

# Functional Distribution of Income, Inequality and the Incidence of Poverty: Stylized Facts and the Role of Macroeconomic Policy

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## Abstract

Using two high-quality and homogeneous datasets we find evidence of a strong and persistent link between the functional and the personal distribution of income on an international scale. In a panel of 25 countries, with most data starting in 1970 or before, we document that: (1) the labor share fell or remained constant in 23 countries while wage inequality (in the manufacturing sector) rose or remained constant in 18 countries. A decreasing labor share and increasing inequality is observed simultaneously in 17 (possibly 19) of the 25 countries. (2) Both inequality and overall wage share exhibit a turning point in the early 1980s (or 90s for some countries). (3) The pattern of poverty is closely related to the pattern of inequality: available data shows that countries with larger redistributive systems tend to be more equal and tend to have lower poverty rates.

What factors likely caused those similar patterns in poverty, personal and functional distribution of income? As expected, we find evidence of an important role for purely economic considerations. But the simultaneous timing and the strong, downwards convergence of European labor shares during the early stages of the European construction imply that other factors are at play. We suggest that the widespread structural changes in institutions and economic policies since the start of the 1980s, in Europe and elsewhere, explains the bulk of the international pattern in poverty, personal and functional distributions. Our findings confirm those of the major OECD (2008) research program on inequality and poverty, while extending it on the role of functional distribution and stressing the importance of macroeconomic policies.

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**Keywords:** Inequality, functional distribution, poverty, economic policy

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## **I. Introduction**

The *functional* income distribution makes the distinction between the shares of types of income used for different spending purposes, while the *personal* distribution of income is a measure of inequality of a specific type of income. The former is an indicator of how much of labor income there is to share, while the latter indicates how equally labor income is distributed among individuals. Both are related to the same measure, income, and both are a measurement of the “distribution” of that income. The initial intuition underlying this paper takes the form of a question: could the personal and functional distribution of income be related, as (Serrano 2007) suggests? As such this question can be addressed from a theoretical or an empirical way. But interestingly enough, the two distributions have almost never been related to each other, whether in the empirical or theoretical literature. There are two reasons to this.

First, most of the work on functional and personal distributions of income has long suffered from a lack of empirical evidence (data) due to important measurement difficulties. Although there remain some difficulties, those limitations have been dramatically reduced thanks to the recently availability of high-quality datasets. Yet for a long time research has focused on a theoretical approach. The second problem is that important controversies, among this body of theoretical research, have hindered any reconciliation between functional and personal distributions of income. Inequality is still widely regarded as a microeconomic phenomenon, mostly explained by personal characteristics, while the issue of factor shares is intrinsically a macroeconomic phenomenon. In these pages we will present the state of economic theory but, using two new datasets, we are stressing the teachings of empirical evidence.

The rest of the paper is organized as follows: section two focuses on the functional distributional of income and presents the economic theories, the empirical evidence and the relative importance of the factors affecting the wage share. Section three presents the theories and empirical evidence for the personal distribution of income (inequality). Section four presents a short note on with poverty and redistributive policies while section five concludes.

## **II. The functional distribution of income: theories and measurements**

### **1. Economic theories: two views**

The functional distribution of income makes the distinction between the shares that different types of income represent in total income. Although several other decompositions may be interesting, the most

common distinction is between the labor share and the capital share<sup>2</sup>. In the rest of this paper we will use the labor share as our preferred measure, unless otherwise noted. The capital share can immediately be derived as one minus the labor share, since

$$\frac{W}{Y} + \frac{\Pi}{Y} = 1 \quad (1)$$

where  $W/Y$  and  $\Pi/Y$  represent the labor and capital shares. A useful decomposition of the labor share of income is

$$\frac{W}{Y} = \frac{w \cdot N}{P \cdot Q} = \frac{w}{P} / \frac{Q}{N} = w_R / A_L \quad (2)$$

where  $W$  is the wage bill,  $Y$  is national income (value added),  $w$  the nominal (average) wage,  $N$  the level of employment,  $P$  the price level,  $Q$  is output and the ratios  $w/P$  and  $Q/N$  are the real wage  $w_R$  and labor productivity  $A_L$ , respectively. Equivalently in rates of change:

$$\left(\frac{\dot{W}}{Y}\right) \simeq \dot{w}_R - \dot{A}_L \quad (3)$$

Equation (3) states that the labor share of income goes up when real wages outpace labor productivity. Conversely when labor productivity gains are not passed on to workers, the wage share goes down and the capital share goes up. The labor share is also sometimes referred to as the real unit labor cost (the unit labor cost being  $w/A_L$ ); similarly the cost of doing business goes up when real wages outpace workers' productivity.

Note that the decomposition above is a useful one but not the only possible one; in particular the labor share does not uniquely depend on real wages and productivity. Other factors may affect the labor share indirectly, through an influence on real wages or on productivity. More importantly the simple line dividing labor and capital income is not only related to labor. It is indeed possible have unchanged conditions on the labor market and to observe a fall in the labor share simply because the profit share is going up. Thus, the labor share of income is also related to profits—a feature quite commonly overlooked.

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<sup>2</sup> In the following we will refer to the labor and capital shares, as compared to the older terminology of wage and profit shares. The change is not without consequences; in particular the concepts of “labor and capital” are broader than their “wages and profits” counterparts. Labor shares usually measures compensation which includes benefits, pensions and the labor part of self-employment income, while the capital share covers interest, rent, any business payments and the capital share of self-employment income.

Since the relative shares definition involves macroeconomic aggregates, most economists would consider the functional distribution of income as a *macroeconomic* indicator. It is no surprise to find that most of the literature in the topic is macroeconomic in nature, and is inherited from the times when economic science was still called political economy. Every major school of thought has developed its own theory of income distribution. Thus the term “income distribution” has become generic yet despite this, it still embodies major controversies. Providing an exhaustive survey of the literature is nearly impossible without simplifying the exposition and make undue justice to the economic models. To fix ideas we will only attempt at summarizing what could be considered as the major contributions.

It may be useful to introduce the literature on the functional distribution of income by introducing a dichotomy between the classical and non classical approaches (“two views”, Kregel 1971). However such distinction may be too simplistic (Giovannoni 2006), mostly for two reasons: (1) both the classical and the “non classical” are sometimes overlapping, as opposed to presenting a clear-cut distinction and (2) it is especially difficult to find common ground between heterodox theories, except maybe for their rejection of neoclassical economics. As a result it may be more useful to adopt a chronological exposition of how the various theories of functional income distribution come to –and then attempt at finding a common thread.

### **a. Classical theories**

From a historical perspective, the earliest form of functional income distribution theory –in its most formalized and advanced form– is to be found in the works of David Ricardo. In the first paragraph of the preface to his magisterial work, Ricardo (1817) spells out the main scope of his inquiry as “*To determine the laws which regulate this distribution [between rent, profit and wages], is the principal problem in Political Economy*”. The whole “*produce of the earth*”, Ricardo states, is divided by paying rent first, following the principle of decreasing marginal productivity (here, of land). The most productive acres of land are put in use first, says Ricardo, so that through time only less productive acres remain –and the best acres are the priciest.

The distribution between the remaining wages and profits is then made. Contrary to his marginalist followers Ricardo does not apply the concept of decreasing marginal productivity to labor and capital. Instead Ricardo proposes a reformulation of his friend Malthus’s principle of population: workers will multiply so much, says Ricardo, as to make the wage bill grow faster than profits. As a result the share of

profit is bound to decrease in time, leading ultimately to a situation Ricardo called the stationary state: with profits being squeezed out of the system, capitalists would have no incentives to expand their activity and economic growth will come to an end.

Ricardo's insight came to be challenged at the end of the 19<sup>th</sup> century. The position of the new economic school, only later to be called the marginalist or neoclassical school, is best summarized by two quotes. Stanley Jevons, one of the main proponents of the new school in Europe, explains the scope of his new approach in the following way: *"The conclusion to which I am ever more clearly coming is that the only hope of attaining a true system of Economics is to fling aside, once and for ever, the mazy and preposterous assumptions of the Ricardian School. Our English Economists have been living in a fool's paradise. The truth is with the French School, and the sooner we recognize this fact, the better it will be for the world"* (Jevons 1871). On the other side of the Atlantic, John Bates Clark, the founder of the American branch of neoclassical economics and *"a central figure in the emergence of the marginal productivity analysis of distribution"* (Baumol 1985), states the conclusion of the approach as *"It is the purpose of this work to show that the distribution of income to society is controlled by a natural law, and that this law, if it worked without friction, would give to every agent of production the amount of wealth which that agent creates"* (Clark 1899).

The marginalist revolution was born on the basis to escape a "mazy" political economy by replacing it with a more sophisticated economic science, characterized by the sound mathematics. Ricardo's decreasing marginal productivity principle was generalized; all factors of production now had the same (diminishing returns) property and could be put under the umbrella of a unique production function (Bohm-Bawerk 1890, 1895 and Wickseil 1893, 1901). The most famous of those production functions is that proposed by Cobb and Douglas (1928),  $Y = AL^\alpha K^\beta$ , for which one verifies that the labor share  $W/Y$  is indeed the parameter  $\alpha$ , which is assumed to be constant<sup>3</sup>. The constancy of the labor share implies that workers are being paid real wages set at the level of their own labor productivity, as equations (2) and (3) imply.

Three major points stem from the analysis presented thus far. The first conclusion of the marginalist school is that everybody will be paid according to his/her contribution to the production process. To some extent modern economics is still under the influence of such conclusion. This is certainly a major –and reassuring– epilogue: John Bates Clark was right. But what this implied is that the question of inequality

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<sup>3</sup> The labor share will only be constant if we have constant economies of scale, if there are decreasing marginal factor productivities, and if the system is overall perfectly competitive, i.e. if there are no frictions in Clark's "natural law". The Euler theorem provides the mathematical proof for such assertions.

was in itself a non-issue: first because it was embodied in a larger theory, that of functional income distribution, and second because such system was characterized by an intrinsic fairness. Much of the literature on inequality as we know it today was indeed not born at that time, only much later.

The second (and implied) conclusion is that the relative factor shares are constant through time. As such this conclusion may appear quite striking; Solow himself expressed “skeptisms” about it (Solow 1958). In particular, wouldn’t technological improvements and productivity affect the relative shares? Ricardo had already foreseen the way out of the stationary state: improvements in productivity or technology (but he did not develop the idea further in connection with income distribution). Several cases for productivity improvements have been proposed. Harrod-neutral technological change is an improvement affecting only labor productivity; Solow-neutral technological progress affects only the productivity of capital while Hicks-neutral technological progress affects both factors (Giovannoni 2006). Corry (1966) attempts at summarizing the effects of technological change on the relative shares of income in the neoclassical framework. His conclusions are that the inclusion of technological progress are certainly a welcome development, but that this did not lead to a major leap forward in economic research: *“I have argued that the basic models [...] can be made to fit the broad facts of history. But suppose the facts had been different, would we have rejected the models? I think not. These models are really better described as frameworks for handling the relative share problem and only make specific predictions with added restrictions. Thus, what I have called the neoclassical approach does not in general predict the course of relative shares. [...] The state of economic knowledge does not enable us to predict the direction of impact of innovation on relative shares”*.

The third conclusion, shared by both the Ricardian and marginalist tradition is that everything is a matter of a simple universal law –a law of Nature. Such a law would be inescapable, only possibly to be disturbed by technology –which itself is ascribed to an exogenous factor, as reflected in the “Solow residual”. Much of the later economic research was concerned by providing more details than just a natural law. This body of research was largely under the influence of Keynesian economics and amounted to an important reformulation of the classical factor share theory. Table 1 provides a summary the major contributions.

**Table 1 – Major factors affecting income distribution**

<b>Economic</b>	<b>neoclassical explanations</b>	Natural laws, technological change, relative productivities, capital-labor substitution
	<b>Demand-based explanations</b>	Globalization and relative trade prices (Stolper and Samuelson 1941)
		Investment rate (Kaldor 1956) Unemployment (Goodwin 1967)
		Monopoly power, labor power, policies (Kalecki 1938)
<b>Structural and policy explanations</b>		Liberalization, privatization, financialization, deregulation Oil price, bargaining power, unionization, capital-output ratios Composition effects, technical change

## **b. Demand-based theories**

The non classical approaches, on the other hand, do not generally arrive at similar conclusions in terms of natural laws. It is good to focus on only four major approaches here, namely those of Stolper and Samuelson (1941), Kaldor (1956, 1957), Goodwin (1967) and Kalecki (1938, 1954). Such a dramatically narrowed choice is motivated by the fact that those are oft-quoted theories whose usefulness will become more apparent through the rest of this paper. We also chose those theories not because they are disparate hard-to-reconcile theories, but because they have in common to relate functional distribution to *demand* conditions in the economy (respectively: the investment share, unemployment, macroeconomic policies and trade).

As a starting point it may be important to note that those three approaches, despite being loosely referred to as “Keynesian”, ought better to be called at best “heterodox”, for Keynes said very little on income distribution. Indeed Keynes (1936, ch. 2) starts by assuming that “[postulate 1:] *The [real] wage is equal to the marginal product of labour. [...This is] subject, however, to the qualification that the equality may be disturbed, in accordance with certain principles, if competition and markets are imperfect [...]* In emphasising our point of departure from the classical system, we must not overlook an important point of agreement. For we shall maintain the first postulate as heretofore, subject only to the same qualifications as in the classical theory”. The result is paradoxical; although Keynes (1936, chap. 24) famously concludes his work by saying that “[the inequitable distribution of wealth and income is one of] *the outstanding faults of the economic society in which we live*”, Keynes assumes income distribution to be constant through much of his work. Maybe Keynes’s disregard can be explained by his point of

view, expressed only later, according to which “[the constancy of relative shares] *is one of the most surprising, yet best-established facts in the whole range of economic statistics both For Great Britain and the United States [...] the result remains a bit of a miracle*” (Keynes 1939). Keynes’s followers attempted, more or less coherently, to outline the features of a “Keynesian” theory of income distribution.

We start by a model of income distribution quite often overlooked (it brings insights drawn from international trade theory). The core of the theory consists of the models from Ricardo (1817) Heckscher (1919), Ohlin (1933) and Stolper and Samuelson (1941). We discuss this body of work first because clearly it has roots in neoclassical economics (all four models rest on the assumption of perfect competition and full employment of resources). Yet the Stolper and Samuelson theorem states that trade variables – imports and exports are demand variables– influence income distribution<sup>4</sup>. The exposition consists of three steps. First, Ricardo predicts that trade will take place following comparative advantages and that trade equalizes the relative prices of traded goods. Second, Heckscher and Ohlin note that countries will export goods that utilize their abundant factor of production because those products turn out to be cheaper (a labor-abundant country will export labor-intensive goods). Third, Stolper and Samuelson prove that relative price convergence will benefit the owners of the abundant factor of production more than the owners of the scarce factor of production. Thus, Stolper and Samuelson’s celebrated article has income distribution implications: not every economic group benefits equally from trade<sup>5</sup>.

There are two teachings most relevant to our inquiry into income distribution. First and if Heckscher and Ohlin are right, we should observe convergence of *factor* prices among trading nations. Second, greater trade openness in more capital-intensive countries should lead to a lower wage share. Again, those are theoretical presumptions which are testable against the data. However the results should be carefully interpreted. A change in income distribution in countries whose production structure is mostly characterized by imperfect competition (increasing return or interindustry trade à la Krugman 1979, and Helpman and Krugman 1989) cannot be ascribed to a Heckscher-Ohlin-Samuelson effect to the extent that Heckscher-Ohlin-Samuelson assumes perfect competition.

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<sup>4</sup> More precisely the models insist on the *prices* of traded goods, but relative prices affect production volumes. For each and every price a labor-abundant country will have a comparative advantage, and thus export more of the labor-intensive good than the other countries.

<sup>5</sup> An example would be a labor-abundant country. This country will have lower costs in labor-intensive sectors and its exports will consist of those labor-intensive goods, at lower relative prices than other countries can propose. Yet domestic prices will converge following openness to trade and the export prices of the labor-abundant countries will rise. This would improve the relative income of the workers in the labor-abundant country but hurt the workers in the (relatively more) capital-abundant country.



Another important model of income distribution is that of Kaldor. Kaldor (1956, 1957) spells out six famous “stylized facts”, to be understood as prevailing mostly over the long run: (1) labor productivity is constant, (2) capital productivity is constant, (3) constancy of the capital-labor ratio, (4) constancy of the distribution of income, (5) relative stability of the real interest rate and (6) there is a great disparity of labor productivity growth between countries. The central feature of Kaldor’s income distribution theory rests on the algebra allowing him to derive the famous equation

$$\frac{\Pi}{Y} = \frac{1}{s_c - s_w} \frac{I}{Y} - \frac{s_w}{s_c - s_w} \quad (4)$$

which states that the profit share is a function of the investment rate (as well as of the capitalists’ and workers’ propensity to save,  $s_c$  and  $s_w$ ). Kaldor was strongly criticized for this work because of the specific framework surrounding Kaldor’s equation. His assumptions, such as assumption #4 above, were deemed overly restrictive to the extent that they relegated Kaldor’s conclusions to be valid only in the special case of full employment (see Pasinetti 1962 or Samuelson 1964 who renames Kaldor with Jean-Baptiste Say’s first name). The impossibility of unemployment is certainly not a Keynesian feature –but two other conclusions of Kaldor are. Equation (4) shows indeed that capitalists get (in profits) what they spend on investments (and workers spend what they get if  $s_w = 0$ ). Most importantly, Kaldor’s algebra shows that income distribution is related to the investment rate, indeed a specific, *demand* variable. Thus we would expect, in empirical studies, to find the profit share to go up during booms and down during depressions, which is a proposition testable against the data.

Goodwin (1967) also uses algebra but it certainly makes for a much more original model of income distribution. The model is that of a predator-prey, where the (un)employment rate and the labor share chase each other, forming a circular phase diagram. The predator and the prey never completely exhaust each other, yet when the wage share gets “too high” it becomes detrimental to labor and unemployment rises –the wage share acts as the predator until unemployment reduces wage costs and the circle can take place another time. Just like in the case of the Kaldor model, Goodwin’s model rules out the possibility of *persistent* unemployment: income distribution will eventually adjust so as to restore the correct level of employment (somewhere around full employment); this is only a matter of time. To the extent that unemployment is a starting point of Keynesian economics, the Goodwin model can be deemed as such – yet unlike in Keynes (1936), Goodwin’s unemployment is not allowed to persist. The benefit of Goodwin’s model is that, just like Kaldor’s, it relates income distribution to the business cycle and more precisely to a cyclical effect in unemployment. Thus, we should expect to see unemployment rise when the labor share is “above equilibrium” –again, a proposition we can take to the data.

The model the least in terms of “natural laws” may be found in Kalecki (1938, 1954). Contrary to Kaldor and Goodwin, Kalecki sets his analysis in the context of imperfect competition from the very start. Competition and information are imperfect, so that there is no natural tendency for the economy to converge towards any stationary state or full employment situation. What does matter for Kalecki, is the mark-up over production costs, the amount of unused capacity (of labor and capital) and the economic policy of the State. The latter is central to the Kaleckian analysis for it is the only way to restore full employment, or a “fairer” distribution of income –if there is a political willingness to do so. The former is just as important; Kalecki relates the mark-up to the degree of monopoly, to certain profitability “norms” (which are mostly imposed in the banking sector) and to the relative power of labor unions, in a class struggle framework. Thus for Kalecki the further we are from perfect competition, the more the distribution of income is likely to be influenced by economic policy (if we consider the mark-up as exogenously given). As for the previous theories, Kalecki’s position is testable against the data: do we observe income distribution to be affected by economic policies? The difficulty here lies in what measure to use as representing the stance of economic policy (government spending, budget deficit, ...?)

### **c. The state of economic theory on functional income distribution**

The above exposition of income distribution theories make hazardous any attempt at summarizing them. A general appraisal of those theories leaves an uneasy feeling. The point is not so much that each theory stresses its own dominant factor – it is almost certain that several factors underpin the trends in the factor shares. The uneasy feeling comes from the conclusions. Notwithstanding a stress on demand variables, the models of Kaldor and Goodwin are set in near-perfect competition and their conclusion are in line with the original marginalist presumption that income shares are constant.

But suppose we observe non-constant shares. What theoretical explanation should we retain? Maybe paradoxically, one has to look mostly towards neoclassical developments, in the effects of trade or in the effects of technological progress. Or maybe we need to look at the cases when neoclassical assumptions are not fulfilled. Under perfect competition the labor shares are constant. Does that mean that labor shares are not perfect in imperfect competition? What happens to the labor share when labor is less than perfectly mobile, if trade is restricted, if information is not perfect, if we have persistent and involuntary unemployment, if products are not directly comparable, if there are economies of scale, if taxation levels differs, if we have proactive economic policies, if market structures differ, if technological advances are not equally shared between factors, if factors are not perfect substitutes? It is quite tempting to say that

the income shares would not be constant, but that statement implies the use of the conditional. In truth there are is no theory on those questions. More research is needed; especially research that focuses on the effects of trade and technological progress on both unemployment and the factor shares<sup>6</sup>. In the meantime, the only economic theory left which does not presume full employment nor the constancy of the relative shares is Kalecki's. So was Kalecki right? We do have yet another dimension to explore, that of empirical studies.

## **2. Measurements: is the labor share constant?**

Despite its prevalence in generations of macroeconomic theories, empirical evidence on the functional distribution of income is scarce. The difficult data availability explains, in part, the shift of focus towards the other distribution of income, inequality at the personal level, for which data has been more widely available. But thanks to recent databases, it is now possible to study the functional shares in reasonably good conditions.

Data on factor shares is scarce because compiling this type of data requires much control over statistical sources and an infinite precision to assure a reasonable accuracy in international comparisons. In addition the stability of the factor shares (or the factors affecting it) can only be assessed if we have long run measures of the functional shares, on a consistent basis, and on an international scale. While a lot of advanced Nations collect labor statistics reasonably frequently and accurately, many countries outside of the developed Nations don't even compile the statistics necessary to derive the labor share. Even within advanced Nations difficulties arise. Computing labor shares, say, requires actual data on wages and benefits as well as price level and output (from published or unpublished sources), within comparable sectors and with comparable definitions. Yet classifications change, definitions change and the overall economy evolve. Reliable estimates must account for changing definitions and the effect of self-employment income (and its split in between a labor and a capital component), tax adjustments have to be made, just like adjusting for owner-occupied housing.

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<sup>6</sup> The skill-biased technological change is well known, but it covers a microeconomic explanation of the *personal* distribution of income (inequality). Technological change is seen as rewarding skilled individuals more than the non-skilled. But does that necessarily imply that non-skilled workers will slowly lose ground (income) through time, what happens to the overall wage bill and the labor share?

Because of these stringent requirements all data on factor shares can only be made in large statistical agencies, often international organizations or institutions<sup>7</sup>. There are currently six major sources of international comparisons of labor shares / labor costs: the Bureau of Labor Statistics (BLS), the European Central Bank (ECB), the European statistical agency Eurostat and three by the OECD: the OECD-EO (economic outlook), the OECD-MEI (main economic indicators), and the recent OECD-SULCI (System of Unit Labor Costs Indicators, started in 2007).

None of the six sources provides high-quality, dense, broad-coverage and long-sample data on functional distribution. Some databases provide high frequency data (quarterly or even monthly, like OECD-MEI or the ECB); other datasets are plagued by either a small number of countries (OECD-MEI) or a too short sample (about ten years at best for the most countries in ECB and Eurostat); some others officially acknowledge important data limitations (OECD-EO). As for the BLS, it only produces annual data for the manufacturing sector; it is problematic to study a high-level aggregate such as the labor share in relation to such a small (and shrinking) part of the economy as the manufacturing sector.

In this context of data limitation, only one source provides a “sufficient compromise” between quality and availability. The OECD-SULCI should be lauded as the first and most effective attempt at computing income distributions comparable at the international level. Made available in 2007, the OECD-SULCI provides a good compromise of sectors, countries and time-span covered (see Table 2 for coverage details)<sup>8</sup>. The database covers 30 countries plus the Euro-12 area but data is not available on a long term basis for four eastern European countries and Switzerland (CZE, HUN, POL, SVK, SWZ). This leaves 26 countries with a labor share available consistently on a period from 1973 (or sometimes earlier) to 2003. This represents a record of 1034 coherent, annual, seasonally-adjusted observations. The OECD-SULCI

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<sup>7</sup> The work of Ellis and Smith (2007) is worth singling out as the only, it seems, non-institutional attempt at computing income shares for a set countries. Their approach makes profit shares available from 1960 to 2005 on an annual basis. However their calculations do not seem to adjust for taxation, housing and self employment (in particular) and those may add up to some substantial corrections. In practice we observe large short run differences with other databases like the OECD-SULCI but the main conclusions (see *infra*) are similar.

<sup>8</sup> The OECD-SULCI uses the sectors of the *International Standard Industrial Classification* revision 3 (ISIC-3) as defined by the United Nations. The the private sector, the public sector and the household sectors are covered (Agriculture, hunting and forestry, Fishing, Mining and quarrying, Manufacturing, Electricity, Gas and water supply, Construction, Wholesale and retail trade; Repair of motor vehicles, Hotels and restaurants, Transport, Storage and communications, Financial intermediation, Real estate, Renting and business activities, Public administration and defense, Education, health and social work, Other community, Social and personal service activities, Private households with employed persons, and Extra-territorial organizations and bodies). The OECD database provides labor share estimates for all those sectors jointly (“total economy”, used here) and seven subsectors (“manufacturing”, “industry”, “construction”, “trade, transport and communication”, “financial and business services”, “market services”, and “business sector excluding agriculture”).

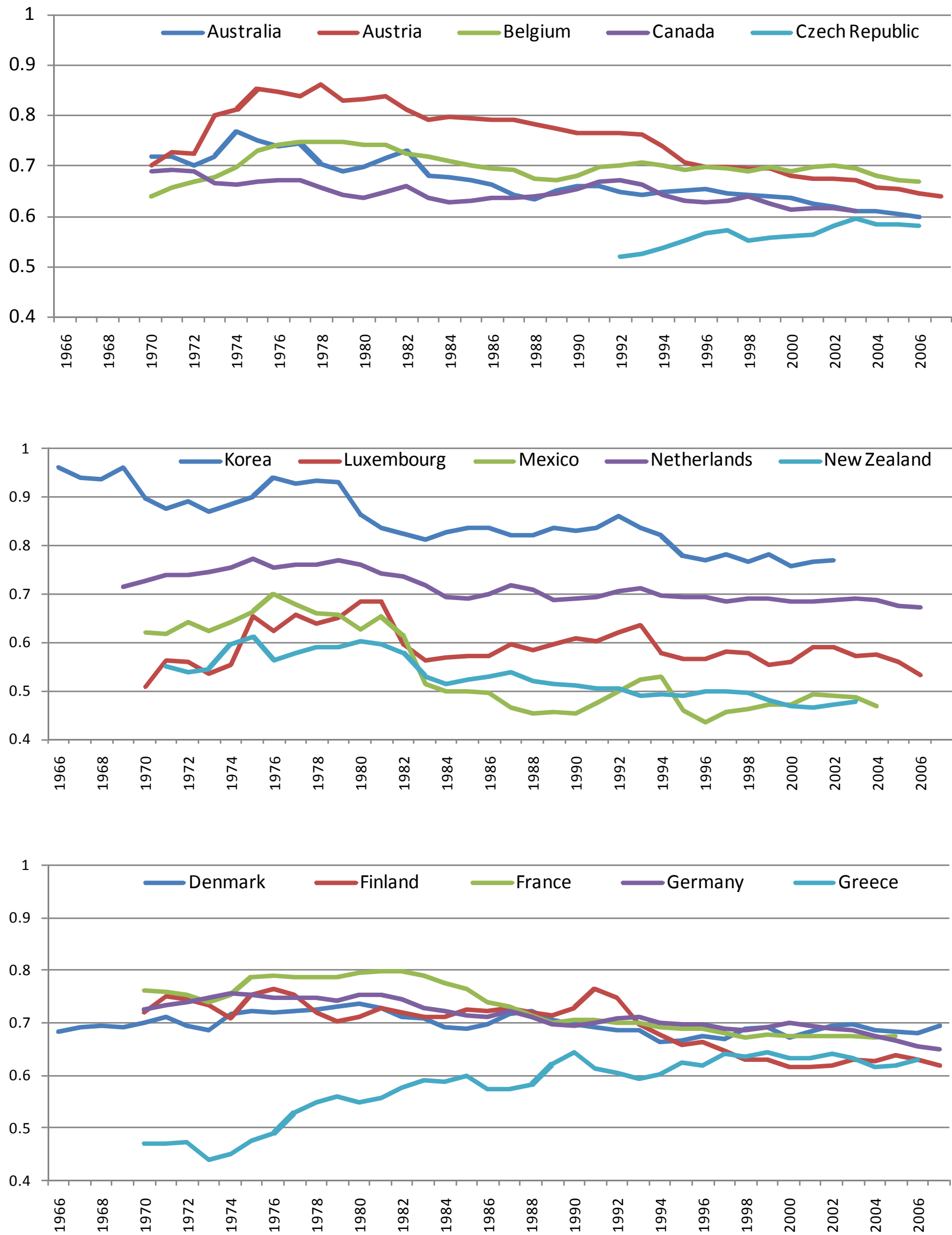
will be our labor share database of choice in the rest of this chapter. Graph 1 presents the labor shares for all 30 countries.

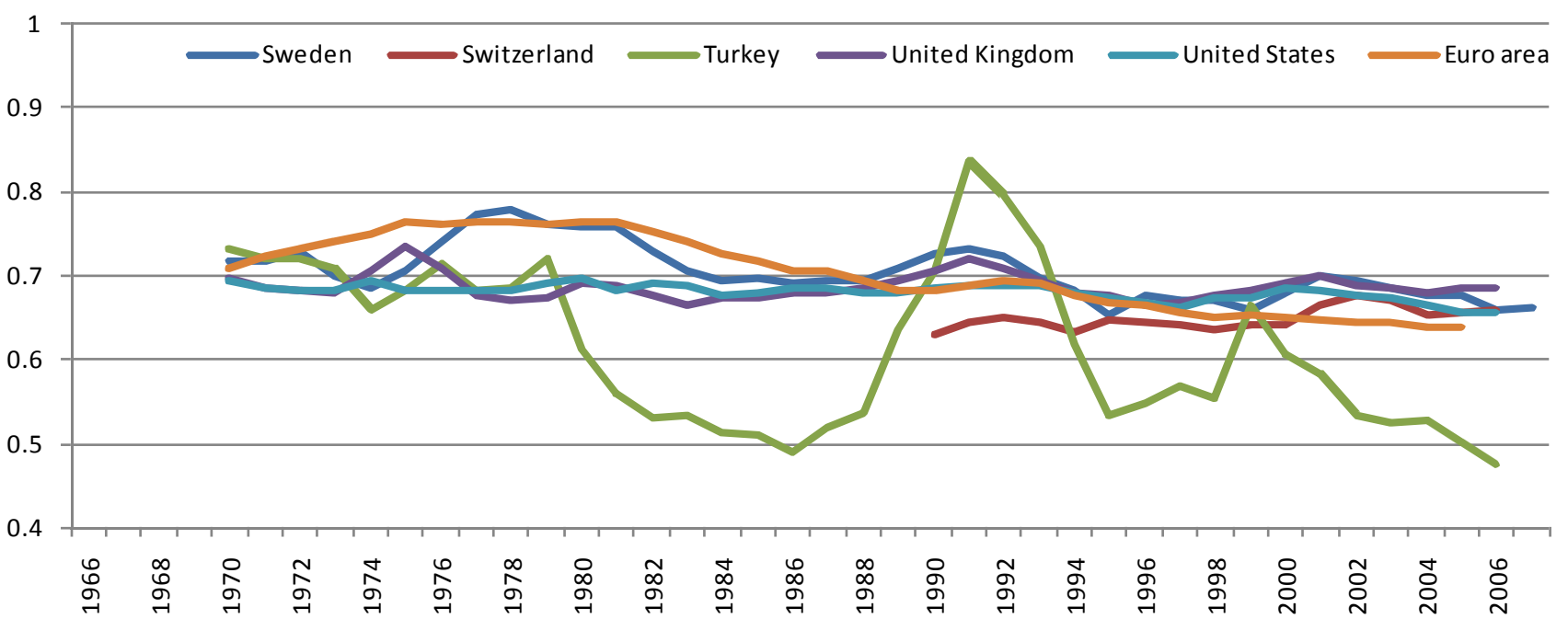
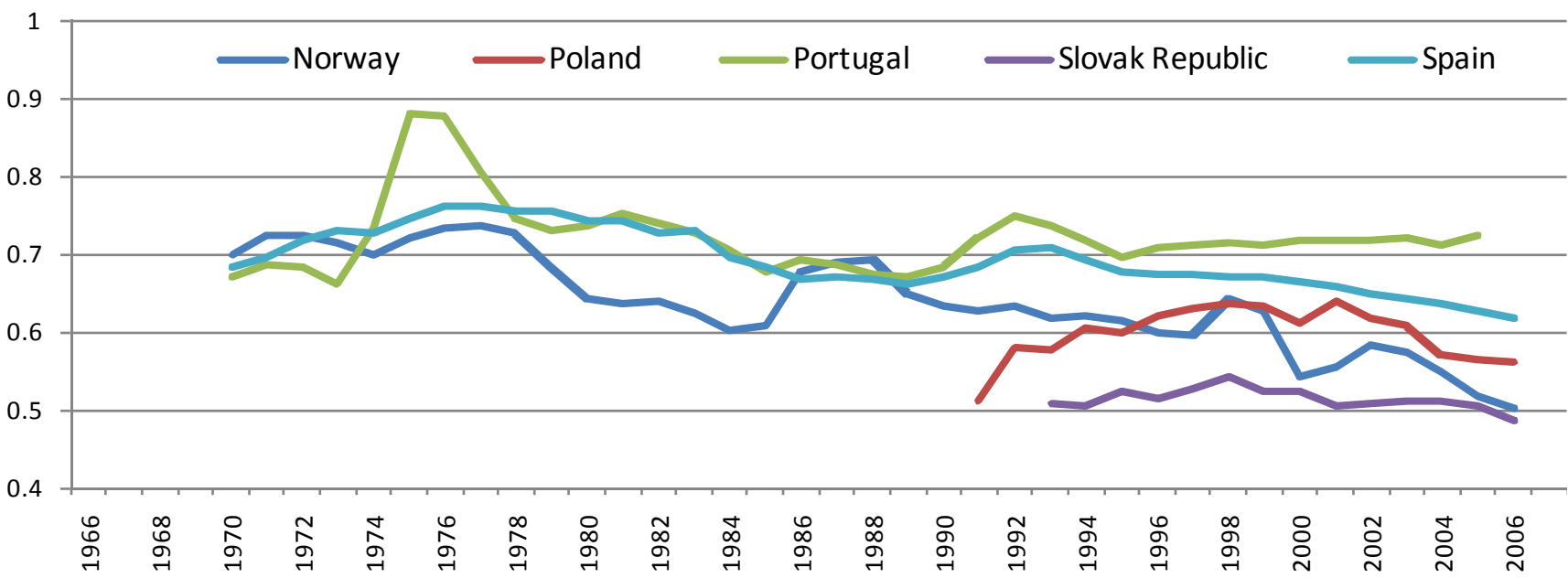
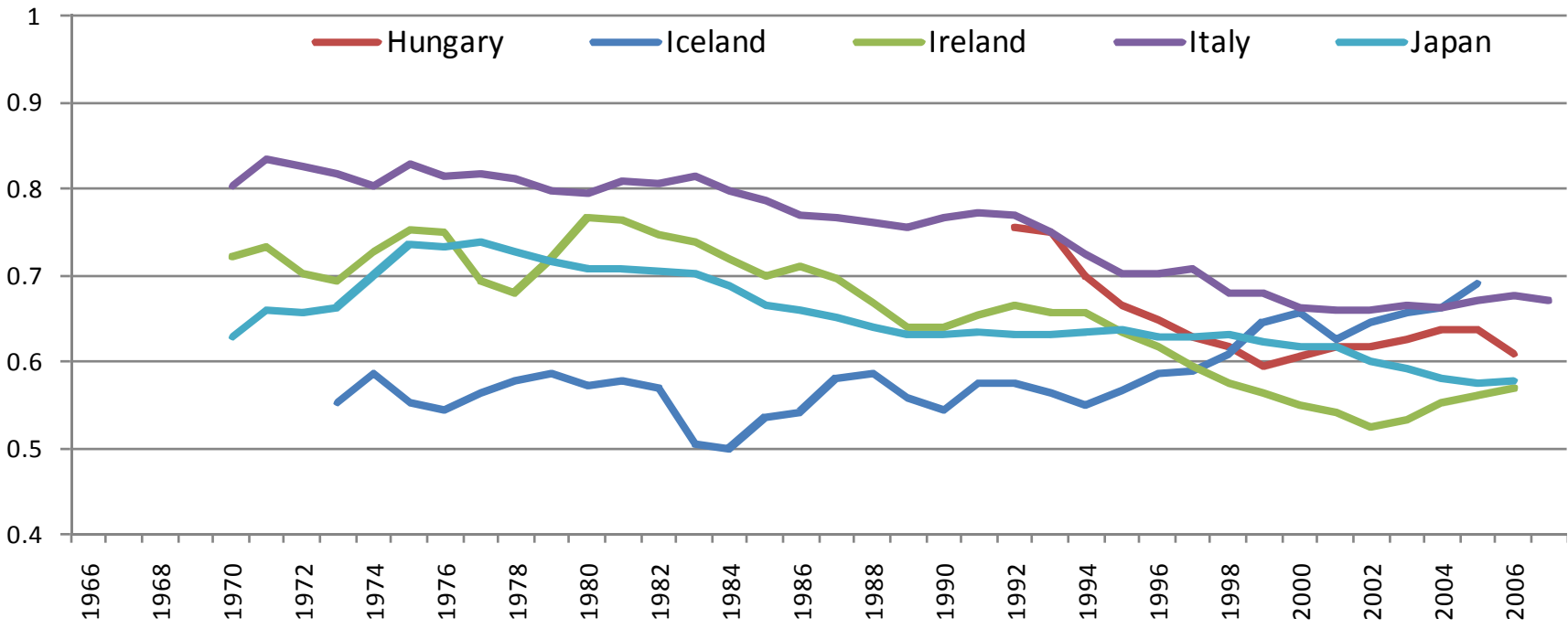
**Table 2. Data availability**

Country	Code	Data availability		Notes ( <i>years of overlap</i> )
		Labor share OECD-SULCI (years)	Inequality UTIP-UNIDO (years)	
Australia	AUS	70→06 (36)	63→01 (38)	(31)
Austria	AUT	70→07 (37)	63→99 (36)	(29) No inequality data for 96
Belgium	BEL	70→06 (36)	63→96 (33)	(26) No inequality data for 93
Canada	CAN	70→03 (33)	63→01 (38)	(31)
Czech Republic	CZE	92→06 (14)*	87→95 (8)*	(3)*
Denmark	DNK	66→07 (41)	63→98 (35)	(32)
Finland	FIN	70→07 (37)	63→00 (37)	(30)
France	FRA	70→05 (35)	77→00 (23)	(23) No inequality data for 93-95
Germany	GER	70→07 (37)	63→00 (37)	(30)
Greece	GRC	70→06 (36)	63→98 (35)	(28)
Hungary	HUN	92→06 (14)*	63→00 (37)	(8)*
Iceland	ISL	73→05 (32)	68→96 (28)	(18)
Ireland	IRL	70→06 (36)	63→00 (37)	(15)
Italy	ITA	70→07 (36)	67→00 (33)	(30) No inequality data for 88
Japan	JPN	70→06 (36)	63→00 (37)	(30)
Korea	KOR	70→06 (36)	63→01 (38)	(31)
Luxembourg	LUX	70→06 (36)	63→00 (37)	(15)
Mexico	MEX	70→04 (34)	70→00 (30)	(30)
Netherlands	NLD	69→06 (37)	63→00 (37)	(31)
New Zealand	NZL	71→03 (32)	63→98 (35)	(27) No inequality data for 93
Norway	NOR	70→06 (35)	63→01 (38)	(31) No inequality data for 92, 93
Poland	POL	91→06 (15)*	70→01 (31)	(9)* Break in labor share data in 02
Portugal	PRT	70→06 (36)	75→00 (25)	(18) No inequality data for 90-95
Slovakia	SVK	93→06 (13)*	91→99 (8)*	(4)* No inequality data for 95, 96
Spain	ESP	70→06 (36)	78→06 (28)	(19)
Sweden	SWE	70→07 (37)	63→00 (37)	(30)
Switzerland	SWZ	90→06 (16)*	80→90 (10)	(1)*
Turkey	TUR	70→06 (36)	63→00 (37)	(13)* Break in labor share data in 99, 02
Great-Britain	GBR	70→06 (36)	68→00 (32)	(30) Add'l inequality data for 63. Breaks in labor share data in 83, 91 and 04
United-States	USA	70→06 (36)	63→01 (33)	(31) No inequality data for 96
Euro-12	EUR12	70→05 (35)	n/a	

**Note:** \* indicates small coverage.

**Fig. 1 – Labor shares in 30 countries, 1966-2007**

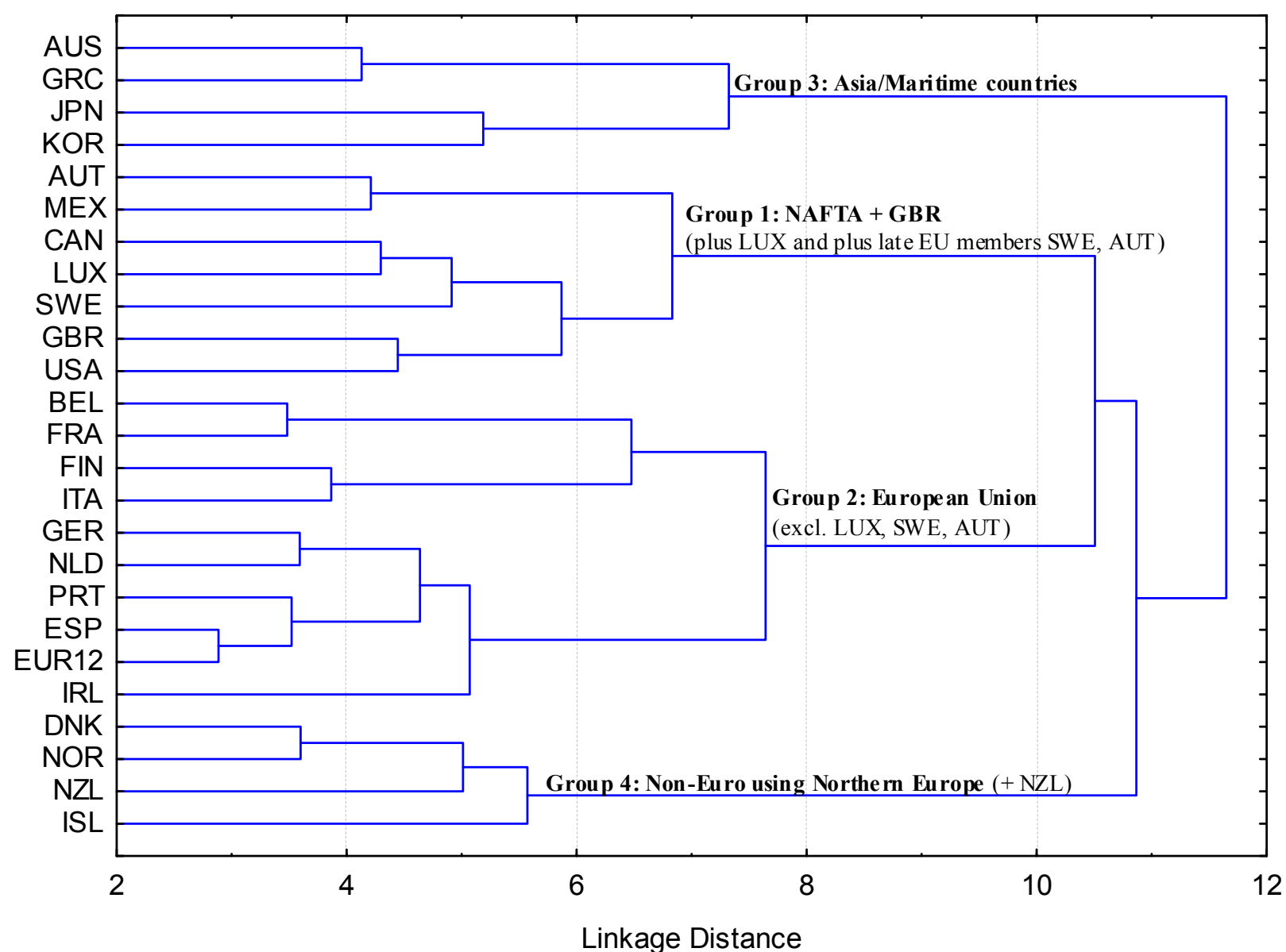




Source: OECD system of unit labor costs indicators.

Fig. 2 shows that labor shares vary widely from country to country –there is undoubtedly a country-specific explanation to the evolution of the labor share. The differences between countries may be so important that it may be hard to reconcile the facts. Yet the observed labor shares are not independent and several co-movements emerge. To investigate this intuition further we attempted at grouping labor shares according to the similarity of their evolution through time. Cluster analysis is an appropriate tool to execute this task, as it is a statistical method providing hierarchical structure, or tree, of whatever time series it is applied to. Cluster analysis, applied from 1984 to 2003, provided us with a tree grouping labor share over time by degree of similarity of evolution over time<sup>9</sup>. The results are reported on Fig. 2.

**Fig. 2 - Tree Diagram of the labor share movements in 25 countries, 1984-2003**



**Source:** author's calculations, using cluster analysis with Ward's method and Euclidian distances.

<sup>9</sup> To avoid differences in volatility or mean we used cluster analysis on the standardized rates of change of the labor shares. In this cluster analysis each time-series (labor share) was given a metric, the Euclidian distance, and is originally placed in its own single cluster. Then clusters are linked by an amalgamation routine (Ward's method was used here as it minimizes the between-cluster variance and is regarded as very efficient). In practice cluster analysis is sensitive to breaks in the data; this is the reason why we only consider data after 1984 (this date appears relevant on Fig. 3, top panel). See Galbraith (1998) for other applications of cluster analysis.



### 3. Beyond economic theories: What drives the observed labor share?

In the rest of this section attempts at providing a summary of factors which seem to affect the observed labor shares. Our goal is to show that labor shares have responded to economic as well as extra-economic reasons. Four factors seem to dominate:

1. *Geography and history*: neighboring countries tend to see their labor shares evolving similarly
2. *Economic Policy*: in some areas we observe labor share convergence and this is the direct consequence of economic policy choices
3. *Economics, Trade and international prices*: labor shares are growth-dependent (contra-cyclical), which to some extent can be explained by Kaldor's and Goodwin's theories. Similarly we do find some evidence to make the case that trade explain the observed labor share patterns (Stolper and Samuelson 1941)
4. *Institutions and politics*: some labor share levels coincide with specific political events and regime shifts.

Two recognizable patterns emerge from a careful reading of the labor shares. This is confirmed by cluster analysis: outliers excepted, labor shares behave according to geography and economic policy. This will be our starting point.

*1: Geography and history*. Fig. 2 indicates that the most similar patterns in labor shares are to be found in neighboring countries. Reading the groupings by starting with the smallest linkage distance we find the following couples of countries: Spain/Portugal, Belgium/France, Germany/Netherland and Denmark/Norway. Similarly one would expect the labor shares of Korea and Japan, the only two Asian countries in this study, to behave similarly –and Fig. 2 indeed shows that actually have. It is also comforting to find a greater linkage distance between Japan and Korea than between European countries, for there is a greater physical distance and a greater cultural gap. The case of Great-Britain being clustered with the United States, rather than countries from continental Europe, further illustrates that cultural proximity, instead of geography, may be the common factor. The clusters on Fig. 2 do not necessarily denote the impact of only one factor. Note however the presence of outliers, like the odd country couples Austria/Mexico, Canada/Luxembourg or Finland/Italy which are not countries brought together by either geography or cultural proximity. To understand those groupings it is necessary to “go up one level” and have a look at the bigger picture.

2: *Economic policy*. The second and “big picture” conclusion is that of the importance of economic policies. The classification tree on Fig. 2 clearly makes the distinction between essentially two big clusters: the early European Union members (now forming the Eurozone) and the NAFTA members (or Anglo-Saxon, when Great Britain is included). Other countries are distinctively set aside of those two big categories (outliers form two categories which could be labeled “Asia/Maritime countries” and “Non-Euro-using Northern Europe”).

It is important to see that those clusters are more than geographic. Great Britain, Sweden, Norway, Denmark and Iceland are European countries but they don’t appear in the Eurozone cluster simply because they are not members of the Eurozone. Their immediate neighbor Finland, however, *is* a member of the Eurozone and correctly appears in the corresponding cluster. Conversely the Eurozone group misses Austria and Greece, who are now members of the Eurozone; this omission may only be explained by those countries joining later either the European Union (1995 for Austria) or the Eurozone (2001 for Greece). Luxembourg seems to be a true exception, being a founding member of the European Union and Eurozone, yet it does not appear with the correct group –but this is a small country with specific features.

Cluster analysis on Fig. 2 distinguishes between the Eurozone and the rest of the world (and other outliers) but what is so different between the labor shares in those areas? Looking at the labor shares on Fig. 1 we seem to observe some convergence between countries which we don’t observe elsewhere. We investigated this proposition further by computing the average differences to some reference labor share, taken alternatively as the mean EU-12 and American labor shares. Those differences are plotted on Fig. 3 (top and middle panels).

The middle panel shows no specific pattern of convergence between the American labor share and the labor shares in Mexico, Canada, Japan and Korea –except for the special case of Korea<sup>10</sup>. By comparison the top panel shows a dramatic convergence in Western and Eastern European countries (towards the EU-12 average labor share). This graph can be seen as a metric of European convergence, as seen through the specific convergence of labor shares. The graph shows three phases in Western Europe integration: divergence in the 70s, fast convergence in the late 80s and standstill since the mid-1990s. At that time labor share convergence had been achieved in Western Europe but remained strong in Eastern European

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<sup>10</sup> Interestingly enough, Korea is reported as having a labor share of almost 100% of income during the 60s and 70s, only to decline thereafter to lower levels (around 80%). Starting from those levels, Korea will be found to converge with nearly any other country.

countries (CZE, HUN, POL, SVK) and Switzerland<sup>11</sup>. How can we explain such a clear-cut convergence pattern? We propose an economic as well as a political reason to this pattern.

The economic reason is that of asymmetric shocks put forth by Mundell (1961): the 70s and early 80s saw a succession of shocks (flexible exchange rates, oil shocks, disinflation, currency adjustments...) to which each country had to adjust. Given country specifics, each country's labor market reacted differently –and this shows up as labor share divergence. For instance we find that labor shares were going up until the early 80s in almost all countries but they did not increase by the same amount (the labor shares in Great Britain and Germany were more stable than in France or Luxembourg)<sup>12</sup>. Convergence took place when those shocks stopped in the latter half of the 80s –and it was helped further by a positive oil counter shock. But asymmetric shocks don't seem to be the whole story, for most of the convergence took place when a specific policy was put in place –and stopped afterwards.

The end of the 70s era reignited the need for European convergence on the policy and political sides. The major political gesture of the decade in Europe was the Single European Act (SEA). Signed in 1986 the Act implements reforms in order to “*add new momentum to the process of the European construction so as to complete the internal market [over a period expiring on 31 December 1992]*”<sup>13</sup> –a clear aim at fostering convergence among European countries. Although the SEA entered into force on July 1<sup>st</sup> 1987, the Act had actually been prepared since 1983, resting on several smaller acts and white papers (European Commission, opt. cit.).

The SEA achieved a “new momentum” through institutional and economic policy changes as well. In particular economic convergence should be restored by voluntary fiscal and monetary policies. Monetary policy was reinforced in the SEA as a tool for convergence –although it was already part of existing powers. One major example for convergence was set by Germany, with individual Central Banks anchoring their currencies and emulating the policies decided at the Bundesbank. France for instance abandoned its previous (Keynesian?) policy and turned to *Rigueur* in order to come closer to the German model –with the ambition for the French-German couple to be the locomotive of Europe.

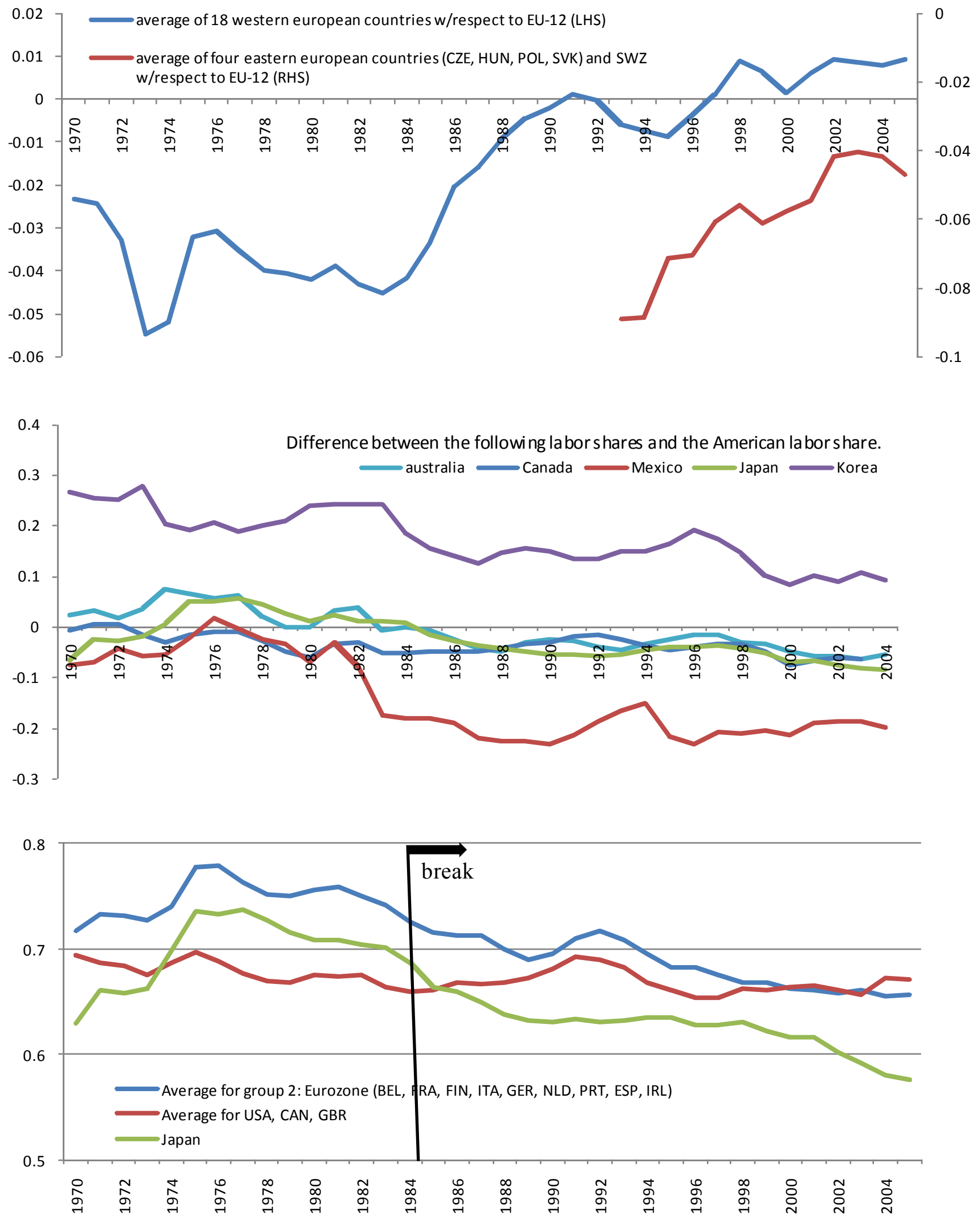
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<sup>11</sup> It is also interesting to note that convergence appears growth sensitive: it is much easier to converge in good economic times. Harder economic times and recessions (taken as 1973, 1983, 1993, 2000) make countries diverge.

<sup>12</sup> Eventually, Western Europe's labor shares decreased more than they had increased in the 70s (Stockhammer 2004). From peak to trough, the decrease represents 10 points of GDP.

<sup>13</sup> Article 8A of the SEA which further defines the internal market as “*an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured in accordance with the provisions of this Treaty*” (see the European Commission website, available at <http://europa.eu/scadplus/leg/en/s90001.htm>)

**Fig. 3 – Convergence and divergence of labor shares**



**Note:** the averages are *not* population weighted.

Fiscal policies may have played an even greater role for convergence, but more on the spending side than on the taxation side –harmonization of tax codes is still a hotly debated topic nowadays, and to a large extent it is still a work in progress. The SEA promotes the establishment of “*a Community policy of economic and social cohesion to counterbalance the effects of the completion of the internal market on the less developed Member States and to reduce development discrepancies between the regions*” (European Commission, opt. cit.). To this end, the SEA made special provisions for the European Agriculture Guidance and Guarantee Fund (EAGGF) and the European Regional Development Fund (ERDF), in addition to the European Social Fund (ESF, set up in 1958). Those “Structural Funds” now represent over a third of the Community budget, second to agricultural policy. Thus, the European budget, however relatively small it is (around 1% of the member’s GNI), is in fact mostly devoted to supporting convergence.

It is hard to appraise the convergence-effect of each of those policies. For sure those policies promoted convergence more than they promoted divergence and this matches the facts we observe in labor shares. The effect of all those policies has been convergence up to the point where, by the early 90s, is a much greater convergence of the labor shares. This convergence is observed in Europe, where Structural Funds and monetary policy coordination was put in place, but is not observed in other economic areas, like among the NAFTA members, which lack Structural Funds (the Canadian and Mexican labor shares are not converging towards the American level).

The European converge, however, has been more than that: between 1980 and 2000 the average labor share has fallen by 10 points in the Eurozone, according to the OECD-SULCI dataset. This matches the findings of Ederer and Stockhammer (2004) and Ellis and Smith (2007). This is one of the largest drops and a clear sign of redistribution from labor to capital. Again this strong redistribution has taken place in an environment of globally falling labor shares and the drop occurred following a period of inflated labor shares, to begin with. Yet there remains that the magnitude of the drop is quite substantial, especially when the labor shares have remained constant in countries like the United States, Great Britain and to a lesser extent Canada. A *permanent* drop of 10% is also certainly quite substantial for one orchestrated by policy. Such voluntary wage depression in the Eurozone may be explained by the willingness to boost European competitiveness in order to capture foreign markets<sup>14</sup>.

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<sup>14</sup> Among other places this is stated in Article 130F of the European Community Treaty (1957) establishes the objective “*to strengthen the [...] basis of European industry and to encourage it to become more competitive at [the] international level*”.

3: *Economics, Trade and international prices.* The possibility of the European policy of wage deflation to foster external competitiveness stresses the importance of trade in the discourse. The trouble is that this may result in a beggar-thy-neighbor policy, to the extent that most of European trade is intra-European Community<sup>15</sup>. This possibility is a political rather than an economic explanation of the role of trade. Could there be an economic explanation to income distribution, à la Stolper and Samuelson (1941)? Although it may be relevant in some cases, the global relevance of Stolper-Samuelson seems unlikely. The reason is that the Heckscher-Ohlin model, on which the Stolper-Samuelson theorem rests, assumes perfect competition and comparative advantages. Yet European countries are reasonably similar, perhaps more similar than the countries of any other economic area. In this case perfect competition and comparative advantages are unlikely to explain much of the trade pattern—we should expect economies of scale to prevail (Krugman 1979). According to Stolper and Samuelson, one would observe falling labor shares in Europe only in the case of competition with low-cost, labor-abundant countries but those represent a small share of European trade—and an even smaller share in the 80s when most of downwards convergence took place. Similarly, the case of the US/Mexico trade would imply a falling labor share in the United States; yet the country features the most constant labor share of the sample. Overall the Stolper-Samuelson theorem may be relevant in some cases but it appears unlikely to explain the major trend, that is, a falling labor share in continental Europe.

We may find economic theory relevance in the observation that, in the short to medium run, most of the labor shares on Fig. 2 appear contra cyclical (albeit to varying degrees). We typically observe labor shares going down in good economic times and up during recessions. This is a well-known fact; see Giovannoni (2006) for a more detailed analysis in the case of the American labor share. The immediate explanation is that productivity is more responsive to growth than the real wage is, with the effect that in downturns the real wage is sticky while productivity collapses. Theoretically speaking, the contra-cyclical nature of the labor share may be explained with reference to Kaldor (1956, 1957) or Goodwin (1967) who both argued, in different models, that the profit share fluctuates along with the investment rate and unemployment, respectively, that is, the profit share varies with the business cycle (see exposition above). However Kaldor's and Goodwin's credit should be limited to the extent that a central feature of their model is that of the constancy of the labor share, which is not the case of most of the countries under study (see above). On the positive side Kaldor's and Goodwin's predictions seem to go beyond the pure short run

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<sup>15</sup> An example of a beggar-thy-neighbor policy would be French exporters, say, lowering production costs to capture foreign markets but, since their markets are mostly European, this would hurt the German Economy, say. To restore their competitiveness, the likely response would be for the German exporters to propose larger cuts. Eventually this cumulates into a persistent downward pressure on labor costs (labor share).

dimension of the business cycle; the persistence of bad economic performance, such as during the 70s in most countries, meant most countries experienced *persistently* higher labor shares –for about a decade (Ederer and Stockhammer 2007). The two noticeable exceptions are Great Britain and the United States who do feature a contra cyclical labor share but do not feature the hump that other countries exhibit in the 70s. Thus, the labor share feature remarkable stability in Great Britain, and even more so in the United States.

*4: Politics and Institutions.* Finally a word should be said on some very specific cases when we observe abrupt changes in the labor shares. Such is the case of Germany and Denmark who see their labor share fall immediately after the German reunification in 1989 (whereas other countries experience more or less stable labor shares at that time). The economics of this is straightforward but the point is that economic events do matter. Could such a political effect be at work in other countries, and does it match our observation of falling labor shares in Europe following the SEA, among other convergence policies? This is indeed possible, or at least the opposite proposition, that the European construction pace does not match falls in the labor share is a rather difficult proposition to hold. The only country with an increasing labor share after participating in the European Union and the Eurozone is Greece. Finland's labor share was constant until its issued (1991) and effective (1995) accession to the European Union –and it fell afterwards until entry in the Eurozone (1999). The same pattern seems at work for Hungary and Sweden – and we already have provided evidence for other countries. Great Britain has always kept a careful distance with anything related to the European construction and its labor share remained reasonably constant.

But could the same factors, mostly political, explain the pattern of the twin brother, the personal income distribution (inequality)?

### **III. Inequality and poverty: measurements and patterns**

The interest in the functional income distribution predates that in the personal distribution of income. For most of the 20<sup>th</sup> century indeed, the word “distribution” meant “wages/profits”, i.e. functional income distribution. Only in the late 20<sup>th</sup> century, maybe starting with Kuznets (1955), did the expression “income distribution” begin to be understood as “inequality” (see Atkinson 1997).

The literature on personal income distribution –or inequality– is even larger than that on the functional distribution of income. Attempting to summarize it faithfully here is vain and we will refer the reader to

the recent contributions of Acemoglu (2002), Atkinson (2003), Benabou (1996, 2004), Card and DiNardo (2002), Galbraith (1998, 2007), Gordon and Drew-Baker (2008), Krugman (2007), Milanovic (2007), Levy and Temin (2007) as well as Silber (1999), to cite a few.

The shift of attention from the functional to the personal distribution of income, however, is far from unimportant. The tools and method have changed from a macro to a micro perspective –that of the microdetermination of personal and individual wages (Galbraith 1998). Following microeconomic theory, skills, education, technology, trade, age, sex, marital status, race, youth environment, etc... are thought to affect wage levels. Along this interpretation, any observed income inequality must come from an unequal distribution of those factors. The trouble is that there is nothing to do to reduce inequality, if that is the goal, when the origins of inequality are personal characteristics –no place for politics and no place for policies. The two major exceptions are education and technology (or any externality), where the State can promote policies to boost education levels or reduce technological skill differences.

Aside personal characteristics, a select and growing set of authors would insist instead on institutions and politics (Card, Lemieux and Riddell 2003, Galbraith 1998, Krugman 2007, Levy and Temin 2007). The main line of reasoning follows the observation that the changes in inequality correspond to both institutional changes and regime shifts –in a word, institutions and politics matter. Indeed such were our preferred explanations of the movements of the *functional* income distribution. Could it be that the same policy/institutions factor explains the bulk of the inequality pattern?

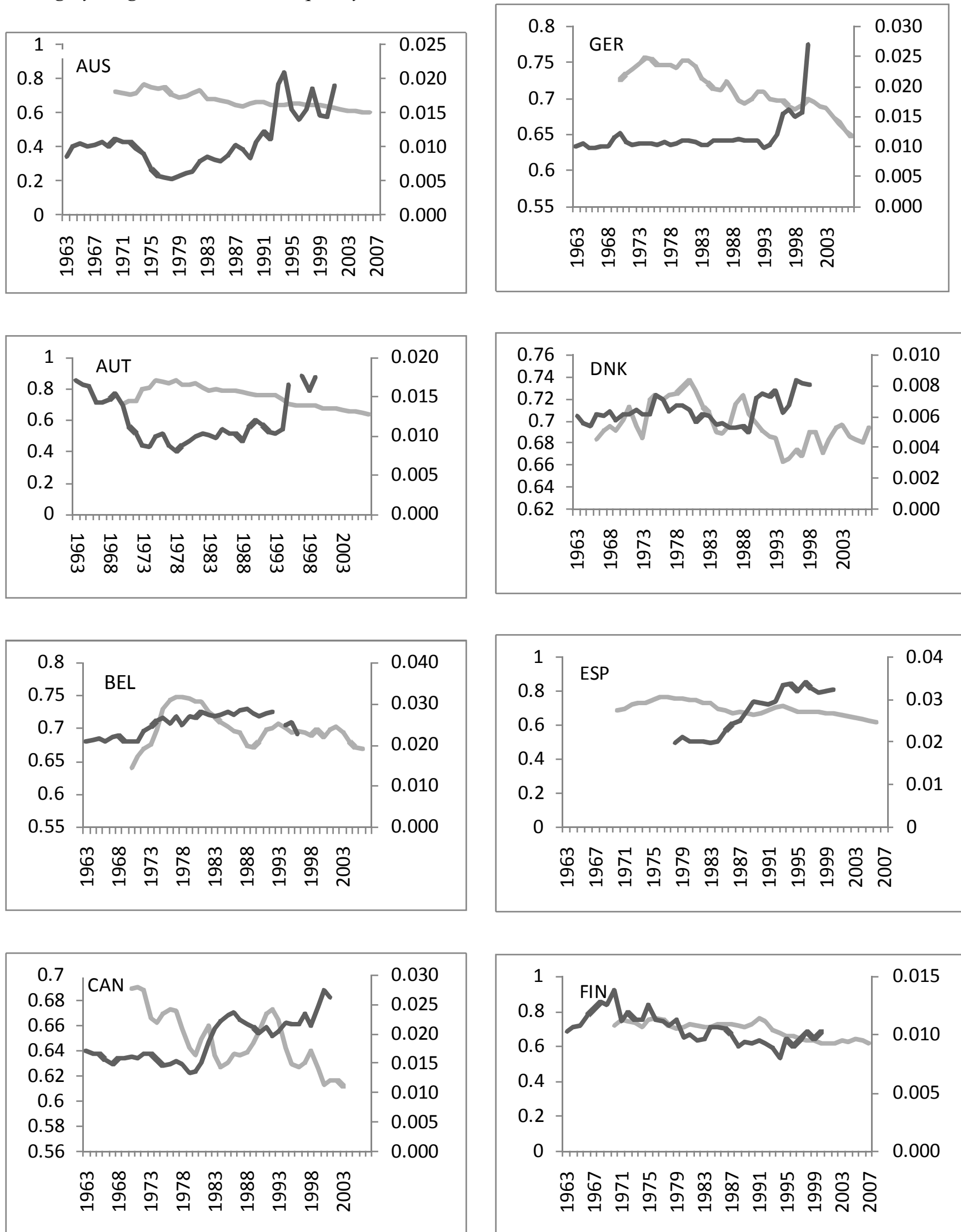
To answer this question we rely on an empirical analysis of the UTIP-UNIDO inequality dataset computed by Kum (2008). This dataset has the advantage of providing long and dense time series on inequality, using the Theil measure, with an international coverage much greater than the World Bank Gini coefficients usually employed in the literature. The dataset used here covers 28 manufacturing industries for 26 countries. The coverage details are presented in Table 2 *supra*, Fig. 4 provides a country-by country comparison of the labor share of income and inequality and Table 3 summarizes the results.

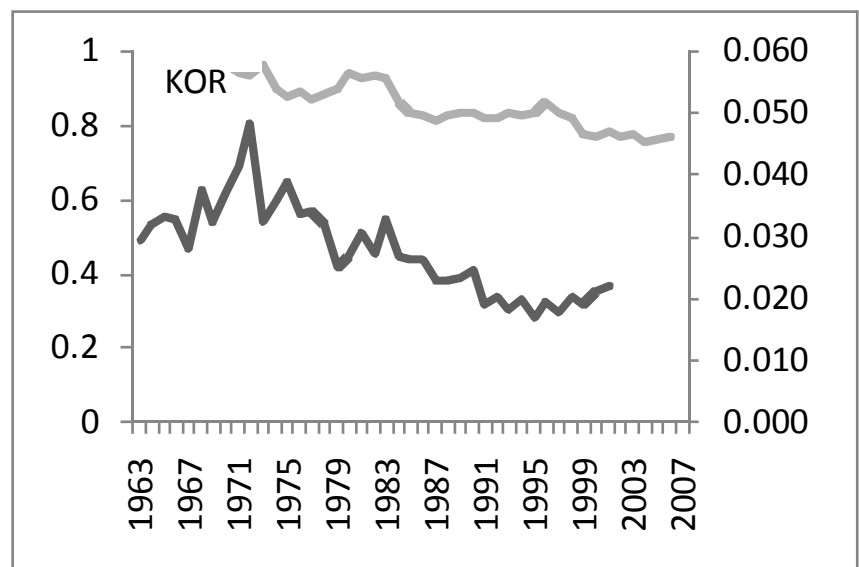
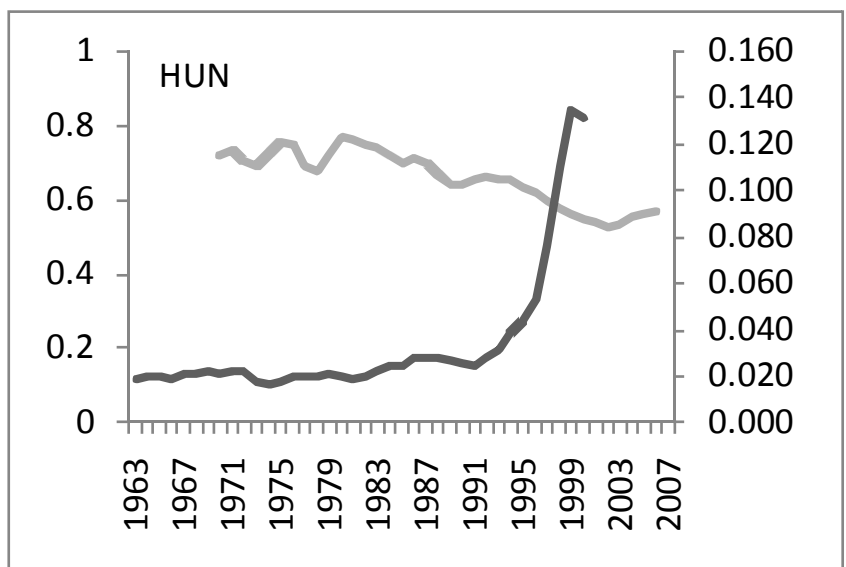
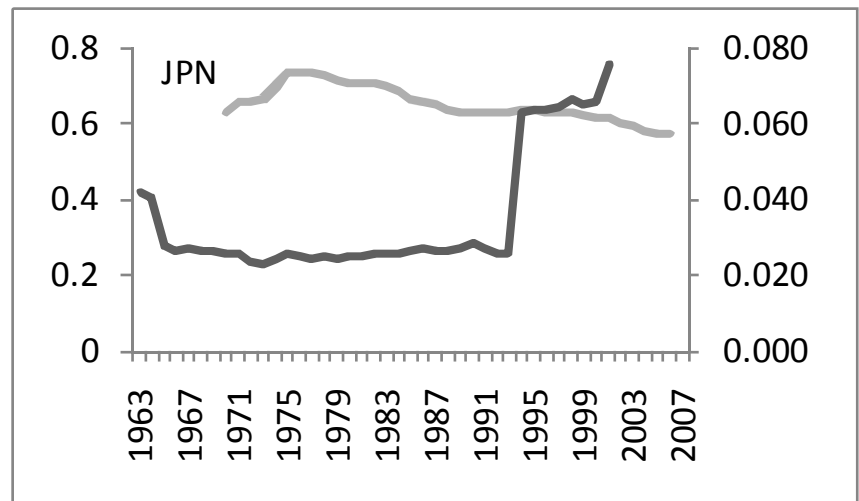
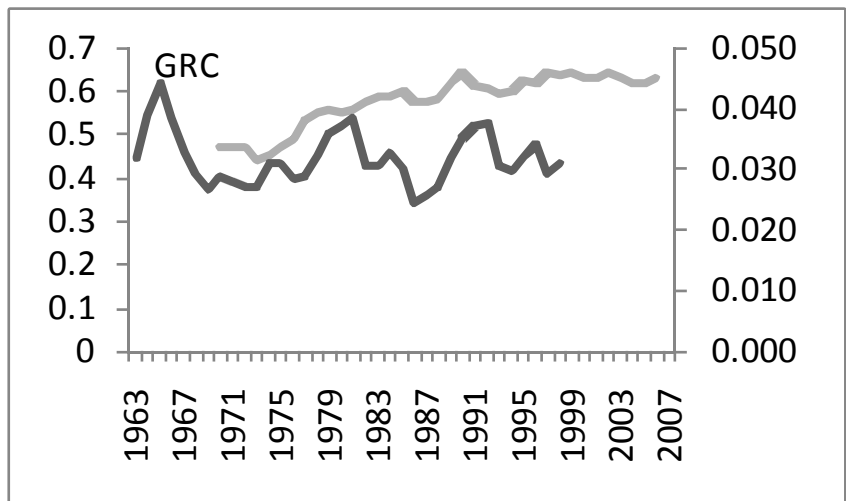
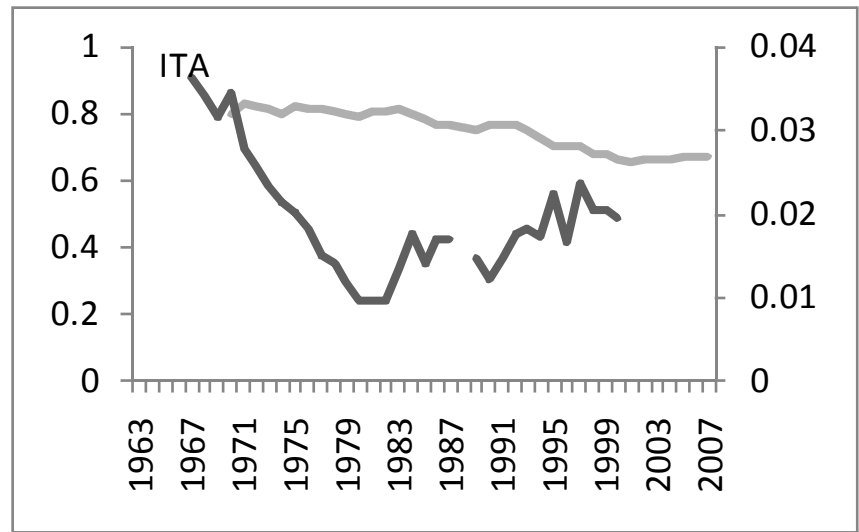
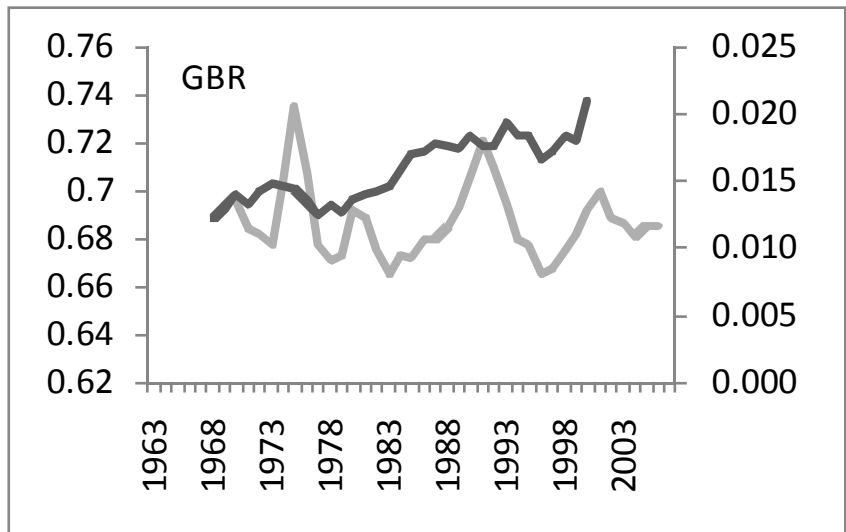
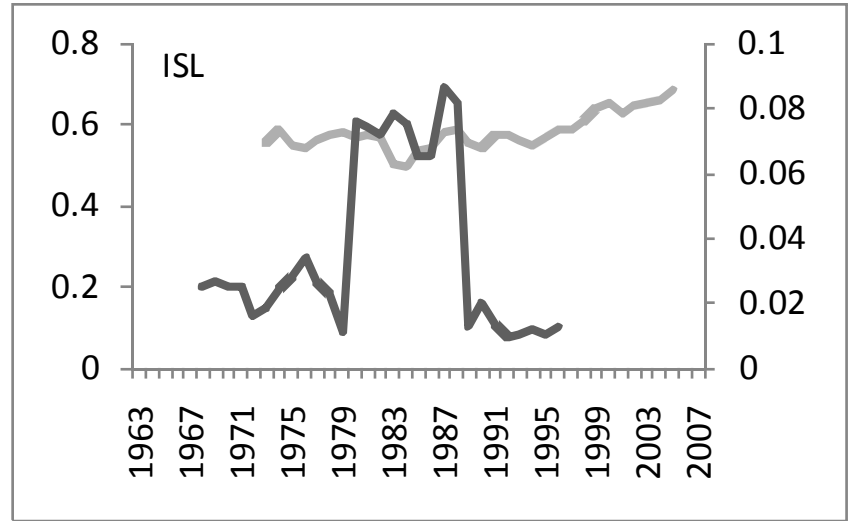
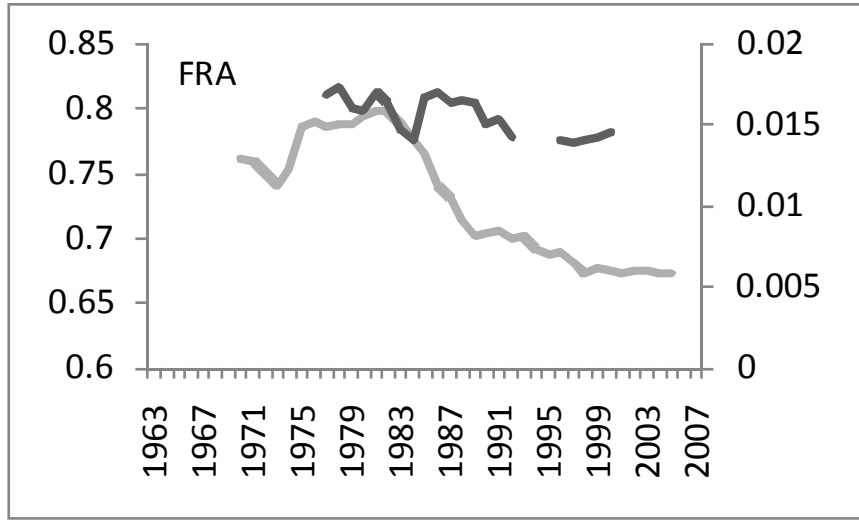


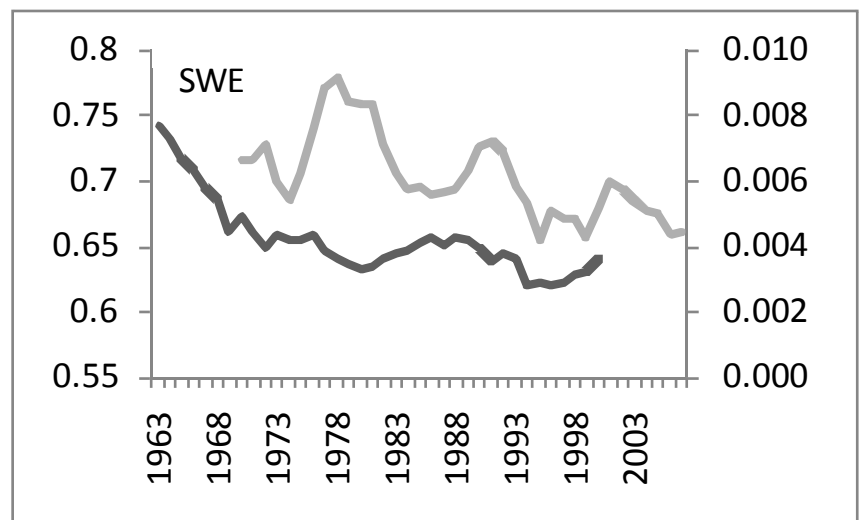
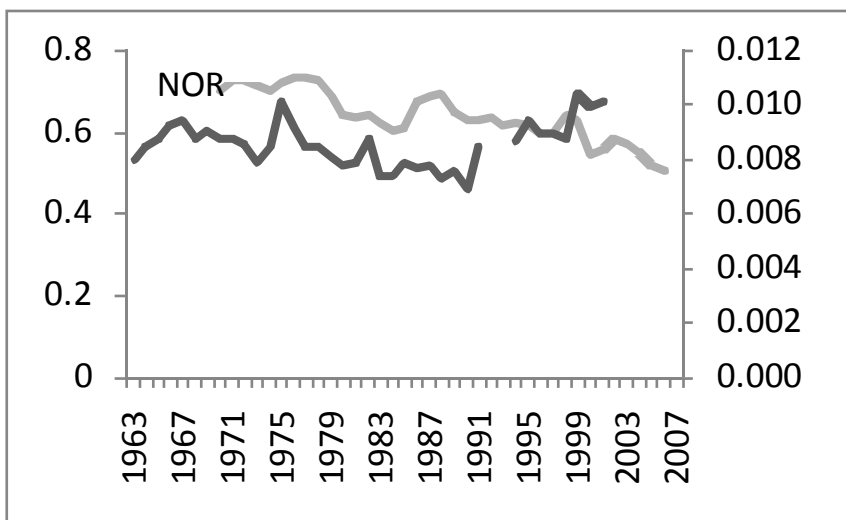
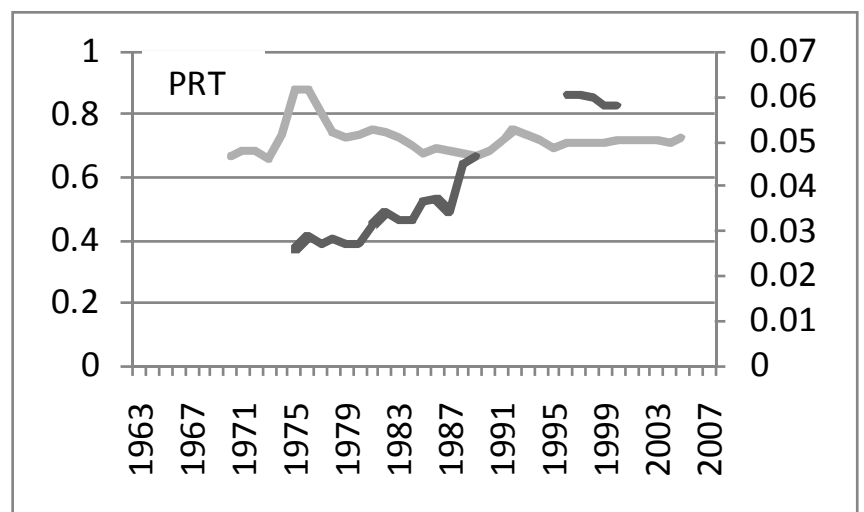
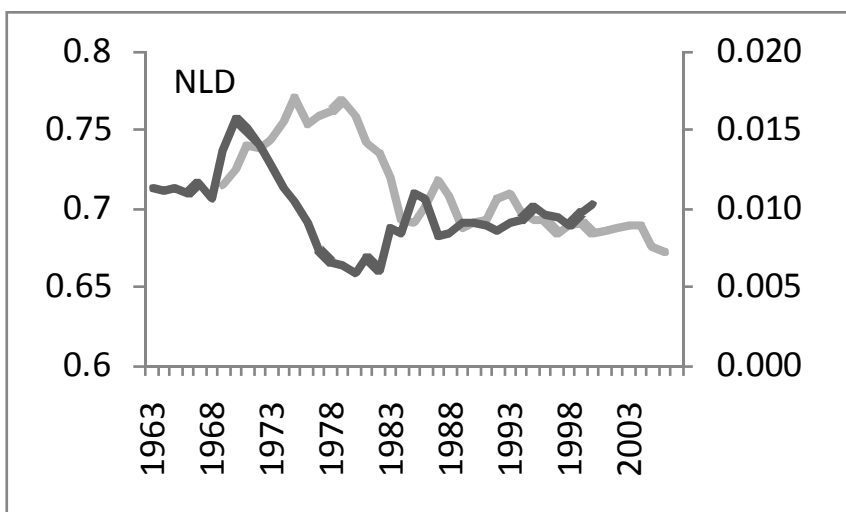
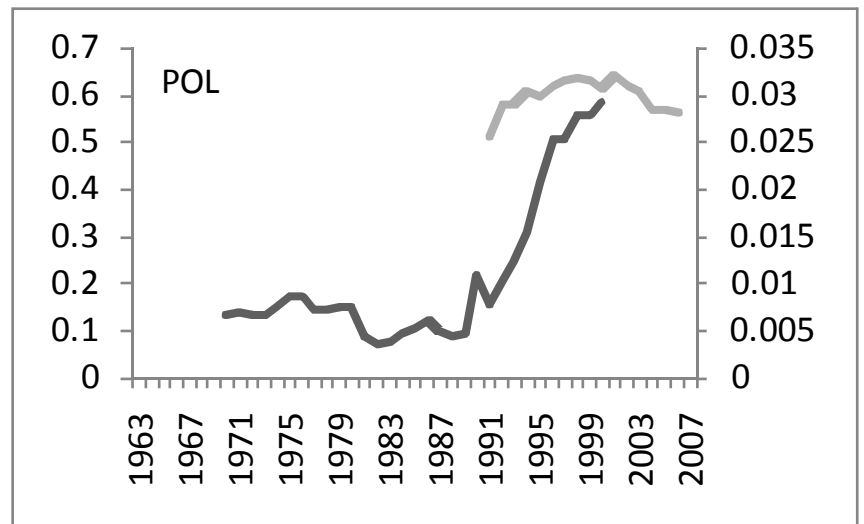
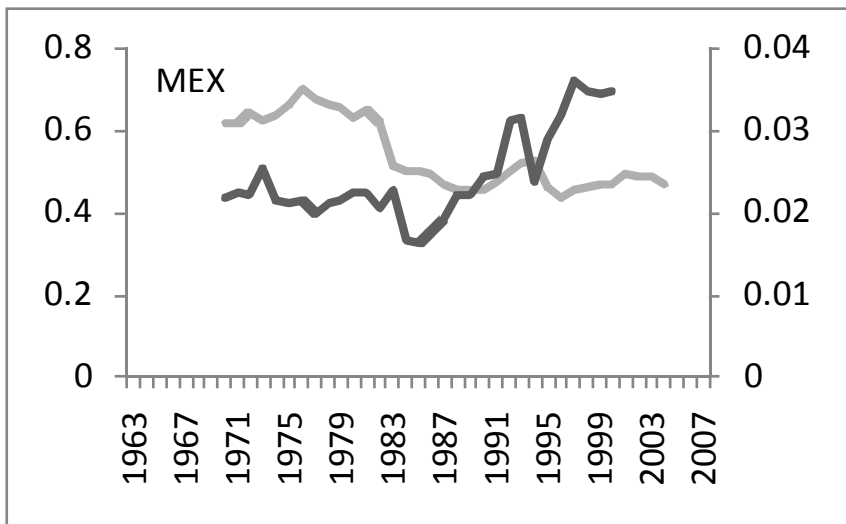
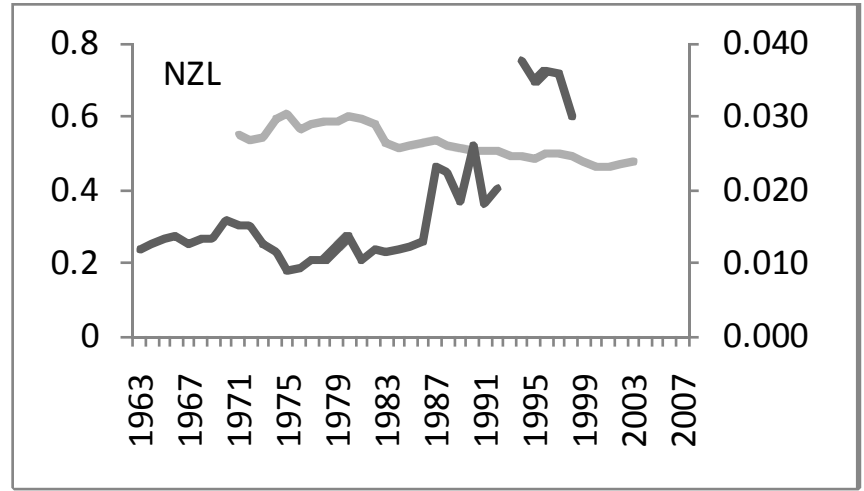
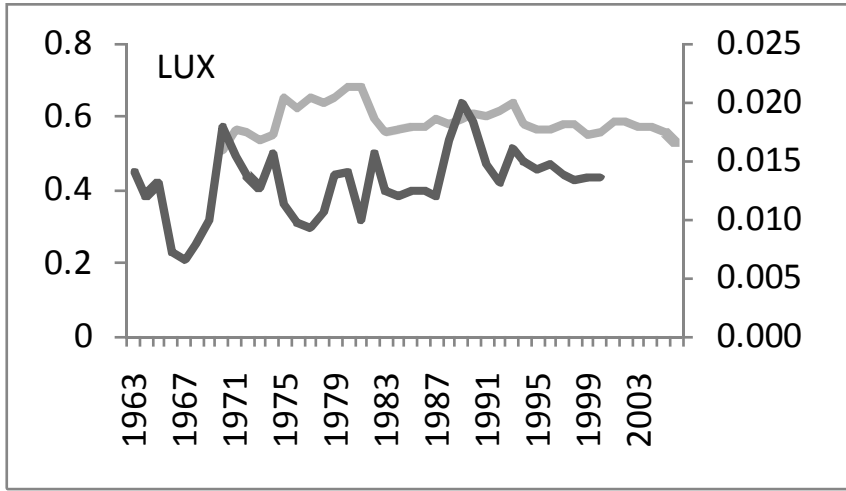
**Fig. 4 – Labor share and manufacturing pay inequality**

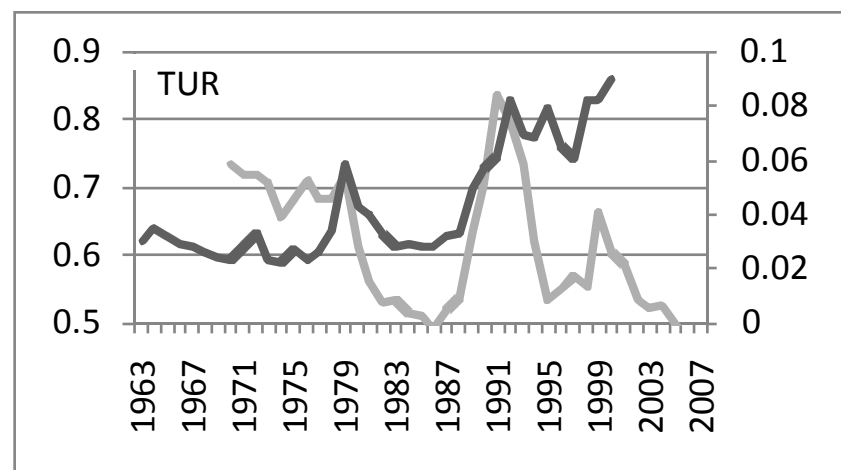
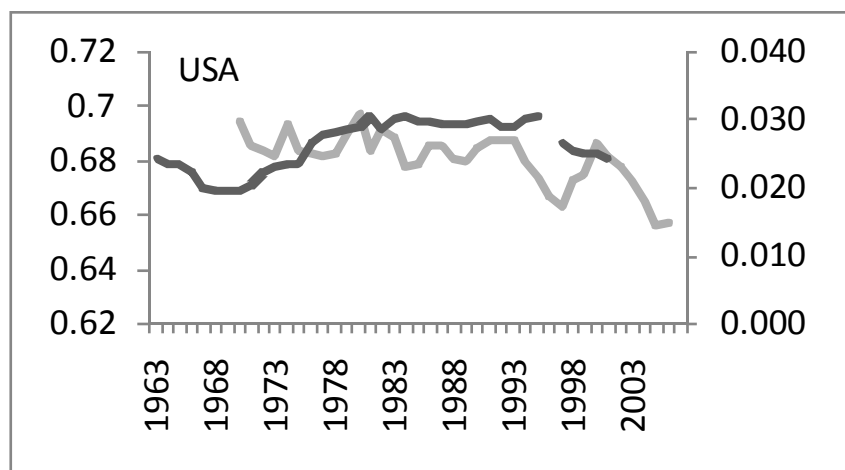
*Light grey / left scale: labor share*

*Dark grey / right scale: Theil inequality index.*









Sources: OECD-SULCI database for labor shares and Kum (2008) for the Theil inequality measure.

**Table 3 – Summary of the relationship between the functional and personal distribution of income**

Countries for which the relationship between wage share and inequality is...		
negative	inexistent or uncertain	positive
*AUS, since 1980	BEL ? <sup>j</sup>	KOR, since 1970
*AUT, since 1970 <sup>a</sup>	FRA ? <sup>j</sup>	(POL, since 1990 ?) <sup>h</sup>
*CAN, since 1981	GBR	TUR, in the 1980s only <sup>i</sup>
*DNK, since 1989, German reunification	GRC	
*ESP, since 1980, post EU accession	ISL <sup>g</sup>	
*FIN, since 1991,	LUX	
*GER, since 1993, post reunification	*USA, since 1980? <sup>e</sup>	
*HUN, since 1991, end of communism, liberalization <sup>b</sup>		
*ITA, since 1982		
*JPN, since 1990? <sup>c</sup>		
*MEX, since 1981, debt crisis and liberal reforms		
*NLD, since 1981		
*NLZ, since 1982		
*NOR, since 1990		
*PRT, in the 1980s only		
*SWE, in the 1970s and 1980s only <sup>d</sup>		
*USA, since 1980? <sup>e</sup>		

**Notes:** \*: countries with a falling wage share and rising inequality during the period indicated, <sup>a</sup>: fast increase of inequality upon EU accession, <sup>b</sup>: fast increase of inequality after 1994, coinciding with the application for EU membership, <sup>c</sup>: inequality data jump in 1994 (data problem?), <sup>d</sup>: ends with the EU candidacy and acceptance (1991, 1994), <sup>e</sup>: small downward trend in the wage share and rising inequality, especially if accounting for financial gains, <sup>f</sup>: the French and Belgium economies are particularly affected by unemployment. If unemployed persons and their income were to be accounted for, inequality would rise and place France and Belgium among the countries with a strong negative relationship, <sup>g</sup>: inequality data breaks in 1980 and 1989 make comparisons hazardous, <sup>h</sup>: data insufficient for definitive conclusion, <sup>i</sup>: positive relationship seems to break down with the financial crisis and free trade agreements of 1993-94.

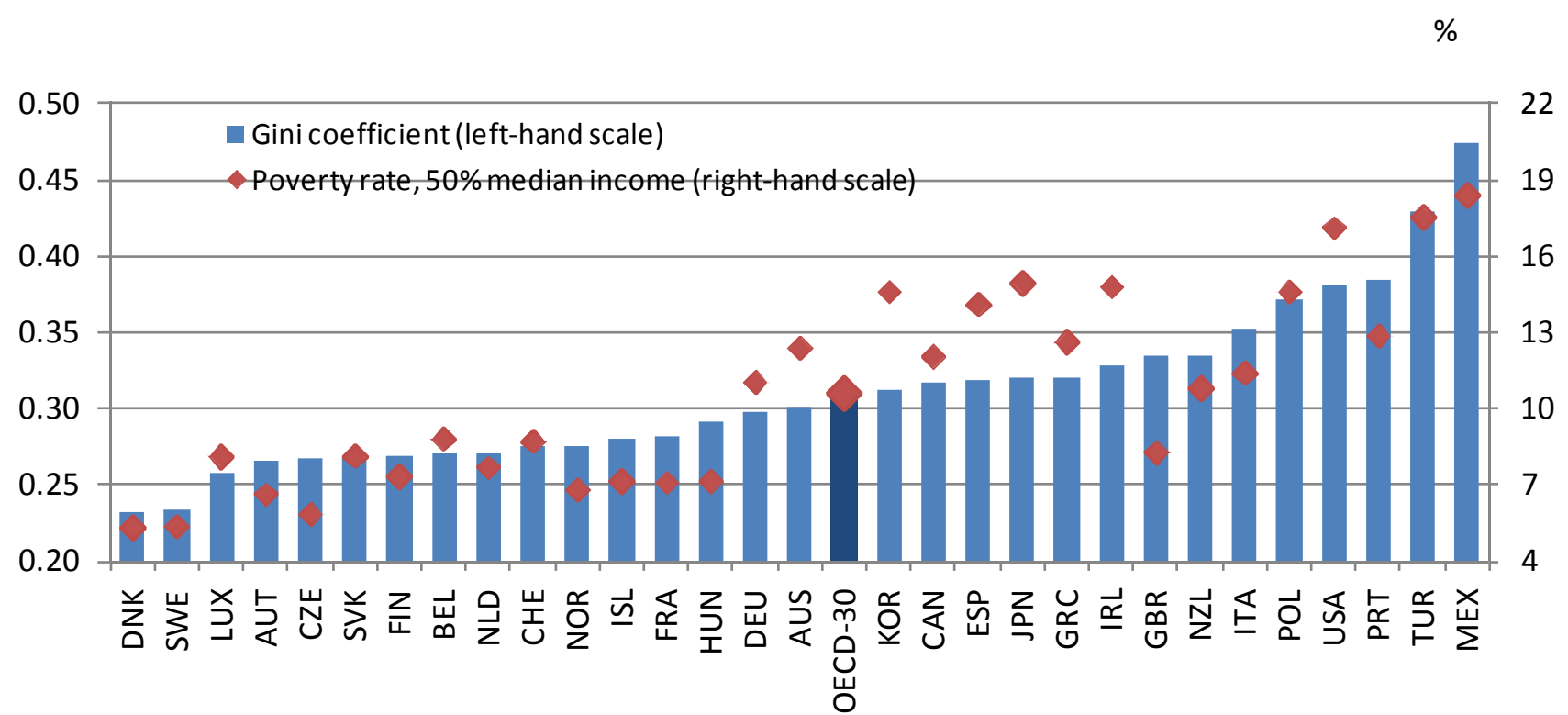
Fig. 4 present consistent evidence of a rising trend in inequality. This is a well-known result; for instance it matches the conclusions of a recent and major OECD (2008) report on income distribution and poverty. More importantly, the upwards trend in inequality seems to have started, or accelerated in the 1980s –at the same time we observed declining labor shares. How widespread is the case of both a falling labor share and rising inequality? The summary of the results in Table 3 shows that this pattern is very recurrent. Among the 26 countries under study (with sufficient data availability), 17 exhibit a clear inverse relationship between the labor share and inequality (possibly 19 if Belgium’s and France’s inequality measures are revised upwards to account for high unemployment).

The cases of an uncertain or inexistent relationship are quite interesting. France, Belgium and perhaps the United States are not clear-cut cases indicating the absence of a relationship –to the contrary, if any relationship prevails it is almost certainly that involving a lower labor share and higher inequalities. Great Britain may be another case, but here the labor share is more constant. Finally the only true cases of contradicting the overall pattern are those of Iceland, Luxembourg, Korea, Turkey and Poland. The “outliers to the general rule” appear to be very specific countries, either small and/or in transition.

Those outliers should not hide the broad picture. In advanced nations the pattern is strikingly the same: the wage share fell and inequality rose, starting in the 80s. Thus in those 17 (or 19) countries, workers have been squeezed twice. First there is less income that has gone to workers and second the amount of available income was more unequally distributed. Some countries have even seen a triple squeeze, related above-average unemployment during that period. This interpretation suggests in fact that another similar pattern may have taken place. Given the triple squeeze, shouldn’t we expect inequality to have risen along inequality? The reason of an increase in poverty is that the heightened unemployment situation would have forced people out of the work force, or alternatively forced workers to hold very low-paid jobs, and in any case the triple squeeze would have forced more people into more miserable living conditions. We would also expect that more generous welfare systems and countries with more progressive redistributive policies would be associated with less poverty and possibly less inequality –although in those matters the specifics of the welfare programs do matter a lot.

As is well-known, poverty is a multi-dimensional concept and measurement is especially difficult (see OECD 2008 for an extensive discussion and perhaps the most relevant measurements). Given those difficulties (and space limitations) we will only refer to the findings of the recent OECD (2008) report already mentioned. The report presents a graph on the relationship between inequality and poverty as reproduced in Fig. 5.

**Fig. 5 - Income inequality and poverty in the mid-2000s**



Source: OECD (2008), p. 285.

#### IV. Collecting the threads: the role of structural changes

The present paper attempted at providing an overview of the relationship between the two pendants of income distribution, the functional and the personal. We insisted on the functional distribution theory to the extent that the field has been overlooked for quite some time, to the benefit of inquiries into inequality. We studied the major theories of functional shares and found that, although some purely economic phenomena may be at work, the bulk of actual factor share behavior is better described as stemming from changes in institutions and economic policies, implemented globally starting in the 1980s.

This result is based on a careful analysis of new empirical evidence, which is the major contribution of the present paper. We have relied on high-quality datasets by the UTIP-UNIDO and the OECD-SULCI (and various secondary sources) and this data clearly shows a strong link between the functional and personal distributions of income. The two measures are indeed twins, stemming from the same idea of “distributing” income, and they react to the same overriding institutional/policy factors. The simultaneous shift towards a lower wage share and higher inequality since the early 80s in most countries coincides with the shift of economic policy towards more a more liberal agenda (in the European sense).

Not every country reacted similarly to those new economic policies. Great Britain and the United States, under the influence of the Reagan-Thatcher policies, saw large increases in inequality while their labor shares remained reasonably constant. Continental Europe on the other hand, under the influence of the European construction and the imperative of convergence, saw a large downwards movement in the labor share but a limited rise of inequality, thanks to the Nation's more generous welfare systems. Yet the specific patterns should not be mistaken for the big picture: in 17 (or possibly 19 if France and Belgium are included) of the 26 countries under study, inequality has risen and the labor share of income has fallen at the same time. There are exceptions to this rule, but those are either small or less developed countries.

Our inquiry also led us to uncover another strikingly similar pattern: that of poverty. In this domain however, limitations appear because of the quality and coverage of the data, and the intrinsic multi-dimensional nature of poverty. More empirical research should be done in this area, especially to devise time series of poverty. Despite this lack, poverty appears associated to inequality (and thus to lower factor shares). This is because inequality is a measure of the dispersion of income and therefore covers, to some extent, what happens at the very bottom of the distribution (as well as at the very top). Further, we find poverty to be associated with higher inequality –with the amendment that larger redistributive systems and more generous welfare states report lower poverty rates.

The evidence presented in those pages suggests that “it's all the same”: rise in the profit share, rise in inequality of incomes and –seemingly– rise in poverty. Our conclusion, far from neglecting economic factors, rather stresses the role of economic policies. Policies targeting liberalizations, deregulation and in general the slow erosion of the welfare state, are the major factors explaining those trends –and the empirical evidence confirms this presumption.

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