2007 p. 9). However, Whelan and Lawless (2011 p. 132) have demonstrated that sectoral shifts toward lower labour share activities accounted for less than 1% of the decline in labour share between 1980 and 2005. Furthermore, the distribution of factor shares within sectors themselves often changes over time, suggesting that institutional and political factors



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

play a more substantial role in labour share declines. This is where a comparative political economy approach can advance debate on the institutional determinants of labour's share (Blanchard and Giavazzi, 2003; Hall and Gingerich, 2009). The rest of this section outlines our distinctive approach before explaining how we tackle this question along three different dimensions—the contingent effects of economic organization, the incorporation of labour into that economic system, and the institutional and political conditions shaping this economic organization and labour incorporation. Nonetheless, it is important to note from the outset that our focus is not on comparing the relative effects of economic, labour market and political variables (as in Kristal (2010) for example). Instead, our primary task is to compare how these groups of variables operate in different ways, allowing us to examine the different dynamics within and between countries.

## 2.1 Understanding comparative differences between worlds of capitalism

There is already a growing body of literature on how a range of institutional and structural factors such as union density, strike activity, leftist national government and components of government spending shape labour's share of income, alongside the general trend towards economic liberalism (Wallace *et al.*, 1999; Diwan, 2001; Blanchard and Giavazzi, 2003; Guscina, 2006; Ellis and Smith, 2007; Decreuse and Maarek, 2008; Kristal, 2010). Kristal (2010) provides the most comprehensive attempt to integrate these dimensions. Her model involves decomposing labour's share into its constituents—compensation, employment and productivity—while further dividing working class organizational power into economic, political and global spheres (Kristal, 2010 p. 738). Elsewhere, Bengtsson shows similar findings, albeit a weak effect of unionization on labour's share in Nordic countries, consistent with theories

which stress moderated wage demands amongst countries with higher union densities (2014a, pp. 404–405). Stockhammer (2017) expands the analysis beyond affluent democracies, showing how globalization correlates negatively with wage shares in developing nations.

On Sweden, Bengtsson (2014b) shows how changes in labour's share were conditioned by strong wage growth in the 1960s (outstripping productivity), followed by a 'crisis phase' of wage restraint and currency devaluation. The standard 'skill bias' argument is also contradicted in Austrian research, lending support for a political economy explanation (Guschanski and Onaran, 2016). The existing literature is much weaker in explaining the particular forms of bargain that exist in different national, institutional and political contexts however—especially so in the case of pooled analyses—which we suggest may be addressed through a comparative approach. Power resources do not assume universal forms nor result unambiguously in increased labour share but must be understood through the filter of national-level regimes and their mix of trade-offs over key political and policy domains. Our analysis thus combines the labour share literature's focus on the class relations at the heart of capitalism with the interacting institutional complexes that are the central explanatory factors in the comparative political economy of welfare and production regimes.

Despite many critiques, the dominant orienting framework in comparative political economy remains the 'Varieties of Capitalism' perspective (Hall and Soskice, 2001). Leaving aside broader issues with the perspective, there are several reasons why this perspective offers a useful starting point, and foil, for the comparative political economy of labour share. First, since the perspective focuses on production regimes and economic competitiveness, its primary distributional focus is on market risks and rewards rather than on welfarist redistribution (with important exceptions such as Rueda and Pontusson, 2000). This brings it relatively close to the object of labour share analysis. Secondly, it offers a 'configurational' account of national political economies, distinguishing between relatively distinct *coordinated market economies* (CMEs), in which government and state institutions play a central guiding role, and *liberal market economies* (LMEs) in which the organization of labour and dynamics of growth are mediated primarily through markets (Hall and Soskice, 2001; Hall and Gingerich, 2009). Denmark and Ireland offer relatively clear examples of each type, albeit with some reservations (Ó Riain, 2014). Thirdly, we can derive a set of guiding predictions for each of our models. LMEs should move more quickly than CMEs towards the dynamics of innovation-led endogenous growth. Workers with 'general assets' (e.g. tradeable skills in the market) will gain greater rewards in LMEs, whereas those with 'specific assets' (e.g. firm- or sector-specific skills, generally realized in unionized or other protected settings) will get a better share of income in CMEs. Politically, the original VOC literature would expect that workers will benefit significantly more from unionization, welfare and left government in CMEs than in LMEs.

The clarity of this picture of the 'old' VOC is complicated by Thelen's (2014) reformulation of 'varieties of liberalisation'. Thelen argues that coordination capacities have been further reduced in liberal economies as they have deregulated, suggesting that the key influences on distributional outcomes in liberal economies will be at the level of production regimes rather than welfare or macroeconomic factors. However, the direct action of the state becomes more important in social democracies as the social foundations of production and welfare bargains become more fragile—indeed, she points to Denmark as a particularly clear example of such a directly interventionist role for the state (Thelen, 2014). To some extent, Thelen turns the established analysis on its head—it is now specific interventions by the

state in social democracies and by employers (especially) and worker groups in liberal economies that shape distributional outcomes.

In our analysis, therefore, we develop this comparative political economy of labour share through three models that compare the effects of endogenous economic growth, labour incorporation and political–institutional context on labour share in social democratic and liberal national political economies. We also offer an account that synthesises the findings from all three models into an analysis of how similar economic, social and institutional factors can have quite different distributional effects in such different national contexts. Such a focus on the configuration and dynamics of regimes is essential, given our findings in separate models that similar factors can have quite different effects in the two case countries. The rest of this section introduces the logic behind the three models.

## 2.2 Endogenous economic growth

The share of national income going to labour is a ‘constant’ in neoclassical economic growth models, which should not fluctuate but remain in equilibrium (Solow, 1958; Mankiw, 2007; Zuleta 2012, p. 91). Other economists have drawn attention to the changing nature of capital and labour, through the growth of unincorporated enterprises, human capital endowments or labour substitution and technology (Arpaia *et al.*, 2009; Zuleta, 2012). Nonetheless, largely implicitly, the literature on labour share has assumed that the ‘factors of production’ themselves, including the technology ‘residual’, are fixed or exogenous to the model (Solow, 1958) and thus sit outside of politics and institutions.

More recent developments in endogenous growth theory call specifically for attention to ‘... the private and public sector choices that cause the rate of growth of the residual to vary across countries’ (Romer, 1994). In these accounts, the institutional makeup, and state policy choices of a country are central to its growth capacity. Endogenous growth theory emphasizes trade as a precursor to growth, but also policies that drive research and innovation. Our first model examines the effect of *trade*, which exposes firms and workers to the opportunities and pressures of international competition. To this we add the proportion of *information technology* jobs within the economy, as the growing importance of high-tech activities, such as the software sector in Ireland and Danish biotechnology, has been a crucial feature of recent decades. The high skill profile of much of this work has promoted upward wage pressures in most technology-intensive sectors, generating a wage premium for highly skilled, mobile workers (Daudey and Decreuse, 2006; Hardiman *et al.*, 2008).

While Kristal (2013) finds that computerization reduces labour share, this finding is compatible with our expectation that an increased share of IT jobs will increase labour share. Kristal’s measure captures the overall effect of IT on the labour force (e.g. incorporating automation and other effects), while our measure captures the growth of a group of workers who can command significant rewards in the labour market. Some of Kristal’s analysis of changing technological conditions is captured in our analysis of increased employment in *services* as a whole. This has tended to weaken unions by reducing the importance of their historically ‘core’ memberships of industrial employees, while certain service sub-sectors such as retail have seen a proliferation of casual employment, making coordinated bargaining beyond firm level particularly difficult (Hardiman *et al.*, 2008). Finally, we include a measure of *inflation* as a control for business cycle effects in the generation of labour share fluctuations (Harrison, 2005, p. 26). This measure also tests the efficacy of the ‘wage-lag

hypothesis', which suggests that compensation lags behind productivity, decreasing labour's share as inflation and output rise (Raffalovich *et al.*, 1992, p. 255).

### 2.3 Labour incorporation

We also consider structural changes in the composition of the labour force and its modes of incorporation into employment (Harrison, 2005; Daudey and Decreuse, 2006; Jaumotte and Tytell, 2007; Jayadev, 2007). The incorporation of new 'labour pools', such as women and migrants, into the economy may well transform the politics of capital and labour with both by altering the skill composition of labour forces and through differing 'modes of incorporation'. These are key conditions frequently invoked in 'power resources' models of inequality. Given that significant gender and ethnic wage inequalities remain, *female labour force participation* and *migrant employment* influence labour share in a national economy through the accession of workers to occupations often of low security of tenure, and with weaker bargaining power over working conditions. The overall labour market conditions under which labour is incorporated into employment may also have a significant effect. We examine the impact of both *hours worked* in the economy, as a measure of overall labour participation and mobilization, and of *unemployment* rates, examining whether high unemployment tips the balance of power fairly firmly towards capital in negotiating the distribution of capital's rewards. To account for the predominant role of multinationals in Irish labour markets, and their negative influence on unionization, we include our *foreign investment* measure in the Irish models also.

### 2.4 Political–institutional context

Power resource frameworks provide compelling evidence that the resources of relevant class actors are critical in explaining labour's share of capitalism's rewards (Korpi, 1983). In keeping with this approach, we develop a political–institutional model, alongside our previous economic and labour incorporation models. We start with two measures of the power of capital and labour. Increased levels of *foreign direct investment* typically reduces labour share as mobile capital generally enjoys lower relocation costs relative to labour, and therefore can seek out greater returns from beyond its host economy or use this capability in domestic bargaining (Harrison, 2005; Decreuse and Maarek, 2008; Hutchinson and Persyn, 2009). The collective organization of workers is captured through the rate of *unionisation*, which typically serves to increase labour's bargaining power—both through the imminent threat of strike action, and by representing members' interests in wage bargaining processes (Wallace *et al.*, 1999; Daudey and Decreuse, 2006; Guscina, 2006; Jayadev, 2007; Jaumotte and Tytell, 2007; Kristal, 2010).

Two other variables relate to the political context in which capital and labour play out their struggles to shape market outcomes. Political partisanship is often 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. However, there is also evidence that unions and left parties have quite different effects, with union strength most affecting wage and other working conditions while left partisan success affects welfare and other social policies (Jensen, 2012). Indeed, a substantial body of literature exists addressing the welfare provision strategies of small open economies, captured by *levels of social spending*. Welfare may boost labour share by providing a 'reserve wage' that strengthens labour's bargaining power and social policies that enhance



workers' skills and productivity. However, the relationship may be more complex, as small states typically use welfare to both compensate for globalization pressures and to trade off against wage competitiveness (Katzenstein, 1985, p. 47). Our choice of cases is highly relevant here as Denmark is a clear case of historical 'social compensation' while Ireland represents a 'liberal' exception with a small open economy but comparatively low welfare effort.

### 3. Methodology: comparative time series

We noted at the outset that one contribution of this article was methodological, as we undertake a parallel time series comparing two national societies from 1960 to 2012. In this section we explain that approach, focusing on our comparative time series analysis and the definition of the labour share variable.

#### 3.1 Analytical strategy: parallel time series

The theoretical approach outlined above requires a different methodological approach than in most of the labour share literature which either focuses on single countries (typically the US) or pooled time series across multiple countries. We develop parallel time series analyses of single countries allowing us to explore possible *divergences* in the manner in which explanatory factors influence long-term labour share dynamics in both economies, divergences that are obscured when pooled data is used. Investigations of income and labour share distribution often utilize pooled observations across multiple countries, in order to maximize 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 (Lee 2005; Jaumotte and Tytell 2007; Kristal, 2010; Rodriguez and Jayadev, 2010; Volscho and Kelly, 2012). 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. Where such contextual aspects of the analysis can be obscured in pooled analyses (Schrank, 2013), our approach maximizes our sensitivity to the interaction of various factors in different national contexts. A strong version of this argument would suggest that pooled time series models had less value in understanding comparative differences in labour share. However, there is sufficient overlap between the general patterns in, for example, Kristal's (2010) analysis and our own that we prefer to see the approaches as broadly complementary, although there is a need for further exploration of case-specific patterns.

We choose our cases to examine the combination of institutions and policy structures which constitute Ireland and Denmark as 'liberal' and 'social democratic' ideal types. This nuance is typically missed in analyses which adopt a pooled time series approach. Nonetheless, there are important historical and structural similarities between the countries that provide a solid basis for our comparative analysis of more short-range differences. Both countries are small open economies, historically formed from smallholder agricultural social structures and who joined the European Economic Community together in 1973. Similarly, both have operated under the policies of economic and monetary union since the late 1990s, and although Denmark is not a member of the eurozone, it has arguably followed the relevant policies more closely than Ireland. Despite these similarities, Ireland and Denmark are located in very different mappings of 'varieties of capitalism' and 'worlds of welfare capitalism' (Ebbinghaus and Manow, 2001; Arts and Gelissen, 2002; Blanchard and Giavazzi,



2003). Although sometimes conceived of as 'hybrid' cases (Campbell and Pedersen, 2007), there are still clear institutional differences between the countries. On conventional measures, Ireland falls short of Denmark in terms of coordination in labour relations and corporate governance as well as product market deregulation (Blanchard and Giavazzi, 2003; Hall and Gingerich, 2009). Furthermore, some of the 'hybrid' features of the two countries are more typical of their worlds of capitalism than is often thought—for example, relatively flexible labour markets are a feature of most Social Democracies and not just Denmark, while sectional union strategies are a common feature of liberal economies (Ó Riain, 2014). Furthermore, most Liberal political economies are either former empires and their commonwealths, or relatively newly capitalist countries. Therefore, Ireland's experience of rapid development and structural change is likely to be a relatively common feature of Liberal economies (e.g. the new Liberal political economies of Eastern Europe).

Nonetheless, in pursuing this comparison, it is also important that we do not conceive of these economies' structures as homogenous, static or captured by the label assigned to them by our typology of choice. While we are confident that these countries are broadly representative of liberal and social democratic capitalisms, we also conceptualize each nation's political economy as a dynamic configuration during the latter half of the 20th century. Ireland's liberal trajectory has been punctuated with important elements of state intervention. These included social partnership agreements from 1987 to 2008, which reached beyond issues of wage setting alone to incorporate civic associations with implicit agendas of social inclusion (Teague, 2006, 2009), and the actions of the Irish 'developmental network state' in the realm of industrial policy (Ó Riain, 2000, 2004). Similarly, Denmark has a famously flexible labour market, combined with measures to promote income security and re-employment. Therefore, a specific consideration of the evolving institutional space of economic activity is central to any interpretation of the dynamics of returns to labour. Indeed, the ability to assess this mixture of coherence and internal complexity that is common to all national political economies is one of the strengths of the parallel case study approach. To this end, the historical scope of the data employed in these analyses incorporate a number of distinct, characteristic phases of economic development, and regimes of industrial and social policy formulation.

### 3.2 Variables

Table 1 provides an overview of the variables used in the analysis and of the data sources (see the previous section for a conceptual discussion). However, the labour share variable itself requires a more extended discussion. The first question relates to the definition of labour itself. 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. Following this convention, labour shares were calculated by adding an estimate of compensation of the self-employed, (multiplying numbers of self-employed by nominal compensation per employee), which was added to national accounts 'compensation of employees' to provide an overall measure of labour's income.

The definition of 'national income' also involves several choices. While Gross Domestic Product (GDP) is conventionally taken as the measure of national income, it poses different problems for each of these two countries. GDP in Ireland is highly inflated by the activities of multinational corporations, including transfer pricing and related corporate accounting practices (Barry, 2005, 2006). Conversely in Denmark, GDP underestimates national

Table 1. Descriptive statistics, coverage and variable descriptions

Variable	Mean	Standard deviation	Min	Max	Coverage	Description	Source
Ireland							
ls	63.008	3.836	54.570 (2003)	69.515 (1980)	1960–2012	Labour share (GNI denominator)	Annual macro-economic database – European Commission (AMECO)
trade	0.623	0.182	0.412 (1976)	1.078 (2002)	1960–2012	% share of combined global goods imports and exports	Annual macro-economic database – European Commission (AMECO)
service	62.918	5.051	55.6 (1983)	75.5 (2010)	1983–2010	Employment in services as % total employment	World Bank
comp	37.145	21.040	14.299 (1986)	72.608 (2011)	1974–2011	Computer and communications as % total service exports	World Bank
cpi	6.211	5.637	-4.480 (2009)	20.876 (1981)	1961–2011	Consumer price index - % change on previous period	OECD Statistics
left	14.298	3.520	9 (1982)	23 (1996)	1960–2006	Left legislative seats as % all parliamentary seats	Swank (2008)
union	52.893	9.109	34.9 (2007)	64 (1978)	1960–2009	Union density (union members as % total workforce)	Visser (2011)
welfare	7.541	1.656	5.031 (2000)	11.245 (2010)	1970–2011	Welfare spending as % of GDP	Eurostat
fdi	4.005	7.828	-14.922 (2005)	26.148 (2000)	1974–2011	Foreign direct investment net inflows (% of GDP)	World Bank
mig	0.310	6.994	-14.495 (1960)	16.356 (2005)	1960–2009	Net migration rate	OECD Statistics
unemp	9.181	4.352	3.900 (2001)	16.800 (1985/1986)	1960–2012	Unemployment rate	Annual macro-economic database – European Commission (AMECO)
hours	2188.293	242.775	1803.780 (2010)	2629.95 (1960)	1960–2011	Mean annual hours worked	The Conference Board: Total Economy Database [ <a href="http://www.conference-board.org/data/economydatabase/">http://www.conference-board.org/data/economydatabase/</a> ]
femlp	51.531	9.216	36.907 (1984)	64.219 (2007)	1983–2011	Female labour force participation rate	OECD Statistics

Table 1. Continued

Variable	Mean	Standard Deviation	Min	Max	Coverage	Description	Source
Denmark							
ls	59.234	1.845	55.882 (2006)	62.6444 (1980)	1960–2012	Labour share	Annual macro-economic database – European Commission (AMECO)
trade	1.025	.283	.549 (2012)	1.560 (1962)	1960–2012	% share of combined global goods imports and exports	Annual macro-economic database – European Commission (AMECO)
service	69.686	3.939	62.5 (1981)	77.7 (2010)	1981–2010	Employment in services as % total employment	World Bank
comp	35.618	5.203	27.551 (1997)	43.372 (1999)	1975–2004	Computer and communications as % total service exports	World Bank
cpi	5.075	3.654	15.275 (1974)	1.258 (1993)	1967–2011	Consumer price index - % change on previous period	OECD Statistics
left	45.404	3.705	35 (1974)	50 (1972)	1960–2006	Left legislative seats as % all parliamentary seats	Swank (2008)
Union	70.402	7.876	56.9 (1960)	80.8 (1983)	1960–2009	Union density (union members as % total workforce)	Visser (2011)
Welfare	16.951	2.574	10.7 (1973)	20.3 (1993)	1970–2011	Welfare spending as % of GDP	Eurostat
FDI	1.744	3.939	-2.465 (2010)	22.497 (2000)	1974–2011	Foreign direct investment net inflows (% of GDP)	World Bank
Mig	1.441	1.500	-1.779 (1975)	5.541 (1995)	1960–2011	Net migration rate	OECD Statistics
unemp	4.679	2.638	.6 (1970)	9.6 (1993)	1960–2012	Unemployment rate	Annual macro-economic database – European Commission (AMECO)
hours	1599.730	92.305	1493.94 (1994)	1879.65 (1970)	1970–2009	Mean annual hours worked	The Conference Board: Total Economy Database [ <a href="http://www.conference-board.org/data/economydatabase/">http://www.conference-board.org/data/economydatabase/</a> ]
fempl	76.446	1.627	72.784 (1983)	79.102 (1992)	1983–2011	Female labour force participation rate	OECD Statistics

income due to the formation of very substantial private pension funds managed by unions and employer associations in recent decades. The net effect of these arrangements is that of a considerable mismatch in each country between domestically *generated* and domestically *appropriated* value. Gross National Income (GNI) provides a better measure for both countries of the income realized in each nation in each particular year, and we use GNI as the denominator in our measure.

GNI is only 85.54% of GDP for Ireland, and is 110.06% for Denmark. In Ireland, it is estimated that only 40% of this gap between GNI and GDP consists of genuine economic activity in Ireland (IFAC, 2012). The net effect of adopting GNI as our measure 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%. Figures 3 and 4 show that both sets of estimates exhibit broad parity until the 1980s after which Ireland's expanding, globalized productive base begins to significantly underestimate returns to labour based on GDP alone. The difference is less significant in Denmark but we use GNI in that case also for consistency. This offers a crucial corrective to existing studies which have relied on a GDP-denominator in their calculation of labour share in countries with strong multinational presence. It also means that our estimates of labour share decline in Ireland are quite conservative.

### 3.3 Modelling approach

Our analysis consists of a series of error correction models (ECMs) specified across our three domains of *macro-economic*, *labour incorporation* and *political-institutional* factors and repeated for both Ireland and Denmark. These are much-utilized specifications in the study of inequality (Kristal, 2010; Volscho and Kelly, 2012), and are appropriate in the presence of non-stationarity and cointegration. The type of relationship typically observed in analyses of income distribution often approximates 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, p. 688). 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 and long-term effects. In this case, a 'first differenced' term captures the short term, instantaneous effects of changes in the *level* of predictors ( $\beta_1 \Delta X_{t-i}$ ), while a lagged term captures the long-run effect ( $\beta_1 X_{t-1}$ ). The complete model includes a first-differenced dependent variable ( $\Delta y_t$ ) as follows;

$$\Delta y_t = \alpha_0 + a_1 y_{t-1} + \beta_1 \Delta X_{t-i} + \beta_2 X_{t-1} + \epsilon_t$$

Consequently, the above specification permits the incorporation of both short and long-term effects (Busemeyer, 2009; Kristal, 2010, p. 744), treatment of cointegration, a parsimonious representation 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 means that on at least one of the models the final specification reported includes different variables for the two countries, although each model for each country started out with the same specification. This procedure continued iteratively for each individual model,

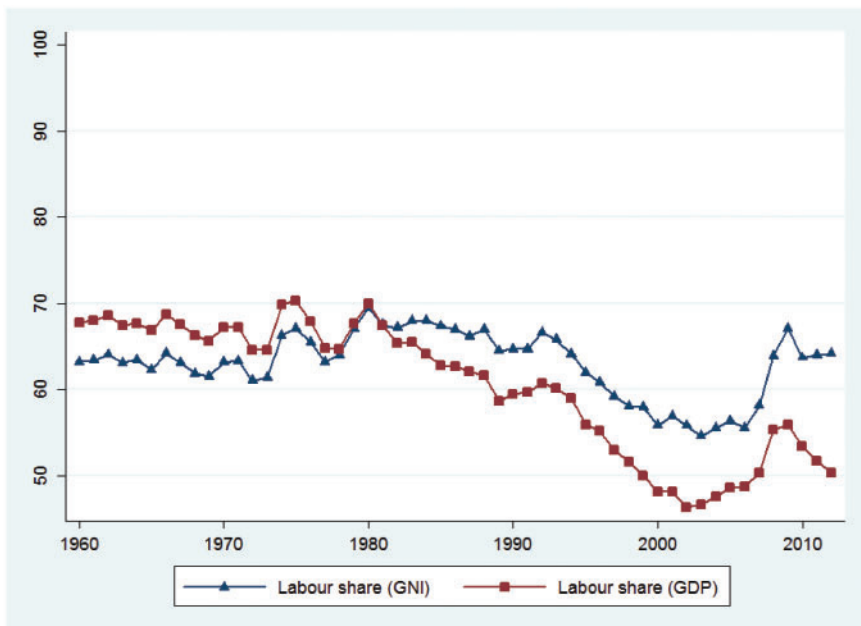


Figure 3. Labour's share of national income (Ireland), GDP and GNI denominator, 1960–2012.

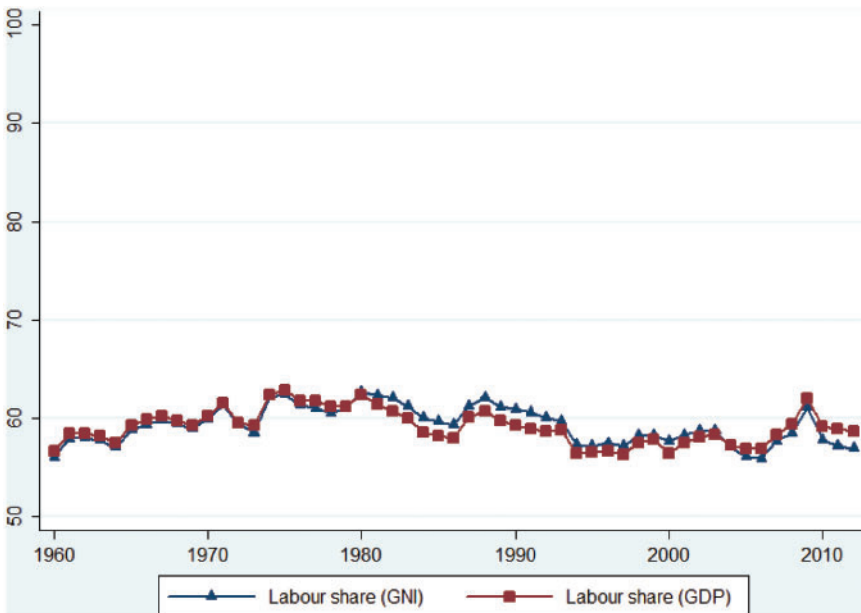


Figure 4. Labour's share of national income (Denmark), GDP and GNI denominator, 1960–2012.

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. 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.

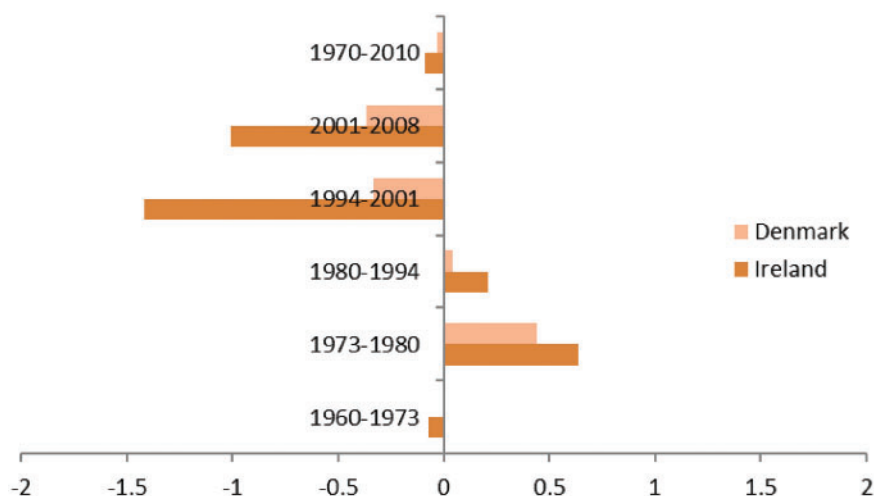
#### 4. Understanding the comparative dynamics of labour share

We begin our analysis with a more systematic look at the changes in labour share in our case countries. We can better quantify the scale of this variation in specific historical epochs between both countries by regressing and plotting a succession of period-specific trend dummies. The coefficient on these partial models in [Figure 5](#) indicates the rate of reduction within each period. Ireland and Denmark have experienced similar periods of growth and decline in labour share, although with very different magnitudes in those trends. While Ireland exhibits faster growth between 1960 and 1980, Denmark adjusts consistently toward a more stable rate of decline. As Ireland's labour share drops 1.5% per year between 1994 and 2001, Denmark's is reduced by 0.4% per annum. Overall, Ireland's series is decidedly more volatile. This volatility is borne out by the fact that Ireland's series exhibits stronger responsiveness to key points of macroeconomic instability and change, such as the oil crisis of the mid-1970's, the recession of the 1980's, and the recent financial crisis. Although showing comparable variation until the early 1980s albeit at differing relative levels, Ireland's subsequent decline is significantly sharper.

Our core explanatory analysis of these trends is based on the time series models presented in [Table 2](#). We discuss each model in separate sections. Our discussion provides an analytical overview and explores the configurational dynamics of each country in more detail. It is worth noting at the outset that there is considerable overlap between the results reported here and those of [Kristal's \(2010\)](#), [Bengtsson \(2014b\)](#) and [Stockhammer's \(2017\)](#) pooled time series analysis. With only one exception (which we discuss later), any of the variables in Kristal's analysis which are also used in our analysis exhibit a similar sign and significance in at least one of the countries in our analysis.

##### 4.1 Macro-economy

One of the most striking divergences between the Irish and Danish results (see [Table 2](#), columns 1 and 4) is the opposing direction of the effect of global trade volume, which records long-term significance in both models. In pooled analyses, the negative effect of global trade on labour's share is often explained by a depression of domestic wages through competition from low-wage competitor countries and cheap input costs. Others have suggested greater capital output, under the increased mobility endowed by capital account openness, may disproportionately raise rents ([Jayadev, 2007](#)). The process of 'marketisation' reflected in the trade variable is itself multi-faceted however, and can take different forms, depending in part on the strategies pursued, and in part on the institutions through which such strategies are realized. Even in two small open economies such as Denmark and Ireland, there are significant differences in export strategy, one based on promoting domestic and international market competition among small and medium sized Danish enterprises, and another based on participation in the international competition for mobile investment, as has been central to Irish development.



**Figure 5.** Period-specific linear trend coefficients, 1960–2010.

Opposing signs on service sector employment are also recorded. These are not statistically significant in either model and as such, should be treated as tentative. When considered alongside the effects of computer sector employment some comparative inferences may however be drawn. Typically, the growth of service sector employment has been associated with a dilution of union membership away from its core bases of industrial employment, a weakening of contractual security, and the accession of women and migrants to employment with low levels of regulation. These depressive effects of service sector growth have occurred in the Irish context, despite associated workforce upskilling and moderate real wage growth. Conversely, Danish services employment has enjoyed relative security from the effects of outsourcing and subcontracting. In finance and utilities, Danish labour has managed to retain a unified wage structure under market segmentation and firm rationalization, resulting in both high-performance labour flexibility, and wage stability with union bargaining centering on wage structures, and working time arrangements (Sorensen and Weinkopf, 2009). It is liberal Ireland however, where we might expect workers do worse in securing a share of income from broad, general processes of marketization, and where bargaining power is more individually and sectorally concentrated in the absence of wider social partnerships. This is reflected in the effect of IT sector employment.

The expansion of the computer sector has boosted labour's share in both countries, although to a significantly greater degree in Ireland. Given that bargaining power within such sectors often 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 such labourers relative to those of capital (Daudey and Decreuse, 2006). While the effect is stronger in 'liberal' Ireland, the benefits of marketization for labour in liberal economies depend most heavily on the prevalence of 'high road' sectors within the service economy. In Denmark, the effects of high-tech growth are smaller, although still strongly positive. In this case, however, they are combined with much stronger positive effects of general transitions towards exporting and non-manufacturing employment. In short, similar marketization processes have



Table 2 Error-correction models of labour share

	$\Delta \ln$ (Labour share, GNI denominator)					
	Ireland			Denmark		
	1. Macro-economic	2. Labour market	3. Political-economic	4. Macro-economic	5. Labour market	6. Political-economic
$\ln y_{t-1}$	-0.259*	-1.485*	-0.599**	-0.704**	-0.359*	-0.439**
$\Delta$ Trade	-5.683			4.964		
Trade $_{t-1}$	-11.534**			13.695**		
$\Delta$ Service employment	-0.096			0.193		
Service employment $_{t-1}$	-0.570 <sup>+</sup>			0.142		
$\Delta$ IT sector employment	0.173*			0.089*		
IT sector employment $_{t-1}$	0.176*			0.105		
$\Delta$ Inflation	-0.379**			-0.002		
Inflation $_{t-1}$	0.039			-0.423**		
$\Delta$ Foreign investment		-1.493	-0.069**			-0.005
Foreign investment $_{t-1}$			-0.061 <sup>+</sup>			-0.007
$\Delta$ Migrant employment		-0.107			0.193	
Migrant employment $_{t-1}$		-0.161*			0.267	
$\Delta$ Unemployment		0.830*			0.599***	
Unemployment $_{t-1}$						
$\Delta$ Total hours worked		-0.017			-0.029 <sup>+</sup>	
Total hours worked $_{t-1}$						
$\Delta$ Female labour force Participation						0.414*
Female labour force Participation $_{t-1}$						0.061
Female labour force participation		-0.288				
83-94 $_{t-1}$			0.032			
$\Delta$ Left party in cabinet						-0.095 <sup>+</sup>

*continued*

Table 2 Continued

	$\Delta$ ls (Labour share, GNI denominator)					
	Ireland		Denmark			
	1. Macro-economic	2. Labour market	3. Political-economic	4. Macro-economic	5. Labour market	6. Political-economic
Left party in cabinet $t-1$			-0.135*			0.000
$\Delta$ Union density			0.003			0.101
Union density $t-1$			0.223*			0.142*
$\Delta$ Welfare spending			0.817			0.640*
Welfare spending $t-1$			.281			-0.302*
Constant	52.365*	109.316*	25.516**	14.479	15.767+	20.499**
Adj. R <sup>2</sup>	0.7579	0.9347	0.5544	0.7362	0.6489	0.5864
Model F	(9, 17) 31.14***	(7, 4) 11.87*	(9, 22) 11.60***	(9, 11) 12.90	(7, 18) 19.11***	(9, 25) 5.76
AIC	92.9647	21.5908	106.1702	48.42862	66.5961	94.7635
Mean VIF	13.15	4.33	5.13	3.92	1.84	2.19
N (shortest series)	27	12	32	21	26	35

\* $P \leq 0.10$ ; \*\* $P \leq 0.05$ ; \*\*\* $P \leq 0.01$ ; \*\*\*\* $P \leq 0.00$ .

quite different effects in both economies, effects that deviate strongly from theoretical expectations. It is in the apparently 'less liberal' economy that the benefits of marketization for the general population are strongest, whereas those benefits in the liberal economy depend more heavily on individual workers' ability to develop 'specific assets' such as high-tech skills.

The coefficients on consumer prices allow us to explore both the effects of cyclical economic downturns, and the correspondence of compensation and productivity as per the 'wage-lag' hypothesis. The divergence in price index effects thus suggests that the capacity of compensation to keep pace with productivity is stronger in Denmark, while the damaging effect on labour share is faster and negative in Ireland. Although somewhat less clear-cut, it also appears from the inflation figure that Irish workers' share of the national pie depends more heavily on the business cycle, with expansionary periods benefiting labour in Denmark but capital in Ireland. In short, while Ireland is more vulnerable to business cycle fluctuations and has seen much higher levels of trade exposure and service employment growth, it is capital that has benefitted most from these trends. However, these trends are not in themselves determining of labour's share—in Denmark, labour has benefitted more from these trends than capital.

#### 4.2 Labour incorporation

Next, we consider an additional model, building on the previous section by examining the effect of the incorporation of labour under differently mediated processes of marketization (Table 2, columns 2 and 5). The Irish model measures female labour force participation from a breakpoint of 1983, in order to the later incorporation of women into the labour market. As foreign multinational-led employment is an important precursor to changes in labour incorporation in Ireland (accounting for a much greater proportion of employment, and of collective bargaining pressure than in Denmark), Foreign Direct Investment (fdi) is also included in the Irish model. Consistent with the 'social shaping of marketisation' argument pursued in the previous section we find striking differences between both countries, in the effects of incorporation on social groups typically depicted as more 'vulnerable' to economic stressors. Cross-national inequality research suggests that female labour force participation should raise factor inequality by increasing participation in low-skill and part-time employment which, coupled with tensions introduced into the balance of work and family demands, has tended to erode overall union participation (Ebbinghaus *et al.*, 2011, p. 112).

Similarly to the previous model, the historical increases in female labour force participation and in the proportion of migrants in the labour force have a negative effect on labour share in Ireland but a positive effect in Denmark. This is likely due to the ability of Danish public employment to mitigate precarity, coupled with extensive bargaining coverage and a welfare system aimed toward labour market participation. Furthermore, occupational structure has remained polarised in Ireland. Dual growth in both high and low-skilled occupations has led to a two-tier model of female and migrant labour market accession; one of low-skilled personal services and sales, and another of 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, but this has not translated into proportional advancements into upper-managerial roles (Turner and McMahon, 2011). Conversely, Danish flexicurity includes provisions for flexible working hours, negotiation of working time arrangements at firm level, and the provision of paid leave. Together, these factors offer

greater balance between work and family life, and long-term career advancement—although less successful in migrant integration into the labour force (Torfing, 1999; Campbell and Pedersen, 2007, p. 318).

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 latitude afforded firms in the selection process. Kristal (2010) finds such a negative effect, the one variable where her findings are significantly at variance with ours. However, we see no reason to use our results to dispute the overall finding but instead trace our results to unusual features of our case studies. In Denmark, the provisions of the Ghent system, and the extent of bargaining coverage combine to ensure easier transitions between occupations for unemployed workers. Similarly, the 'vocational skills' component of its policy mix have ensured long-term individual labour market competitiveness through upskilling. These institutions may weaken any negative effects of unemployment, particularly if the unemployment is concentrated among the less well paid. The positive labour share effect of unemployment in Ireland is primarily explained by a combination in the early years of the series of high unemployment with a weakly developed economy, highly dependent on agriculture and related labour-intensive sectors. In that sense, the result is an artefact of the combination of two different levels of economic development within the same series.

Finally, working time is non-significant in both cases, albeit with a moderate negative direction in Denmark. 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), while 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 variation across sectors, 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 productivity growth thus appears to present a moderate source of labour share depression which is especially interesting in the Danish case, where labour politics increasingly focused on working hours rather than wages over the past 15 years. This is suggestive however, as such a conclusion is not empirically corroborated here.

#### 4.3 Political–institutional context

One of the main findings of the comparative and US literature on labour share is confirmed in these models (Table 2, columns 3 and 6). These show that strong unions promote labour's gains from the economy, although the effect is strongest in Ireland where union density is historically much lower. The Irish effect is likely the result of larger potential gains of additional union membership, and a more substantial 'union wage premium' effect characteristic of LMEs. The presence of foreign firms significantly reduces labour's share in Ireland (although having no effect in Denmark, where foreign investment rates are lower). This is telling given that wage rates are generally higher in foreign than domestic firms in Ireland. Nonetheless, it is clear that Ireland's capitalism is more 'red in tooth and claw' as shares of national income depend more dramatically on the relative organizational strength of capital and labour.

The diverse impact of these factors can perhaps be explained through the different political contexts, where Danish social provision is amongst the strongest in Europe's small open economies and Ireland's among the weakest. Stronger welfare spending enhances labour's share of income in Ireland on both calculations of the variable. Ireland's approach to welfare provision has remained broadly 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 within the OECD on public services and particularly on active labour market programmes and other forms of 'social investment' (Campbell and Pedersen, 2007, p. 317). However, in Denmark, while there is a short-term effect this quickly turns negative. This suggests that Denmark's relatively peaceful struggles at the point of production may well be embedded within a wider trade-off between market and social wages, where employers can benefit from wage restraint as employees are compensated through social spending (Campbell *et al.*, 2006; Due and Madsen, 2008). The power resources of capital and labour matter, but the deals they can strike—directly and indirectly—depend on the broader structure and practices of institutions and the state.

The complex mix of trade-offs and interaction between factors across both cases is evident, albeit in ways which defy the conventions of the 'old' VOC approach. Ireland's system of voluntarist union recognition affords greater latitude to employers, while its regime of fdi-led multinational growth has helped institutionalize a model of union avoidance (Roche, 2001; Lamare *et al.*, 2009). The impact of foreign investment in Denmark is moderated by close trading links with its geographical neighbours, compared to Ireland's position as a global node in a hierarchically integrated export platform. In terms of flexicurity, employers within LMEs are typically more responsive in the short term to market signals concerning hiring and firing. The lower securities associated with lower union density in Ireland are thus mitigated in Denmark with its emphasis on generous unemployment compensation and higher labour market activation spending which serve to cushion labour market insecurity (Campbell and Pedersen, 2007, p. 317).

Finally, the effect of partisan party politics is particularly interesting. In both countries, left party success appears to reduce labour share of income—although the effects are somewhat varied and not very large. While this poses a puzzle as left parties should be more likely to promote social spending and workplace and employment rights, Huo (2015) has found that left party strength can reduce labour share by boosting investment and the capital intensity of the economy. He finds that left party strength boosts labour share when labour is highly skilled but reduces it when labour is predominantly low skilled (and also that left party strength only boosts labour share when corporatism is strong). The picture is further complicated by the importance of coalition politics in both countries, despite their very different sizes. In Ireland, the Labour Party have been very much the junior party in occasional coalitions with a centre-right party, which has tended to dilute their capacity to effect labour-friendly policy, while in Denmark left parties are typically part of a broader 'left coalition'.

In Denmark, a series of Danish parties regularly form a 'left coalition' government. While the results are similar, in practice the dynamics may be different. In Ireland, the dynamics of coalition with the centre right party, generally hostile to unions and welfare, may be to weaken workers over the long run, particularly since many of the issues that served as common ground in these coalitions related to questions of religiosity and morality rather than economic and social inequalities. The negative left party effect in Denmark seems to be

linked to the variation in labour share in the late 1990s and early 2000s. In the late 1990s, economic recovery under the Social Democrats was associated with increased investment and a decline in labour share, while the Liberal government of the early 2000s oversaw a period of credit and consumption driven growth that saw an increase in labour share. This helps to explain the apparently paradoxical effects of left party strength. This would, perhaps ironically, be in keeping with [Huber \*et al.\*'s \(2017\)](#) finding that right wing parties boost top incomes (and thus most likely also labour share).

## 5. Conclusion

Through a comparison of two small open economies with broadly liberal and social democratic characteristics, we showed that the distribution of national income between capital and labour is subject to quite different dynamics in different types of political economy. We found that macro-economic, labour market and political-institutional factors have significantly different effects—in magnitude but also direction—in each context. Methodologically, the effects of individual variables in our parallel national analyses were broadly similar with the findings from pooled analyses, but we were able to show that the impact of these factors depends very much on the overall configuration of national political institutions within a particular 'world of capitalism'.

Nonetheless, the results of our analyses have thrown up some interesting puzzles. Why does marketization—in the form of trade and service economy expansion—reduce labour's share in liberal Ireland but promote it in 'coordinated', social democratic Denmark? Why do the mechanisms of social protection—unionization and welfare spending—work most strongly to boost labour's share in Ireland? Why do some factors we would expect to boost labour's share—welfare spending and left parties—sometimes reduce it (and particularly in Denmark, where we would least expect it)? Our analysis suggests that these puzzles can be answered by combining power resources and institutionalist accounts of distributional conflict in capitalism with theories of how market formation and social protection generate dynamic tensions.

We agree with existing literature on labour share trends that emphasizes how the growing power resources of capital in relation to labour have tended to drive labour's share of national income downwards. For example, we find that union density and foreign investment (measures of the power of labour and capital) significantly affect labour share. However, we find that these effects vary by national contexts and are greatest where levels of power resources are weakest. Furthermore, some of the effects of power resources are quite complex and apparently contradictory, as noted above in our discussion of how left party governmental strength affects labour share in different ways depending on economic development trajectory, timing and national context.

Another source of valuable insight into distributional conflicts in capitalism has been the VOC literature. The original versions of this literature argue that labour gained benefits in LMEs from general assets tradeable in markets (e.g. general skills) and in CMEs from specific assets shielded from competition through social and labour market protections. Workers in LMEs are expected to benefit more from movement towards informational and innovation economies. We find that workers' specialized skills (high tech employment) and collective organization (union density) boost labour share, as expected. However, the effects of those positive factors are significantly weaker in Denmark, where the basic levels of these assets (especially unionization) are higher. Where workers have most of these assets, they

appear to use them least. More telling still, general processes of structural transformation towards the service economy and of marketization (through trade) generate more benefits for labour in CMEs, not LMEs—turning the original literature’s expectations on their head.

These findings are largely compatible with Thelen’s (2014) reformulation of the Varieties of Capitalism argument. Examining the varying trajectories of liberalization in different forms of capitalism, she argues that as coordinating capacity reduces in Social Democracies, specific state interventions increase in importance—a conclusion supported by our finding of the short run effects of welfare spending in Denmark. Similarly, she finds a more extreme version of this is in Liberal economies where intensified deregulation means that production level politics becomes ever more important to redistribution. Again, this is supported in the strong effect of unions in Ireland on increased labour share.

However, our compatibility with Thelen’s argument is subject to two provisos. First, Thelen overestimates the reduction in the capacity of CMEs to generate significant benefits from structural change for labour. In fact, this is one of the clearest of our findings. Profound structural changes—increased proportions of trade and services in the economy and of migrants and women in the labour force—all boost labour share in Denmark and reduce it in Ireland. The effects of these widespread structural changes depend fundamentally on national institutional context. Secondly, where our results are most supportive of Thelen’s argument, is where it departs most from the original VOC distinction between specific and general assets. Particularly important is her recognition that ‘specific assets’ matter most in LME contexts where social coordination capacities are weakest, effectively breaking with a central claim of the earlier literature.

While we find much in our analysis to support Thelen’s (2014) analysis, we also suggest that there are significant dynamics—particularly in liberal economies—that are underestimated in both the old and new VOC perspectives. Given this range of options and the relative predictability and security of their bargaining position, we also find that it is easier for the Danish to trade market for social wages and short-term for medium-term considerations. This makes it more likely that they can generate widespread support for large scale economic changes, as they are better placed to reap the benefits on a broader basis. As ‘empowered market participants’ (Pontusson, 2011), Danish workers and their organizations are better able to shape market institutions to their own benefit (Thelen, 2014). This is not without risks, however, and it is just as likely (if not more so) that Denmark will move over time closer to the Irish model as it is that Ireland will move towards the Danish. Nonetheless, marketization is planned but must also take hold in a social structure and this iterative relationship between marketization and social embedding means that market mechanisms can work in ways that enhance the prospects of labour—if the context is one where labour has sufficient power.

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