

Alvarez, Pablo Beramendi

Working Paper

The Politics of Income Inequality in the OECD: The Role of Second Order Effects

LIS Working Paper Series, No. 284

Provided in Cooperation with:

Luxembourg Income Study (LIS)

Suggested Citation: Alvarez, Pablo Beramendi (2001) : The Politics of Income Inequality in the OECD: The Role of Second Order Effects, LIS Working Paper Series, No. 284, Luxembourg Income Study (LIS), Luxembourg

This Version is available at:

<https://hdl.handle.net/10419/160956>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Luxembourg Income Study Working Paper No. 284

**THE POLITICS OF INCOME INEQUALITY IN THE OECD:
THE ROLE OF SECOND ORDER EFFECTS**

Pablo Beramendi Alvarez

September 2001

THE POLITICS OF INCOME INEQUALITY IN THE OECD: THE ROLE OF SECOND ORDER EFFECTS¹.

Pablo Beramendi Alvarez, Nuffield College, Oxford.

I.- The Evolution of Income Inequality: trends and questions.

Over the last decade two rival conventions in relation to the linkage between politics and inequality have emerged. The first one, recently coined by Atkinson (1999) as the “transatlantic consensus hypothesis”, proclaims an inevitable rise in income inequality. Such an upsurge would be linked to major economic structural transformations which, on top of their direct effects, would constrain more and more the capacity of governments to reshape the distribution of income. According to this view, from an era in which politics was able to mould market’s functioning and externalities, the time for the exactly reversed image would have come: markets would be crowding politics out as a determinant of social outcomes.

Increasing trade openness and skill biased technological change are regarded as the engines driving this process of convergence towards higher levels of income inequality. As a result of them countries experience either a sharp increase in earnings/market income inequality or an intense concentration of unemployment in particular social groups, mainly defined by industry (manufacturing) and skills. The roots of this process of convergence into higher levels of inequality are not that clear, since there exist several competing explanations of its underlying forces². However, no matter how wide the disagreement concerning the causes is, there is a basic coincidence in what they predict: an inevitable upsurge in the levels of market income inequality across the

¹ Paper prepared for delivery at the 97th American Political Science Association Meetings, San Francisco, USA, August 30th- September 2nd. I thank Tony Atkinson, R.Breen, Marta Conde, Gosta Esping-Andersen, D. Jesuit, A. Przeworski and M. Wallerstein for their help/suggestions during earlier stages in the elaboration of this paper.

² Whereas for some authors the key is to be found in the impact of increasing trade relations with developing countries, which would in turn determine the shifting patterns in the evolution of domestic factors (Wood 1994; Freeman 1995), some others stress the domestic nature of the economic transformation, pointing to deindustrialisation. These authors consider deindustrialisation a function of increasing productivity as well as of the levels of maturity of the economy (Rowthorn and Ramaswamy 1997). The econometric evidence is not at all conclusive. Iversen and Cusack (2000) make a strong case in favour of the domestic character of deindustrialisation. On the other hand, another group of scholars have treated these two processes as mutually dependent. For instance, Alderson (1997) aims at reconciling both perspectives and traces a link between “capital flight” and deindustrialisation. He concludes that deindustrialisation in the contemporary period has not been the result of a “natural” process of positive deindustrialisation (derived from the maturity of the economy) alone; “[...] the results also indicate a role for “negative deindustrialisation”, defined by Rowthorn and Wells (1987) as a structural disequilibrium in the economy reflected in an increasingly poor performance of the manufacturing sector, as well as for “trade-related deindustrialisation”. The presence of a manufacturing trade surplus tends to lead the devotion of additional labor to manufacturing. By contrast, where nations have historically specialized in other sectors, or, as with the UK, the US and France, have faltered, international trade has accelerated the move away from manufacturing”(p.17). Similarly Saeger (1997) finds that, controlling for many other relevant variables, “the imports from the South are a statistically significant predictor of the manufacturing share of the employment and real value added” (p.605).

OECD. This prediction is confirmed by the review of the evolution over time of the Gini coefficient for market inequality included in table 1³. Market income inequalities have increased in advanced industrial societies over the last two decades.

In addition globalization⁴ is often attributed an efficiency effect upon the interventions of governments in the economy. As a result of the increasing integration of capital and financial markets, the degrees of freedom enjoyed by politicians to reshape the distribution of income through fiscal and monetary interventions would be shrinking. Hence redistribution would be less feasible, due to the inherently uncompetitive character of the welfare state, and we should expect governments to scale back in their role as containers of the increases of inequality driven by the market (Pfaller 1991). Such an effect would be the mechanism translating the increase in market income inequality into an attendant pattern of growing inequalities of disposable income.

The second and more recent convention, rooted in comparative political economy, has proved these predictions wrong. Within the growing body of literature on *varieties of capitalism* the importance of political and institutional determinants of cross-national differences in wage inequality is a major leitmotiv (Rueda and Pontusson 2000; Wallerstein 1999; Iversen 1999). In addition, Iversen and Cusack (2000) have also shown that de-industrialisation is actually a major underlying factor of the welfare state expansion. Furthermore the political and institutional origins of divergent government strategies, in turn affected by their expected distributive consequences, has also been a major concern of comparative political economists (Wallerstein and Moene 1999; Boix 1998; Mulé 2001).

Rather straightforward empirical analyses help illustrate the divergent national experiences when it comes to the role of taxes and transfers in reshaping the distribution of income (for all, Mitchell 1990; Gottschalk and Smeeding 1997, 2000; Atkinson 2000a). Table 1 presents a comparison of measurements of inequality (Gini coefficient) for market and disposable income for the working age population (18-65). Let M and D represent market and disposable income⁵. These can be defined as follows: (source: LIS summary income variables):

(1) $M = GWS + SEI + CPI + \dots$, where GWS stands for gross wages and salaries (earnings), SEI stands for self-employment income and CPI refers to cash property income.

(2) $D = M + TR - TX$, where TR is the sum of all transfers received by the working age population and TX stands for the sum of social security contributions and the income tax.

[TABLE 1]

³ Also the results reported in Förster (2000: 74-75) confirm these findings. Peracchi offers similar conclusions, i.e., “that most of the stylized facts known to hold for the USA also hold for a large majority of the countries in the LIS database” (1999:14-15).

⁴ For an review of the theoretical and empirical aspects of globalisation and its consequences, see Schulze and Ursprung (1995).

⁵ This notation follows the one in the LIS summary income variables (see www.ceps.lu/lis)

In both cases, the Gini coefficient has been calculated applying the following equivalence scale: $(1 + CH*0.3 + (N-CH-1)*0.4)/1.7$, where N represents the number of people in the household and CH the number of children under 18.

Two conclusions can be drawn from columns 2 and 3 in Table 1. There appears to be a common upward trend across OECD economies in what regards market income inequality. The levels and relative changes over time, however, vary quite dramatically. Moreover, even though market income inequality appears to be growing quite consistently almost everywhere, we do observe quite a different picture when focusing on disposable income inequality. While some countries show an equally ascending pattern (Australia, Italy, UK, USA), some others are quite able to control the non-egalitarian effect of the market, holding their earlier levels (Canada, Germany, France, Finland) or even revert the market trends (Sweden, Denmark). In principle the story is quite simple and empirically consistent. Several structural economic transformations boost up income inequality. Governments, depending upon the scope of the change, partisan politics and diverging institutional settings, play a more or less committed role as containers of these inequalities. Thus politics makes the distribution of disposable income less unequal and generates significant cross-national differences since large welfare states provide more equal distributions of income.

The aim of this paper is to point out that this is only a partial and therefore potentially biased view of the relation between politics and income inequality. This claim can also be substantiated by taking closer a look at table 1, in which we find two unexplained empirical regularities. Let me present them at some length and discuss their implications for the relevant literature on the relation between politics and inequality.

1.- ***Low wage Inequality coexists with large Welfare States.*** According to the Romer (1975: 163-175), Roberts (1977:329-240) and Meltzer & Richard model (1981: 914-927), a mean preserving increase in inequality reduces the income of the median voter, widens the gap between the income of the median voter and the mean income in the society and therefore leads to higher support for taxation and income redistribution. Thus if anything, we should observe higher levels of welfare effort and redistribution in societies with higher levels of pre-fiscal inequality. The contrast between columns 1 and 5 in table 1 offers some puzzling results for this prediction. Why do wage-egalitarian societies present the highest levels of welfare effort and redistribution? Put differently, why do large welfare states coexist with relatively equal distributions of earnings? I shall refer to this puzzle as the puzzle of egalitarianism (Iversen and Soskice 2000).

2.- In addition to this puzzle, it is worth noting a second empirical process, namely ***the relative cross-national convergence towards higher levels of market income inequality.*** In fact this process renders the puzzle of egalitarianism a byproduct of the indicator of pre-fiscal income inequality selected. If we were to pay attention only to indicators 2 and 5 the Meltzer et al. (1981) prediction would be consistent with a few national experiences (France, Germany, Italy, Sweden, Denmark, Italy, Finland, particularly during the 80s and 90s) as depicted in table 1. Several questions arise. If earnings are known to be a major component of market income, why do OECD countries look so

much closer when looking at the distribution of market income in the 80s and 90s? Are the other components of market income pushing towards convergence so much as to overcome the existing cross-national differences in earnings inequality? Is there anything else to be considered?

The remainder of this paper puts forward an argument to answer these questions based on the analysis of second order effects of taxes and transfers. The argument can be outlined as follows. Distributive and redistributive processes do not follow a simple sequential pattern. Their impact is multidimensional. This feature has far reaching consequences for the study of the politics of redistribution and inequality. However the systematic analysis of these consequences is not possible under the usual assumptions underpinning the studies of the impact of redistributive policies (West Pedersen 1994). In order to perform it we have to move beyond first order incidence and estimate the magnitude and direction of second order effects of taxes and transfers. In doing so we hypothesize that both wage inequality and market income inequality are to a large extent a function of the welfare state.

In the study of the specific nature of this relation lies the strategy to provide an answer to the questions posed by the coexistence of puzzle of egalitarianism and the increasing convergence into higher levels of market income inequality. In order to do so we first explain the notion of incidence and lay out the theoretical underpinnings of the argument. Thereafter we carry out an empirical analysis on the basis of data for 15 OECD countries between 1980 and 1995.

II.- The Incidence of Redistribution, Wage Inequality and Market Income Inequality.

This section is structured as follows. After introducing the notion of incidence and its several orders I turn to discuss what kind of effects are to be expected and why. This discussion is carried out in two steps. First I develop a set of expectations assuming that second order effects are common across OECD nations. Secondly we turn to discuss the reasons why these effects are considered contingent upon specific institutional diversities among advanced industrial societies.

The Notion of Incidence

Generally speaking, by incidence I refer to the study of the distributional effects of public policies (in our case mainly taxes and transfers) on a number of different realms, be them factors of production, regions classes or individuals⁶. This type of analysis is neither simple nor straightforward at all.

Suppose we calculate the general equilibrium of economy A before an increase in the personal income tax designed to finance a new transfer for low earnings families is introduced. Thereafter we recalculate the general equilibrium⁷. Let us consider first the direct effects. Atkinson and Stiglitz (1980) provide a good illustration of the complexity of this kind of study. What we are likely to find, according to them, is that “the change in

⁶ The notion of incidence has been a central concern of public economists for a long time. A very complete review of the different dimensions of incidence can be found in Atkinson and Stiglitz (1980: 160-199).

⁷ Examples of a similar fashion can be found in Atkinson (1994).

real income of those upon whom the tax is levied is smaller than the magnitude of the tax” (p.160). Alternatively we can equally observed the reversed image of this phenomenon in the net income change of low earnings families. The proportional amount that they get is not equal to the tax levied. When such is the case, taxes and transfer are said to be “shifted to others within the economy”(p. 160). Their direct redistributive net effect is therefore very difficult to ascertain. Taxes and transfers have also inter-temporal, indirect effects. Put it straightforwardly they generate behavioural responses from market actors, who adjust their economic decisions to the nature and changes of policy interventions. Consumption patterns, saving decisions, geographical mobility or labour supply are four examples of spheres where reactions could practically take place .

Taken together both direct and indirect effects make the assessment of the net impact of any public intervention a very difficult task. As Boadway and Keen (2000: 758) put it , “by its very nature, the measurement of redistribution in existing or alternative fiscal policies is a counterfactual exercise. It involves measuring how a given set of policies affects different classes of households compared with those of some benchmark policy that is in some sense distributionally neutral”. Atkinson and Stiglitz (1980:260) similarly argue that “in order to assess the distributive impact of a particular policy a comparison has to be made between the situation with the tax or expenditure and that without”. The number of dimensions involved under the label redistribution is so high that it is very difficult to foresee any situation to match the analytical requirements of a perfectly clean counterfactual. Assumptions are therefore needed to model the incidence of taxes and transfers in a feasible way.

Then the issue arises as to what extent our conclusions about the re-distributive impact of any set of policies, and overall our conclusions about the relation between politics and inequality, are or not model-specific. In other words, it is more than likely that our a priori assumptions about the treatment of side-effects become crucial for the analysis. Hence the question is not whether or not we ought to make assumptions within the framework of a counterfactual reasoning, but how crude or accurate these are and, more significantly, how they predetermine those aspects of the analysis we are interested in. Several positions can be adopted. The different perspectives available can be ranked in a continuum whose extremes are, on the one hand, those who take most seriously the need to incorporate behavioural responses in the study of incidence and, those who, on the other hand, pay no attention whatsoever to the issue. In this respect I would like to distinguish three orders of incidence⁸.

First order incidence: in this framework the impact of transfers and taxes is purely cross-sectional. The behavioural responses by market actors are excluded from the analysis. The first order incidence approaches generally neglect the equilibrium consequences of the reforms they address. These are the underpinning assumptions of many standard

⁸ See Boadway and Keen (2000:771-779). Their discussion is mainly focused on the shifting assumptions (progressive versus regressive assumptions about incidence) about tax incidence, which is an independent dimension in relation to the one of interest in this paper: the behavioral responses to taxes and transfers. However its interest lies in showing how the findings can be very sensitive to different assumptions, a case which is particularly relevant when incidence is studied through computable general equilibrium models.

techniques to estimate the effect of taxes and transfers like the Gini coefficient or, more generally, the Lorenz-curve based approaches, the conventional exploitation of Household budget survey data or even simulations of policy changes at one point in time. By and large this is the dominant approach in the study of the political determinants of inequality.

Second Order Incidence: the major difference in relation to the previous approach is precisely that the behavioural responses by market actors are included in the analysis. In other words, the equilibrium consequences are taken into consideration when discussing the effects of a public intervention. The array of techniques to develop the analysis is more restricted. They are mostly reduced to micro-simulations that incorporate behavioural responses (both in a static as well as in a dynamic way⁹) into the model and to computable general equilibrium models¹⁰.

Third Order Incidence: includes the consideration of life time and/or intergenerational issues when assessing the impact of the intervention of interest. Both are beyond the concerns of this paper.

Since the first approach is the most widely applied in cross-national analyses of income inequality, let me discuss it in some detail. For the assumption of first order incidence to be reasonable, three conditions need to be met: (1) any action of the Government we are interested in should be a single, independent and perfectly isolatable disturbance of the economy, (2) when considered as part of a policy package, the interaction between two or more of these disturbances should have no effect and (3) that disturbance considered in itself should equally have no second-order, unintended, effect on the way the economy works. There are well grounded reasons to believe that neither of these conditions holds. Policies are usually part of a complex package and government interventions have externalities beyond their intended consequences. Moreover policies interact in many different ways, taxes and transfers being no exception (Coe and Snower: 1997). Taking the opposite view as a point of departure is therefore called to have significant analytical costs.

Let us go back for a moment to the data presented in table 1. Its results were apparently conclusive. There is no reason to believe that these data can be affected by the lack of ground attributable to conditions 1 and 2 above. They consider all the actions by governments in one shot. Moreover the differences between Gini coefficients can be taken as one of the most comprehensive-in fact far too comprehensive- representation of

⁹ Note that behavioral responses can be incorporated as well in static simulations models. And this sets in itself a comparison over time, a comparison before and after the intervention. In fact the conventional distinction between static and dynamic models is being increasingly blurred when it comes to market actors adjustments. As Mitton et al. (2000:2) argue, "in principle static or dynamic models may be augmented by introducing behavioural response, which allows the calculation of second-order effects due to changes in, for example, labour supply or fertility, following a policy change. For dynamic models, incorporating behavioural response means altering the nature of the transition probabilities that are used to age the micro-units. In practice this is rarely done".

¹⁰ A computable equilibrium model is a fully specified model of the market economy that allows incidence to be endogenously determined via the reactions of different sectors of the economy.

a *policy package*. These two conditions, in principle, are not likely to introduce any bias. On the contrary, the same can not be argued about condition 3. When considering several orders of incidence the question to be tackled is to what extent the conclusions drawn from these results are not the consequence of implicitly accepting, in a very restrictive way, that redistributive policies bear no relation with the way markets work, and ultimately with wages market income inequality.

If we were to question this assumption, it could be argued that the results presented in Table 1, column 4, and hence the implications derived from them about the redistributive role of government's budgets, are misrepresenting the relation between politics and inequality. The nature of the problems and their implications for our concerns can be better understood in the context of an inter-temporal world. If governments' decisions about redistribution affect the behaviour of market actors (for instance capital investment, savings, geographical mobility or labour supply), they are likely to affect the level of market income inequality. Therefore, if we take the standard definition of redistribution and policies at $t-1$ contributed to an increase of market income inequality, we will be overstating the levels of redistribution at t . In other words, politics would be artificially increasing its own effects. If, on the contrary, policies at $t-1$ provoke a reduction in market income inequality, the gap will be smaller. But this by no means implies that politics is becoming less significant. Quite the opposite should be argued. Let us consider a third case, with territorial implications. If in a two states (x, y) federation, state x increases redistribution significantly and as a result of that 50% of the people at the top decile move to state y, the distribution of market income in x at $t+1$ will be more equal and redistribution will be, if measured in the traditional way, lower. Again this claim is misleading, since the new figure does not imply that the impact of re-distributive policies is less significant at $t+1$.

Furthermore, the misrepresentation can take many forms since the intermediate steps can get more complicated, depending upon the definition of "market" income that is adopted at $t+1$. Several countervailing effects affecting the shape of the distribution of income can be expected. Recall expression (1) above. The impact of the welfare state on M (total market income) and GSW (earnings) is doomed to differ. And the reason is that whilst in the former those with 0 earnings are included, this is clearly not the case for the indicators of earnings inequality. Therefore the way these two distributions respond to the welfare state should differ. I will refer back to this point later. By now it is clear that the coexistence between the puzzle of egalitarianism and the process of convergence into higher levels of market income inequality can be explained within a pure first order incidence framework, since the processes and mechanisms that could potentially account for them are assumed away. The alternative proposed in this paper is built around three hypotheses:

- 1.-Wage and market income inequality are to a significant extent a function of second order effects of taxes and transfers.
- 2.-The differential impact of second order effects accounts for these two under-explored regularities.

3.- The mechanisms through which second order effects generate both outcomes are institutionally contingent upon (i) the way the welfare state is funded, (ii) the levels of wage bargaining centralization and (iii) the fine details of the institutional design of the transfer program. In what remains of this section I turn to substantiate these claims.

The Nature of Second Order Effects I

The main link between taxes and transfers and the distribution of wages and market income lies in the consequences of welfare state policies for the supply and demand of work. In this respect the conventional expectations regarding the effects of taxes and transfers have been derived from static partial equilibrium analysis, again anchored in rather simplifying assumptions. Put it very shortly, the effects of taxes and transfers, as considered by the standard theory of labour supply, involve income and substitution effects in the case of taxes and income and insurance effects in the case of transfers (Benjamin, Gundersson and Ridell 1998; Atkinson. 1993: 20-50; Pencavel 1986: 26-44).

In what regards taxes, the income effect makes people worse off (it is depicted as a movement towards a lower indifference curve between work and consumption), leading to an increase in the number of hours worked in order to recover what has been deducted. The substitution effect of taxes, which is depicted as movements round the indifference curve between work and consumption (disposable income) works in the opposite direction, since an increase in the level of taxation generates a parallel increase in the opportunity cost of working the same number of hours. The net impact of taxes is the result of combining the two effects, which makes the incidence of higher levels of taxation to be far from obvious (Atkinson 1993: 24-26). Nonetheless, in what regards wage inequality it is generally assumed that the income effect is dominated by the substitution effect, specially among high wage earners. Simply put a higher tax rate reduces the incentives of high wage workers to pursue further increases in their earnings and, eventually, widen the wage distribution. In other words, a higher tax rate reduces the costs and disincentives implicit to wage compression¹¹. As a result, the distribution of earnings is top trimmed. An increase in taxation may also cut the distribution from the bottom if the system is designed in a such a way that the marginal tax rates become very high as the earnings of low income people rise. If both processes coexist taxes will compress the distribution of wages to a large extent. Alternatively, if the bottom half of the distribution is dominated by the income effect and the top one is dominated by the substitution effect, these would largely cancel each other out. Finally, in the rather hypothetical event of the income effect being the only one in place, an increase in the levels of taxation would be reflected, *ceteris paribus*, on a increase in wage inequality.

The expected impact on the distribution of market income is the opposite. And this is so because, as mentioned above, the differences in the income components of wages (GWS) and market (M) income imply the consideration of different samples of people in the calculus of both indicators. As a result of the inclusion of 0 earners, and as

¹¹ Empirical evidence supporting this case on the basis of the Swedish experience is reported in Hibbs and Locking (1996).

long as the substitution effect dominates, an increase in taxation would be reflected in an increase in the proportion of people without earnings, widening, other things being equal, the distribution of market income. The opposite would occur if the income effect is the ruling one.

Let us turn now to discuss the second order effects of public transfers. The income effect of transfers would imply a reduction in the number of hours any given worker is prepared to work since, other things being equal, she needs less hours to make the same amount of final disposable income. In addition an increase in the level of transfers allows to devote more time to activities (be it leisure or job search) other than working and therefore rises the opportunity cost of taking up additional hours of paid work¹². All in all leads to expect that the higher the levels of generosity at t , the lower the levels of wage dispersion at $t+1$ ¹³ since the labour supply reaction of (actual and potential) workers, mainly at the bottom of the distribution, has a final compressing effect. In their comparative analysis of the effects to be expected from the impact of different unemployment benefits programmes, Benjamin, Gundersson and Ridell (1998), referring to cross-national evidence, found that “a more generous benefit structure lowers the cost of job search, thus raising the average search duration, and makes unemployed search more attractive relative to employed search, thus increasing the incidence of unemployment”(p.653). In other words, generous benefits tend to increase the unemployment spell and, in turn, to collapse the distribution of earnings. The expected effects on market income are again reversed. Since the number of non earners is also expected to increase, in the event of higher levels of generosity, I should find that the distribution of market income at $t+1$ is widened.

Any attempt to establish a set of predictions about the incidence of transfers is open however to further complications. These stem directly from the relaxation of two premises of the basic models of the impact of benefits on labour supply: the total absence of a life-time dimension in the actor's decision making process on the one hand and the lack of consideration to institutional differences among labour markets on the other. The consideration of a life cycle dimension in the decision making process faced by actual and potential workers brings into the analysis an entirely new motive inherent to public transfers: the provision of insurance against future uncertainty (Barr 2001). Contrary to the income effect, the insurance effect of transfers may encourage the entrance into the labour force, particularly in the case of outsiders. In the case of the people already at work the process is more ambiguous since, on the one hand, they may continue to work in order to qualify for future benefits but, on the other, there may be strong incentives (associated with the income effect) to enjoy the benefits between two employment spans as much as possible. Overall the net effect of transfers will be the combination of the insurance and the income effects

What can be said about the conditions under which either of these effects is the dominant one? The answer to this question leads us to institutions. There are reasons to

¹² These expectations are supported by cross-sectional estimations of what Pencavel refers to as the *static model* of labor supply (Pencavel 1986: 51-83).

¹³ For an argument in which the mechanisms linking an increase/cut in the UB are related to labour supply, wage bargaining relations and taxation levels, see Coe and Snower (1997:16-17). See also Snower (1997: 163-202).

believe that the balance between the insurance and the income effects (as well as their interaction with taxation) are likely to be heavily dependent upon specific institutional aspects of advanced industrial societies. In what follows I discuss which these features are and how they may reshape the expected pattern of second order effects of taxes and transfers.

The Nature of Second Order Effects: Institutional Contingencies.

We know from the application of general equilibrium theory that institutional complexities imply the existence of countervailing effects. In fact the very notion of incidence implies that any account of the relation between redistribution and earnings inequality is much less straightforward than stated in the former section. The multidimensional impact of a change in the levels and/or design of the unemployment benefits, within the context of a richer general equilibrium framework, has been analysed in detail (Atkinson 1993, 1999; OECD 1996). In line with the argument about the combined income and insurance effects of transfers, Nickell (1997) finds that high replacement rates, at the same time, boost high unemployment and create incentives to enter the labor force, since it is reducing the risks in terms of welfare of becoming unemployed in the medium run. By implication, any account of the relation between taxes, benefits and wage inequality should be qualified by the fact that the former are likely to work in different (even opposite) directions, depending upon several factors non included in the basic model. Giving one step further Atkinson and Micklewright (1991:1679-1727) have pointed to diversities in the policy and the institutional designs as the reasons that may explain why the econometric evidence on the impact of unemployment benefits levels on labor market transitions “is far from robust” (1720).

Such a multidimensional and institutionally contingent character may cast some doubts on the conclusions to be drawn from an analysis based on national aggregate indicators, which in fact may not be the best tool to capture the often extremely complex details of taxes, transfers and surrounding institutional environments. Hence causal statements may be taken with certain degree of agnosticism in this context. However that does not imply that the task of analyzing whether or not second order effects work differently under several sets of institutional conditions must be rendered as an impossibility. So the question to be tackled is under what institutional conditions may second order effects diverge in relation to the distribution of wages and market income?

Comparative political economy has produced a good deal of criteria around which nations’ institutional specificities cluster together. These criteria have shown consistently similar results. As argued above, in both the origins and the functions of different welfare states two motives coexist. These are redistribution and insurance (Atkinson 1995; Barr 2001). In fact the diversities among advanced industrial societies can be seen as different combinations of the ways welfare states perform their insurance and redistributive roles. The main argument of this section is that these differences condition both the magnitude and the direction of second order effects. For the issues of interest in this paper, three dimensions are particularly relevant: (i) the way the welfare state is funded, (ii) the nature of the institutions operating in different labour markets and, finally,

(iii) the design of the transfers policies and its interaction with the risk structure. Let me elaborate a bit more on each of these three dimensions.

The way the welfare state is funded provides a first indicator of the balance between redistribution and insurance. In principle it can be assumed that the higher the proportion of welfare spending covered by revenues from the income tax, the higher the weight of redistribution in the profile of a particular welfare state. And vice-versa, the higher the ratio of social security contributions, the higher the weight of insurance. Table 2 presents data for OECD countries using these indicators. As gross as it is, this indicator taps the level of conditionality of benefits in relation to previous earnings. Theoretically speaking, conditionality is called to have an impact on the way second order incidence works. Once life-cycle considerations are added to the basic model, I expect that such an impact takes the form of a countervailing insurance effect, driven by the need to qualify for future benefits, pensions in particular. In that sense, conditionality increases the opportunity cost of not entering the labour force. And precisely because of that, it generates second order effects of transfers that work in the opposite direction in relation to the income effect highlighted by the basic model.

[TABLE 2]

Risks and labour market institutions are very much interrelated. The insurance function of the welfare state has been recently analysed as the tool solving a coordination problem between employers and employees, namely the problem of skill investment (Estevez et al. 1999) The crucial distinction within this argument is the one between specific (those acquired at the industry/firm level) and general (those acquired via the general education system) skills. Put it very crudely, specific skills are less portable and entail more risks. Therefore, in order to solve the coordination problem, higher levels of both employment and unemployment protection are in need. Risks structures and social policy preferences diverge according to the composition of skills and these bear also consistent relations with both labour market institutions and welfare state policies¹⁴. Countries whose productive structure is more dominated by specific skills proved higher levels of social and labour market protection. (Estevez et al. 1999; Iversen and Soskice 2000)¹⁵.

¹⁴ At this point one clarification must be made. As yet it is not clear what the causal structure of the relation between the skill profile and the levels of employment and unemployment protection is. The arguments relating them (Estevez et al. 1999) are not very precise as to where the boundaries between the causes and the consequences of the different “welfare production regimes” are to be located. In fact, sometimes the lines are blurred and functions appear to become causes. Barr’s (2001) interpretation of the welfare state as a *piggy bank* is another case in point. The fact that the welfare state or any other set of labor market institutions carries out a function may explain its persistence over time, but does not necessarily explain its emergence. In the same fashion, the existence of a set of consistent relations within which the welfare state performs a (functional) insurance role in relation to skills related uncertainties can be the result of many different causal pathways. For the purposes of this paper, I shall adopt the very radical assumption of taking the different institutional settings as given.

¹⁵ Following Estevez et al (1999:39) I consider as general skills countries UK, USA, Canada and Australia. All the others out of my sample of 15 OECD nations are considered to be cases where the presence of specific skills dominates in the labor market. It must be noted that the match between countries with general skills and the ones included within the Liberal welfare regime is almost perfect.

More specifically, in relation to the institutional configuration of the labour market I would like to concentrate on one major aspect: the structure of collective bargaining. The conventional expectation in this respect is that generosity and centralization of wage bargain reinforce each other. As Coe and Snower (1997: 3) have argued in the context of their study of policy complementarities regarding the unemployment problem, generous benefits give “insiders more leverage in pushing up wages¹⁶”. That increases the relative weight of unionised workers and the political capacity of low income earners. Furthermore it also reinforces the two-fold effect of coordinated bargaining systems on wage inequality, namely a intra-occupational compression of wages and the setting of a effective top threshold around the negotiated rate (Estevez et al. 1999: 10). For all these reasons, in highly coordinated bargaining systems, the predictions about the second order effects derived from the basic model are expected to be reinforced: an increase in generosity leads, *ceteris paribus*, to a larger reduction in wage inequality and to a parallel increase in the levels of market income inequality.

Finally we turn to the institutional details of the different systems of provision of unemployment protection. Let me provide a hypothetical illustrative example. Consider the case of the use of wage subsidies as a tool to deal with the unemployment problem is generalized. The transfer of (more and more) generous subsidies to compensate for the tax wedge and encourage people’s entrance in the labor market would, other things being equal, simply revert the nature of the relation between transfers, unemployment and wage inequality. Policy designs matter for the scope and direction of second order effects. In addition to the issue of conditionality on previous earnings, which is mainly a feature of continental European welfare regimes, two other aspects of the institutional design of transfers are salient for second order effects. These are the different strategies adopted to overcome the risk of “poverty traps” and the scope of targeting (Bison and Esping Andersen 2000: 70-71).

Targeting reflects a residual conception of social policy. In principle it is highly redistributive since contributors and recipients do not tend to overlap¹⁷. In practice it is associated with lower levels of provision, lower net replacement rates, tighter eligibility conditions and a shorter length in the duration of the period of entitlement. Under these conditions an increase in the levels of generosity would take the form of an improvement in any of the aforementioned aspects and, from the point of view of second order incidence, an important insurance effect is to be expected. An increase in the levels of generosity creates incentives for low income people out of the labour force to enter it and qualify for future, relatively more generous, benefits. If this effect is strong enough it

¹⁶ The mechanism here is that it provides better options outside the labour-market and therefore the *exit* option is less costly.

¹⁷ Wallerstein and Moene (1999) show that in targeted models the political dynamics and the relation between inequality and politics is substantially different from those other regimes in which the pool of contributors and recipients overlap. In that sense a targeted system, at the extreme, can be defined as the reversed image from a system in which the middle classes are the major supporters and beneficiaries of the welfare state (See for all Le Grand et al.1987)

may overrun the income effect and revert the direction of second order effects derived from the basic model¹⁸.

Moreover, to fully grasp the interaction between targeting and second order effects, the specificities of Negative Income Tax designs as a device to prevent the risk of poverty traps inherent to traditional means tested programs must be considered (OECD 1994; Haveman 1995; Myles and Pierson 1997; Esping-Andersen 1999). NIT designs are thought to combine a reasonable income maintenance level with the creation of incentives to enter the labor force. Whether they manage or not depends upon their fine details. As put by Myles and Pierson (1997:6), “every NIT model is defined by three parameters: the guarantee level (the level of benefit provided); the tax-back rate (the rate at which benefits are reduced as the recipient gains income) and the breakeven point (the income level at which the benefit disappear)”. Second order effects are contingent to the balance between these three elements. For any given level of guarantee, a higher tax back rate creates a disincentive to enter the labor force, since an increase in the levels of generosity would be reflected on an increase in the effective marginal tax rate relative to the potential earnings. The tax wedge effect in this case would be similar to the one at work in traditional means tested programs, with marginal tax rates over 100%. In this case the effective disappearance of the insurance effect for people who were not previously working, the intensification of the income effect for those who had previously worked and the creation of poverty traps are the expected outcomes. On the contrary a big enough reduction of the tax back rate may completely revert this dynamics. The lower the tax back rate, the higher the incentives to re-enter the labor force since the effective marginal tax rate is also lower. In the presence of a low tax back rate an increase in the levels of generosity is expected to provoke a strong insurance effect among those people who are not previously working. That would lead second order effects in the opposite direction in comparison to the basic model, namely towards a widening distribution of wages and a reduction in the levels of market income inequality.

The risk of poverty traps has been proved present as well in skills specific European welfare states (Atkinson 1993: 289-297). The strategy adopted in these other cases combines high replacement/coverage rates and longer periods of entitlement with the implementation of active labor market policies (more specifically, the request of taking part in re-training programs). There is no reason to think that this kind of strategy can revert the conventional second order effects of higher levels of generosity. In fact, the major concern of these programs is the medium run efficient job reallocation of people and not the reduction of the unemployment spell per se. Furthermore, trade unions play a prominent role in the implementation of these programs as well as in organizing the reduction in the number of hours worked due to more generous transfers (and services). (Atkinson 1993). Behavioral responses are, so to say, institutionally constrained by an enhanced position of trade unions. Thus, *ceteris paribus*, under these conditions the second order effects derived from the basic model are expected to be reinforced.

¹⁸ Alternatively this institutional setting may generate a pattern of cyclical movements in and out of unemployment and the labor force in which low wages and low benefits reinforce each other .

Bearing in mind these institutional diversities as the criteria to classify advanced industrial societies, three groups clearly emerge. The first one includes countries (Australia, Canada, UK, USA) where the risk structure is dominated by general skills, the welfare state is funded mainly via the income tax, benefits are targeted and the poverty traps are confronted through the introduction of NIT designs. The second one includes countries (Germany, Austria, Belgium, France, Italy, Japan, Netherlands) where the risk structure is dominated by specific skills, the labor markets show medium levels in the centralization of wage bargaining (Iversen 1999:12), the welfare state is mainly funded via social security contributions (see table 2), there are high levels of conditionality on previous earnings and benefits present high net replacement rates (Esping-Andersen 1999: 22). Finally in the third group the risk structure (Norway, Finland, Sweden, Denmark) is also characterized by the prevalence of specific skills, the labor markets present the highest levels of wage bargaining centralization, the welfare state is funded mainly via the income tax, its transfers system provides universal and relatively high net replacement rates and the poverty trap is mainly faced by the implementation of compulsory active labor market policy measures¹⁹. Both the second and the third groups, with the exceptions of Japan and Italy, present high levels of employment protection (OECD: 1999).

[TABLE 3 ABOUT HERE]

To conclude this section, Table 3 presents a summary of the hypotheses derived from the discussion about second order effects and their institutionally contingent character. Let me first recall the predictions derived from the basic models of labor supply. In a timeless world, free of institutions, an increase in both taxation and benefits generosity is expected to compress the wage distribution and to expand the distribution of market income. In the case of taxes, the substitution effect dominates the income effect. In the case of transfers the income effect is the only one, since timeless models cannot include considerations about the insurance role of benefits. After allowing for life-cycle decisions and considering the variation of institutional environments the picture gains in complexity.

Most of the institutional features of Scandinavian nations, as discussed above, point to the direction of reinforcing the wage compressing/market income expanding effects considered in the basic model. The existence of a set of complementarities between non targeted benefits, an enhanced role of trade unions both in the bargaining and implementation of highly coordinated agreements (Sweden, Denmark: Atkinson 1993) and the use of active labour market policies to ensure future employability are expected to foster these effects.

In the case of continental welfare regimes two of their features may provoke second order effects to work in opposite directions. On the one hand high replacement rates and medium to high levels of unionization and wage bargaining centralization are

¹⁹ The introduction of the different nations skills profile as an indicator of specific risks structures is consistent with previous classifications based on earnings relatedness and the scope of institutionalization of social rights (Esping-Andersen 1990).

likely to generate a pattern similar to the one expected in Scandinavian countries. But on the other hand the dependency on previous earnings fosters the insurance effect of an increase in the levels of generosity (specially if pensions are considered in a life-cycle decision making framework). That creates incentives for people to enter the labor force which, other things being equal, would lead to a reduction in the levels of market income inequality as well as to a parallel widening of the wage distribution, given that entry jobs are less paid than long tenured ones. Alternatively if the first aspect dominates the second, a wage compressing effect of transfers should be observed. So the final picture may well be one in which, at the aggregate level, there are no significant net effects on the distribution of both wages and market income.

Finally the coexistence of second order effects working in opposite directions can also be hypothesized in the case of Anglo-Saxon, general skills driven, welfare regimes. As argued above, an increase in the levels of generosity in the context of targeted benefits increases the impact of the insurance effect of transfers in relation to the income effect. More people would find incentives to enter the labor force in order to qualify for these more generous benefits. However this effect may be cancelled out by the existence of a high tax wedge effect. The level of the tax back rate becomes crucial. In this respect there is evidence (Myles and Pierson 1997: 6) that, the implementation of NIT designs combines a low guarantee level with equally lower tax-back rates, which in turn makes the level of income at which the benefit disappears to be relatively higher. Under these conditions the tax wedge effect is progressively eliminated and the insurance effect of transfers is supposed to be the dominant one. In other words, the nature of second order effects is expected to be reverted in this particular cluster of nations. Other things being equal, an increase in the levels of generosity would be associated with an increase in the levels of wage inequality and an attendant reduction in the levels of market income inequality. In the next section we turn to the empirical analysis of these hypotheses.

III.- EMPIRICAL ANALYSIS.

The development of this section is as follows. First I discuss some methodological problems and the strategies adopted to solve them. On a second step, I describe the set of variables included in the analysis, reviewing briefly their definition and, in the case of control variables, their expected effects. Finally I turn to discuss the findings and their implications in relation to the argument developed in section 1.

3.1.- Nature of the Analysis, Problems and Methodology.

The logic underlying the empirical analysis can be presented as follows. In order to test the arguments presented in the former section, it is necessary to take as case of study an indicator of both wages and market income inequality, test whether or not there is an independent input on its evolution to be attributed to fiscal redistributive policies and see whether or not such an input shows the expected patterns. For these purposes, I have taken as dependent variables national indicators of earnings and market income

inequality in the OECD between 1980 and 1995²⁰. Concerning the independent variables of interest the analysis is carried out by including an indicator of unemployment benefits generosity and an indicator of the effective labour tax rate as measured by Mendoza (1997). The definition and sources of both the dependent, the control and the independent variables of interest is presented below.

I have chosen to introduce an indicator of generosity rather than of spending for a number of reasons. First, as I have argued above, because the main link between policies and market actors in this realm has to do with the consequences of transfers on labor supply and demand decisions. These are supposed to be more affected by generosity, i.e., by the amount of transfers per unemployed person than by a gross indicator of total welfare spending. Moreover this variable allows us to introduce some control on the level of needs. As Atkinson (1999) puts it, “one may have a high spending ratio on account of a large dependent population, not on account of a largely generous social program” (p.41).

The relations analysed in the former section included arguments on both general and institutionally contingent second order effects. In order to test these claims and to learn from the contrast of their different results, I have estimated two different models. The first one assumes that second order effects work in the same way all across OECD nations. It can be referred to as the general second order effects model (from now on the *general model*), whereas the second one aims at tapping the institutional contingencies of second order effects (from now on the *institutional model*). The models estimated have the following form.

General Model:

$$(Y_{i,t} - Y_{i,t-1}) = \alpha_i + \beta_1 Y_{i,t-1} + \sum \beta^j X_{i,t}^j + \beta^j G_{i,t-1}^j + \beta^j (G_{i,t}^j - G_{i,t-1}^j) + C_i + \varepsilon_t ,$$

where Y refers either to the wage inequality or the market income inequality measurement, X refers the independent variables and G refers to those independent variables whose short term effects are to be isolated, which in our case is the level of generosity²¹. C_i represents a set of country dummies introduced in order to control for unobserved country specific effects. The subscript i refers to the cross-sectional unit of the data set, in this case, the 15 OECD nations included. The subscript t refers to the time period. Finally the subscript j depicts each of the independent variables. The model has no common intercept. ε_t refers to a common error term.

Institutional Model:

The main difference between the general and the institutional model is that the main variable of interest, namely generosity, is constrained to vary across the three institutional clusters identified above. Hence the form of the model becomes,

²⁰ The countries included in the analysis are: Australia, Austria, Belgium, Canada, Denmark Finland, France, Germany, Great Britain, Italy, Japan, Norway, Netherlands, Sweden and the United States. In the case of market income inequality Austria has to be dropped due to the lack of information.

²¹ All models have been also estimated without decomposing the effect of generosity into its first lag and the first difference operator, i.e., treating it as one more X. The results were not sensitive to this change, as it can be confirmed by comparing the OLS panel corrected standard errors estimation and the two-steps instrumented variable estimation implemented in order to face the endogeneity problem.

$$(Y_{i,t} - Y_{i,t-1}) = \alpha_i + \beta_1 Y_{t-1} + \sum \beta^j X_{i,t}^j + \text{SWR} * \beta^j G_{i,t-1}^j + \text{SWR} * \beta^j (G_{i,t}^j - G_{i,t-1}^j) + \text{CEWR} * \beta^j G_{i,t-1}^j + \text{CEWR} * \beta^j (G_{i,t}^j - G_{i,t-1}^j) + \text{ASWR} * \beta^j G_{i,t-1}^j + \text{ASWR} * \beta^j (G_{i,t}^j - G_{i,t-1}^j) C_i + \varepsilon_t$$

where SWR denotes the Scandinavian cluster, CEWR denotes the continental European one and ASWR depicts the Anglo-Saxon political economies.

Both models have been estimated in error correction form. They apply OLS estimation with panel corrected standard errors (Beck and Katz 1995: 634-647). This strategy has proved to be a reasonable way of handling the statistical problems inherent to this type of specification²². In addition, error correction models have a few other worth noting features. First the parameter of the lagged dependent variable introduces a straightforward control of the equilibrium properties of the model. Normally it should have a value within unit square (that in this particular specification must be between -1 and 0), so that the effects of any shock to an independent variable are progressively reduced over time, leading the dependent variable to converge in long term equilibrium. Secondly, unlike other estimation strategies in the context of time series cross-sectional data sets, the dynamic component is treated as a source of salient information about the processes of our interest (Beck and Katz 1996). In that respect, this type of specification allows us to distinguish short term and permanent effects of any independent variable of interest. The long run permanent effect is obtained by dividing the coefficient of the variable of interest by the coefficient obtained for the lagged level of the dependent variable²³. In addition N. Beck has shown (1992) that if first difference operators of the independent variables were to be included in the specification, their coefficients would be a measurement of the short-term transitory effects of a one unit change in their value.

Given the nature of the variables included in these models, these are subject to a compelling charge. There are strong theoretical and empirical reasons to believe that the levels of generosity and the levels of inequality are endogenous (Wallerstein and Moene 1999; Iversen and Soskice 2000). Therefore, any result apparently consistent with the arguments developed in the paper could be challenged as a function of reversed causality. In order to discount such a charge I have re-estimated the above specified models using a two-stage least square instrumental variable procedure (Baltagi 1995) in which the levels of generosity are the instrumented variable, in turn modeled as a function of the level of inequality, lagged levels of generosity, lagged levels of de-industrialisation, unemployment, the ideology of government and one exogenous instrument, namely the levels of political turnout. In the case of the two-step instrumental variable estimations, the effects of the levels of generosity are estimated altogether; no distinction between the effects of the first difference and the lagged levels is estimated when controlling for endogeneity. All the results reported in tables 4 to 6 include both specifications.

²² These are first order serial correlation, spatial correlation in the error term and panel heteroscedasticity (Beck and Katz 1995:p.634; Hicks 1994: 170-173).

²³ To be more precise, in the actual form in which the models have been specified, the long run effects are the result of dividing B_j/B_1 . And this is so because of the following. The standard form of an error correction model is $Y_{i,t} = (1 - \beta_1)Y_{t-1} + \sum \beta^j X_{i,t}^j + \text{Error}$, which, in this paper, is rewritten as $(Y_{i,t} - Y_{t-1}) = -\beta_1 Y_{t-1} + \sum \beta^j X_{i,t}^j + \text{Error}$, expression in which the long term equilibrium parameter is $-\beta_1$.

3.2.- Definition of Variables

Dependent Variables

Wage Inequality: I have estimated the models on three indicators of earnings inequality: the 90/10, 50/10 and 90/50 percentiles ratio. The first one is aimed at capturing the overall earnings dispersion, whereas the other two focus , respectively, on the lower and the higher shares. By introducing this distinction I want to explore whether or not second order effects are conditional to the share of the wage distribution being analysed²⁴.

Market Income Inequality:

Gini coefficient of market income per equivalent adult, calculated by the author on the basis of the LIS data set. Several aspects of the construction of this variable are worth noting. The LIS data set allows crossnational comparisons with standardised measurements of inequality. However the number of points in time is rather small. Nonetheless time series of different market income measurements are available for a large number of OECD countries. In order to complete the LIS time series I have interpolated the data assuming that the hypothetical LIS measurements of market income inequality would follow a similar trend to the one depicted by the domestic sources. By doing so I have obtained a measurement of market income inequality for 14 OECD countries between 1980 and 1995 which can be regarded as reasonably comparable both cross-sectionally and over time²⁵.

Independent Variables

For the sake of simplicity the control variables have been split into three groups: the first one includes variables capturing changing economic structural conditions. The second one includes variables of a political-institutional nature, aiming at capturing, among other things, the effects of different conventions as to how to regulate labour markets and organise the relations between productive factors. The last one includes the two variables of interest, namely generosity and effective labour tax rate²⁶.

Changing Economic Conditions

Unemployment: standardised unemployment rate, OECD, *Employment Outlook* various issues. There is no theoretical consensus concerning this variable (Rueda and Pontusson 2000: 359). Unemployment appears to be a double-edge sword in relation to wage inequality. On the one hand it is argued that it reduces the bargaining position of low

²⁴ These variables have been obtained from OECD (1993, 1996) and thanks to the generous help of David Rueda who made available a richer version with a small proportion of interpolated data. See Rueda and Pontusson (2000) for a discussion of the interpolation procedure.

²⁵ I thank Tony Atkinson for making these different national time series available to me.

²⁶ My thanks to Torben Iversen, Michael Wallerstein and David Rueda for making generously available from their data sets many of the variables included in the analysis.

skilled workers, so that the elasticity between unemployment and wage inequality should be a positive one. But almost for the very same reason, if unemployment is heavily concentrated in low skilled workers, the distribution of wages becomes bottom trimmed and more compressed. Given the pattern of concentration of unemployment by skills (Nickell and Bell:1995, 1997) I would expect the second effect to dominate the first one.

Income: it is included as a control for the idea that the change in the amount of national income affects the way it is distributed in a non monotonic, inverted U shape (Kuznets 1955). Advanced industrial societies should be in the downward slope and the expected relation should be negative. Real GDP per capita in 1985 US\$. Source: Penn World Tables.

LDC: non OPEC trade as a percentage of GDP. As such it is expected to test the distributive consequences of globalisation. The higher the rate, the higher the imports of manufactured goods from these countries, and therefore the higher the inter-sectoral wage dispersion. See Rueda and Pontusson (2000) for sources.

Trade Openness: is included as a broader indicator of globalisation in the regressions for market income inequality. Total imports and exports on good and services as a percentage of GDP. See Iversen and Cusack (2000) for sources.

Deindustrialisation: this variable is defined by Iversen and Cusack (2000: 313-349) as 100 minus the sum of manufacturing and agricultural employment as a percentage of the working age population. Deindustrialisation is supposed to have two major effects: (1) an increase on the share of employment in the service sector, which in turn is far less unionised and is more likely to show higher levels of wage dispersion and a decrease of the average wages in the manufacturing sector, which would increase its differential with the service one. In those countries in which deindustrialisation is reflected not in lower wages, but in higher unemployment rates among formerly manufactured workers, this second effect may be offset. Nevertheless, all in all, the higher weight of the service sector leads to expect that the higher the levels of deindustrialisation at t-1, the higher the levels of wage dispersion at t.

Female Labour Force Participation: source OECD. There is no consensus regarding the expected effects of this variable. A priori, the fact that women have been entering the labour force while being on average less educated should provoke an increase in the levels of wage dispersion due to the differential in the returns to education (Gottshalk and Joyce 1998: 489-502). However this effect should be reduced over time as the differences in terms of experience and educational attainment are progressively reduced.

Different Political and Institutional Conditions

Wage centralisation: calculated by Iversen (1999).It is an index of centralization of wage bargaining which combines a measure of union concentration with a measure of the prevalent level of bargaining. The expected association between centralisation and inequality is negative. Why? This measure aims at capturing the structure of wage

bargaining in any given country²⁷. Its higher scores reflect situations in which different sectors, types of firms and unions (even if ranked by wage) jointly bargain which boosts a reduction of wage differentials.

Union density: data come from Visser J. (1989, 1996). This variable captures employed union members as a percentage of the employed labour force. The expected impact of this variable depends on which share of the labour force is more organised. As Rueda and Pontusson (2000: 360) point out in a follow up of previous Freeman (1982) work, “unionism would be a source of wage inequality if highly paid wage earners were better organised than low-paid workers, and the opposite would hold if low paid wage earners were better organised”. The conventional expectation is the latter to be the case, given the current prevailing structure of trade unions organisations.

Left: this is an index of the partisan left right “center of gravity” developed by Cusack (1997). It is based on Castles and Mair’s codings of government parties’ placement on a left right scale, weighted by the decimal share of cabinet portfolios. The Index varies from 0, extreme right, to 4, extreme left. The expected relation is negative. Left wing governments are more prone to direct intervention in the labour market (i.e., for instance, they are more prone to set up an statutory minimum wage) and therefore to generate more equal distributive outcomes.

Civilian Government Employment: source OECD/Cusack (1991). Wages in the public sector are expected to be more compressed than in the private one. Countries with higher public sector presence are expected to reflect lower levels of wage dispersion.

Turnout: annual voter turnout rates. This variable is the exogenous instrument in the two step instrumental variable estimations. The link between political turnout and the size of redistribution has been documented by a large literature on the political determinants of the welfare state. See Huber and Stephens (2001) for a review of this literature and sources.

Variables of Interest

Generosity: it is the ratio calculated by myself of the total expenditure on unemployment benefits as a percentage of GDP to the unemployment rate. The sources I obtained the raw data from are the OECD social expenditure data base (1997) and the LIS-Comparative Welfare States Data set (Huber et. Al. 1997).

Effective Labour Tax Rate: Mendoza (1997). It is defined as individual income tax revenues divided by wages and salaries, property and entrepreneurial income and the operating surplus of private unincorporated enterprises.

²⁷ The variable works as follows: “The centralisation variable is divided into three classes: a decentralised category where firm and plant-level bargaining dominate, an intermediate centralised category with most bargaining taking place at the industry or sectoral level and a centralised category with an important role for peak level bargaining between encompassing organisations of labour and capital” (Iversen 1999: p.4)

3.3.- Discussion of Results.

[TABLES 4, 5 and 6 ABOUT HERE]

This section is carried out in three steps. After presenting some general aspect of the models and a brief comment on the control variables, I focus more closely on the results of the variables of interest, highlighting their implications for the theoretical issues discussed in section 1.

The results reported on wage inequality show a few interesting results. The coefficient for the lagged dependent variable remains for all the models between -1 and 0 , ensuring the long term equilibrium properties of the model. Most of the independent variables present statistically significant results, generally in the expected direction, as well as high consistency with previous findings. De-industrialization shows a consistent positive effect on wage inequality across the models. The coefficient for unemployment is negative and significant in the different models reported, which seems to indicate that the high concentration of unemployment in low skilled people has overrun the effect of the loss of leverage of the trade unions. The wage centralization variable and the indicator tapping the ideological composition of the government show highly consistent effects in the expected negative direction. Finally it must be noted that the models show a positive effect of the female labor force participation rate, which seems to be more robust than in previous findings.

Three additional points are worth noticing in what regards the control variables. The results for Civilian Government Employment are very inconsistent across the models. Secondly, the effect of union density varied depending on which share of the wage distribution we are looking at, showing some effects that contradict previous findings. Far from reducing wage inequality in the bottom half of the distribution, it has a positive and significant effect on it, the bottom half of the distribution. Devoyre and Miranda (1999) reported similar results. They linked this finding to insider/outsider processes and the changing role of unions. In our case, however, we find no significant differences in the role played by this variable when comparing the top (90/50) and bottom shares(50/10). It must also be noted that its results are sensitive to different specifications. Finally, and in sharp discrepancy with the globalization prophecies, we find that in none of the models the level of commercial exchanges with developing countries contributes at all to the explanation of cross national differences in terms of wage dispersion. The variable tapping these exchanges lacks robustness and is rendered insignificant in most of the models specified.

In what regards the control variables included in the analyses of the determinants of market income inequality, it must be pointed out that earnings constitute the main component of this broader measurement. Hence, even though the comparisons between these two distributions is relevant for the issues tackled in this paper, we should observe that to a large extent the control variables follow a similar pattern, exception made of the unemployment rate, whose sign should become positive. And this is to a large extent what is found. De-industrialisation and unemployment present positive elasticities albeit

the latter is not significant, a result on which we will come back later. The coefficients for the variables tapping globalisation are neither robust nor consistent across the models. In turn, the core political and institutional variables retain their impact, even if now union density shows more consistent estimates than the centralization of wage bargain. To sum up, in relation to the two groups of control variables, the results are to a great extent in line with the previous literature. I turn now to the discussion of the effects of our variables of interest.

Let me start by commenting on the general model. The results contained in tables 4 and 6 seem to confirm the existence of second order effects in the expected direction. Regarding the distribution of earnings these effects are mainly concentrated at the bottom and barely existent at the top half. The estimates reported for the 90/10 and 50/10 distributions indicate that second order effects appear to be dominated by processes taking place mainly at the bottom half of the wage distribution. There is a quite significant short term transitory effect of our indicator of generosity on the levels of both earnings and market income inequality at $t+1$. Moreover, in these distributions (50/10, 90/10 and market income inequality), the lagged term of our measurement of generosity is significantly different from zero for all the definitions of the dependent variable. There seems to be room to talk about permanent second order effects. That means that in long term equilibrium, holding constant the values of all the other explanatory variables, the levels of generosity are negatively correlated with the levels of wage inequality and positively correlated with the levels of market income inequality. The expected effects of taxation levels on wage inequality are present only in some of the models, far less consistently and with smaller elasticities than in the case of generosity. In the case of taxes the balance between the income and the substitution effects appears to change depending on the specification. Finally the results obtained on the impact of generosity do not seem to be affected by a problem of endogeneity.

What are the substantive implications of these results?. The argument that both the puzzle of egalitarianism and the process of relative convergence into high levels of market income inequality can be accounted for by the existence of second order effects of redistributive policies receives a good deal of empirical support. Redistributive policies are proved to generate multidimensional effects, often working in opposite directions. These models show that if low levels of wage inequality coexist with large welfare states, it is because the former are to a large extent a function of the latter in a relation driven by labor-supply related mechanisms. Furthermore, if both low wage inequality and large welfare states coexist with high levels of market income inequality, it is because second order effects are reflected differently depending upon the components of the distribution of income. The same mechanisms that contribute to solve the puzzle of egalitarianism would account for the equally puzzling general upward trend in market income inequality.

Nonetheless, as argued in section II, the assumption of a common pattern across advanced industrial societies is likely to obscure the way these mechanisms work, since these are known to be very much institutionally contingent. In fact our theoretical discussion pointed to simultaneously working countervailing effects that, under a set of

specific conditions, could even reverse the aggregate pattern of second order effects. So, what do the models say? The results of the institutional models (Tables 5 and 6) are to a large extent consistent with our expectations, and contribute to further solve the puzzle of egalitarianism.

Let me review them in some detail. In the case of wage inequality (Table 5) both models A and B yield very similar results, confirming that second order effects work differently in Anglo-Saxon Countries. Other things being equal, an increase in the levels of generosity is shown to have both short and long term expanding effects. The expectations derived from the combination of targeting and low tax back rate NIT designs receive empirical support at the aggregate level, as confirmed by the results obtained for the bottom half of the wage distribution. Interestingly enough, the short term impact of generosity on the wage distribution is also strong in the upper half of the distribution. The models also show differences between the Continental European and the Scandinavian countries: while in the former there are no significant effects at the aggregate level, the compressing effect on the wage distribution is both strong and robust in the latter. The interaction between higher levels of generosity and high levels of centralization of wage bargain yields the expected outcomes.

If we shift our attention to the results for market income inequality, it can be argued that they also confirm to a large extent the institutionally driven character of second order effects. Both models A and B show that in the event of higher levels of generosity, a contraction in the distribution of market income takes place in Anglo Saxon countries, whilst exactly the opposite occurs in Continental European Welfare States. The results for Scandinavian countries are less consistent. Once we eliminate endogeneity, the expanding effect of generosity is rendered non significant. Comparing these results with the ones on wages, it seems to be the case that the reactions of the two distributions to second order effects are not always related. In Scandinavian nations second order effects compress the distribution of wages (due to the mutual reinforcement between generosity and union power), but they are not automatically reflected in the distribution of market income. Alternatively, in Continental European welfare regimes, while the insurance and the income effects inherent to higher levels of transfers seem to cancel each other out, rendering the impact on wages as non significant, second order effects on market income are fairly robust. This differential impact is in itself an interesting finding that points to the need of exploring further the interactions between employment protection, benefits generosity and the way the welfare state is funded.

In continental European welfare regimes high levels of employment protection (OECD: 1999) coexist with an insurance dominated way of funding the welfare state. Under these conditions the labor market is expected to get closer as generosity increases since, *ceteris paribus*, the incentives of both employers and full time employees to create more employment are reduced. This closure of labor demand is likely to be the mechanism that rules out any clear input on the distribution of wages (specially if it is tapped, as in this case, by considering only full time employees), and translates the bulk of second order effects to the distribution of market income. The fact that the coefficient for unemployment is non significant in the institutional models of market income

inequality provides indirect support to this claim. Such a process is not likely to take place in countries where the levels of centralization of wage bargain are much larger and the income tax is the main source of funding re-distributive policies.

Bringing all the pieces together into a common picture it can be concluded from the institutional model that the causal processes underlying both the puzzle of egalitarianism and the relative convergence in market income inequality are richer than suggested by the general models of second order effects. The dynamics of mutually reinforcing inequalities and policy strategies shows different feedback mechanisms depending on the interaction between different institutional environment and the income/insurance effects of transfers. Therefore these two patterns are to be explained not only because countries differ generally in their levels of generosity, but also because, given any starting point, in the event of an increase of generosity, second order effects vary depending upon the surrounding institutional conditions. As a way of illustration of the results of this paper, it can be argued that the puzzle of egalitarianism is not only due to the fact that Swedish and Danish unemployment benefits are 3.5 and 1.8 times more generous than the British and the Canadian ones respectively. It is also the consequence of the fact that, in the event of a hypothetical common increase, wage inequality would rise in Canada and the UK and decrease in Sweden and Denmark. Alternatively if wider differences in their levels of market income inequality are not observed, it is partly because some countries show lower levels than they would in the absence of taxes and transfers, while in others market income inequalities are increased by the very generosity of the unemployment benefits.

CONCLUSIONS

This paper has shown that the distributive and re-distributive processes in advanced industrial societies are multidimensional. The goal of better understanding them, I have argued, requires the incorporation of higher orders of incidence. In order to prove this claim, I have identified two under-explained empirical regularities, namely the puzzle of egalitarianism and the process of cross-national convergence in market income inequality. I have shown that these two regularities can not be understood from the standard, mono-dimensional, first order incidence framework.

Thereafter I have hypothesized that these two processes can be explained by the existence of labor supply related second order effects of taxes and transfers. These are the income and the substitution effects in the case of taxes and the income and the insurance effects in the case of transfers. After discussing what the conventional expectation about their impact is, I have also argued that in order to fully account for the above mentioned empirical processes, we must take into account that second order effects are institutionally contingent. A set of arguments on which these contingencies are and how they cluster across nations has also been developed. Both arguments have received considerable empirical support.

The results of the paper have in addition important methodological implications, in line with the distinction of several orders of incidence. Most prominent among them is the need to qualify the standard definition of redistribution as the difference between the Gini(s) for market and disposable income inequality. If, as shown in this paper, redistribution is a determinant of market income inequality on its own right, such a measurement is rendered an (endogenously) biased indicator of the impact of politics on inequality.

The development of a theoretical model that links the structure of incentives of market actors to different policy and institutional designs, and related to that, the study of how second order effects condition the political support for different strategies to adjust/reform the welfare state are the two streams of research I endeavour to pursue in the coming future.

REFERENCES

- Alderson A.S (1997) *Globalisation and Deindustrialisation: Direct Investment and the decline of Manufacturing Employment in 17 OECD Nations*, Journal of World Systems Research, online version.
- Atkinson A.B. (1993) “ Work Incentives”, in *ibid.* (ed.) *Welfare and Work Incentives. A North European Perspective*, Oxford, Clarendon Press.
- Atkinson A.B: (1994) “The Distribution of the Tax Burden”, in Quigley J.M. and Smolensky E. (eds.) *Modern Public Finance*, Harvard University Press, Cambridge MA.
- Atkinson A.B. (1995) *Incomes and the Welfare State*, Cambridge University Press
- Atkinson A.B.: (1999) *The Economic Consequences of Rolling Back the Welfare State*, MIT-CES, Cambridge
- Atkinson A.B.: (2000a) *Is Rising Inequality Inevitable? A Critique of the Transatlantic Consensus*, Wider UNU.
- Atkinson A.B.: (2000b) *Increased Income Inequality in OECD Countries and the Distributive Impact of the Government Budget*, Unpublished Manuscript.
- Atkinson et al. (1995): *Income Distribution in OECD Economies*, OECD, Paris.
- Atkinson A.B and Micklewright J.(1991): “Unemployment Compensations and Labour Market Transitions: A Critical Review”, *Journal of Economic Literature*, Vol. XXIX (December 1991), pp. 1679-1727.
- Atkinson A.B.and Stiglitz J.: (1980) *Lectures in Public Economics*, McGraw-Hill.
- Baltagi B . (1995) *Econometric Analysis of Panel Data*, New York, John Wiley .
- Barr N. (2001), *The Welfare State as a Piggy Bank*, Oxford, O.U.P
- Bayoumi T. and Prasad E. (1997) “Currency Unions, Economic Fluctuations and Adjustments: Some New Empirical Evidence”, *IMF Staff Papers*, 44, 1, pp. 36-58.
- Beck N. (1992) “Comparing Dynamic Specifications: The Case of Presidential Approval”, in Stimmson J. (ed.) *Political Analysis*, vol. 2, Ann Arbor, University of Michigan Press.
- Beck Nath and Katz J. (1995) “What to do (and not to do) with time series cross-section data”, *American Political Science Review*, 89, 3, pp. 634-647.
- Beck N. and Katz J. (1996) “Nuisance vs. Substance: Specifying and Estimating Time Series Cross-section Models”, *Political Analysis* 6, 1-34.
- Benjamin D., Gunderson M. and Riddell W.C. (1998) *Labour Market Economics*, MacGraw-Hill, Toronto.
- Boadway R. and Keen M. (2000) “Redistribution” in Atkinson A.B. and Bourguignon F. (eds) *Handbook of Income Distribution*, Elsevier, Oxford, pp.677-779
- Boix , C: (1998) *Political Parties, Growth and Equality*, Cambridge University Press, 1998.
- Coe D.T. and Snower D.J. (1997) “Policy Complementarities: the Case for Labour Market Reform”, *IMF Staff Papers*, vol. 44 , n. 1.
- Cusack T. R. (1991): *Government*, WZB Working-Paper.
- Cusack T. R. (1997): *Partisan Politics and Fiscal Policy*, WZB-WP.
- Devroye D. and Miranda d. (1999) *Democracy versus Inequality: Political Buffers to Growing Wage Dispersion in the Post-Industrial Era*, Unpublished Manuscript.
- Drazen A. (2000) *Political Economy in Macroeconomics*, Princeton, Princeton University Press.
- Esping-Andersen G. (1990): *The Three Worlds of Welfare Capitalism*, Princeton, Princeton University Press.
- Esping-Andersen G. (1999): *Social Foundations of Post-industrial Economies*, Oxford, Oxford University Press.
- Estevez-Abe M., Iversen T. & Soskice D. (1999): *Social Protection and the Formation of Skills: a Reinterpretation of the Welfare State*, Paper Presented at the 95th APSA Meeting, Atlanta.

- Freeman R. (1982) "Unionism and the Dispersion of Wages", *Industrial and Labour Relations Review*, 34, October 1980.
- Freeman R. (1995): "Are your wages set in Beijing?" *Journal of Economic Perspectives* 9, 3, pp. 15-32.
- Freeman R. and Katz L. (eds.) (1995): *Differences and Changes in Wage Structures*, Chicago, The University of Chicago Press.
- Förster M (2000) *Trends and Driving Factors in Income Distribution and Poverty in the OECD Area*, OECD-Paris, Social Policy Occasional Papers, n.42.
- Garrett G. (1998) *Partisan Politics in the Global Economy*, Cambridge, MA, Cambridge University Press.
- Gottschalk P. and Joyce Mary (1998) "Crossnational Differences in the Rise of Earnings Inequality: Market and Institutional Factors", *The Review of Economics and Statistics*, LXXX, 4, 489-502.
- Gottschalk P and Smeeding T. (1997): "Crossnational Comparisons of Earnings and Income Inequality", *Journal of Economic Literature*, Vol. XXXV, pp.633-687.
- Gottschalk P and Smeeding T. (2000): "Empirical Evidence on Income Inequality in Industrialised Countries", in Atkinson A. B. and Bourguignon F. (eds.) *Handbook of Income Distribution*, Oxford, Elsevier, pp. 261-304.
- Gottschalk P., Gustafsson B. and Palmer E. (1997): "What is behind the increase in Inequality? An Introduction", in Gottschalk P., Gustafsson B. and Palmer E.(eds) *Changing Patterns in the Distribution of Economic Welfare*, Cambridge, Cambridge University Press, pp. 1-11.
- Gustafsson B. and Johansson M. (1999): "In Search of Smoking Guns: What Makes Income Inequality Vary over Time in Different Countries?", *American Sociological Review*, 64, pp. 585-605.
- Hall P. and Soskice D. (2001). *An Introduction to Varieties of Capitalism*, Unpublished Manuscript
- Haveman R. (1995) *Reducing Poverty while Increasing Employment: a Primer on alternative Strategies*, OECD Paris, 95/68.
- Hibbs , Douglas and Locking L. (1996) "Wage Compression, Wage Drift and Wage Inflation in Sweden", *Labour Economics*, 77, pp. 1-32.
- Hicks A. (1994) "Introduction to Pooling" in, Janoski Th and Hicks Alexander M. (eds.) *The Comparative Political Economy of the Welfare State*, Cambridge, C.U.P.
- Huber E. and Stephens J. (2001): *Development and Crisis of the Welfare State. Parties and Policies in Global Markets*, Chicago, The University of Chicago Press.
- Huber E., Ragin C. and Stephens J. (1997): *Comparative Welfare States Data Set*, Northwestern University and University of North Carolina.
- Iversen T. (1999) *Contested Economic Institutions. The Politics of Macroeconomics and Wage Bargaining in Advanced Democracies*, Cambridge MA., Cambridge University Press.
- Iversen Torben and Cusack T. (2000) "The Causes of Welfare State Expansion: Deindustrialisation or Globalisation?", *World Politics*, 52, pp. 313-349.
- Iversen T. and Soskice D. (2000) An Asset Theory of Social Policy Preferences, Paper prepared for the APSA 96th Meeting, Washington DC
- Korpi W. and Palme J. (1998). "The Paradox of Redistribution and the Strategy of Equality: Welfare State Institutions, Inequality and Poverty in the Western Countries", *American Sociological Review* 63 (5) , pp. 661-87.
- Le Grand J. & Goodin R. (eds.) *Not Only the Poor. The Middle Classes and the Welfare State*, London, Allen & Unwin.

- Mendoza E. et al (1997) "On the Ineffectiveness of Tax Policy in Altering Long-Run Growth", *Journal of Public Economics* 66, 99-126.
- Meltzer A. H. and Richard S., F. (1981), A Rational Theory of the Size of Government, *Journal of Political Economy*, vol 89, pp. 914-927.
- Mitton L., Sutherland H. and Weeks M. (2000): *Microsimulation Modelling for Policy Analysis*, Cambridge, Cambridge University Press.
- Mulé R. (2001): *Political Parties, Games and Redistribution*, Cambridge, Cambridge University Press.
- Myles J. and Pierson P. (1997): *Friedman 's Revenge: The Reform of "Liberal" Welfare States in Canada and the USA*, EUI Working Paper, 97/30.
- Neal D. and Rosen S. (2000) "Theories of the Distribution of Earnings", in Atkinson A.B. and Bourguignon F. (eds) *Handbook of Income Distribution*, Elsevier, Oxford, pp. 380-429.
- Nickell S. (1997) "Unemployment and Labour Market Rigidities: Europe versus North America", *Journal of Economic Perspectives*, 11, 3, pp. 55-74.
- Nickell S. and Bell B. (1995): "The Collapse in Demand for the unskilled and unemployment across the OECD", *Oxford Review of Economic Policy*, 11/1.
- OECD (1993): *Employment Outlook*, OECD, Paris.
- OECD (1994): *Jobs Study: Evidence and Explanations*, Paris.
- OECD (1996): *Employment Outlook*, OECD, Paris.
- OECD (1999): *Employment Outlook*, OECD, Paris.
- OECD (1997): *Social Expenditure Data Base*, OECD, Paris.
- Pencavel J. (1986), "Labor Supply of Men: A Survey", in Ashenfelter et al. (eds.) *Handbook of Labor Economics*, vol I, North Holland, pp.3-96.
- Peracchi F. (1999) *Earnings Inequality in International Perspective*, Lis-WP# 208
- Pfaller A. (1991) *Can the Welfare States Compete?* London: Macmillan.
- Roberts K. (1977): "Voting over Income Tax Schedules", *Journal of Public Economics*, 8, pp. 329-340.
- Romer T. (1975) "Individual Welfare, Majority Voting and the Properties of a Linear Income Tax", *Journal of Public Economics*, 14, pp. 163-184.
- Rowthorn R. and Wells J. (1987): *Deindustrialization and Foreign Trade*, Cambridge, Cambridge University Press.
- Rowthorn R. and Ramaswamy R. (1997) *Deindustrialisation: Causes and Implications*, IMF Working Paper 97/42.
- Rueda D. and Pontusson J. (2000), "Wage Inequality and Varieties of Capitalism", *World Politics*, 52, April, 350-383.
- Saeger S. (1997) "Globalization and Deindustrialisation: Myth and Reality in the OECD", *Weltwirtschaftliches Archiv* 1997, vol 133 (4).
- Schulze G. G. and Ursprung H.W. (1995): "Globalisation of the Economy and the Nation State", *World Economy*, 22, 3, pp.295-352.
- Snowder D. (1997), "The simple economics of benefits transfers", in Snowder D. and De la Dehesa G. (eds.) *Unemployment Policy. Government Options for the Labour Market*, CEPR-Cambridge University Press, pp. 163-199.
- Visser J. (1989): *European Trade Unions in Figures: 1913-1985*, Deventer, Kluwer Law and Taxation Publishers.
- Visser J. (1996): *Unionization Trends: The OECD Countries Membership File*, Amsterdam, CESAR.
- Wallerstein M. (1999) "Wage-Setting Institutions and Pay Inequality in Advanced Industrial Societies", *American Journal of Political Science*, vol. 43, n 3, pp. 649-680.
- Wallestein M. and Moene K. (1999), *Inequality, Social Insurance and Redistribution*, Juan March Institute, WP 1999/144.

West Pedersen A. (1994) *The Welfare State and Inequality: Still no Answer to the Big Questions*, LIS-WP 109

Wood A (1994):*North-South Trade, Employment and Inequality*, Oxford, Clarendon Press.

Table 1: The Impact of Politics and the Puzzle of Egalitarianism

	Wage (90/10) Inequality (1)	Market Income Inequality (2)	Disp. Income Inequality (3)	Redistribution (4)	Welfare Effort (5)		Wage (90/10) Inequality (1)	Market Income Inequality (2)	Disp. Income Inequality (3)	Redistribution (4)	Welfare Effort (5)
<i>Australia</i>						<i>Italy</i>					
80s	2.83	0.327	0.27	0.172	23.312	80s	2.64	0.346	0.322	0.071	30.452
85s	2.73	0.352	0.281	0.2	27.053	85s	2.62	0.328	0.304	0.071	32.026
90s	2.81	0.361	0.292	0.19	26.592	90s	2.35	0.311	0.293	0.058	33.526
95s	2.91	0.363	0.294	0.189	28172	95s	2.41	0.393	0.341	0.135	34.131
<i>Canada</i>						<i>Japan</i>					
80s	4.02	0.325	0.274	0.157	27.71	80s	3.01	0.36	0.33	0.083	19.682
85s	4.45	0.343	0.28	0.183	30.356	85s	3.11	0.397	0.342	0.138	20.201
90s	4.4	0.346	0.283	0.181	30.337	90s	3.17	0.43	0.36	0.163	20.162
95s	4.18	0.353	0.29	0.178	32.657	95s	3	0.44	0.357	0.189	22.911
<i>UK</i>						Netherl.					
80s	2.98	0.309	0.252	0.184	27.847	80s	2.54	0.313	0.258	0.178	41.893
85s	3.19	0.344	0.269	0.219	30.68	85s	2.5	0.309	0.246	0.205	41.625
90s	3.41	0.376	0.337	0.105	28.839	90s	2.62	0.319	0.261	0.183	40.281
95s	3.46	0.406	0.342	0.157	33.62	95s	2.82	0.332	0.252	0.24	40.207
<i>USA</i>						<i>Denmark</i>					
80s	3.83	0.351	0.292	0.169	23.947	80s	2.18	n.a	n.a	n.a	39.449
85s	4.13	0.365	0.323	0.117	22.383	85s	2.15	n.a.	n.a.	n.a.	39.555
90s	4.33	0.388	0.332	0.144	23.512	90s	2.22	0.341	0.222	0.349	41.661
95s	4.6	0.409	0.349	0.146	24.96	95s	2.47	0.376	0.256	0.32	45.209
<i>Belgium</i>						<i>Finland</i>					
80s	n.a.	n.a.	n.a.	n.a.	35.305	80s	2.47	n.a.	n.a.	n.a	26.484
85s	2.4	0.266	0.223	0.16	36.362	85s	2.61	0.289	0.199	0.31	30.543
90s	2.3	0.284	0.22	0.224	34.892	90s	2.49	0.306	0.202	0.339	30.99
95s	2.24	0.303	0.246	0.19	38.131	95s	2.34	0.364	0.222	0.391	45.597
<i>France</i>						<i>Norway</i>					
80s	3.25	0.363	0.295	0.189	31.596	80s	2.06	0.283	0.2132	0.248	29.479
85s	3.12	0.346	0.281	0.1878	38.901	85s	2.05	0.265	0.216	0.186	30.312
90s	3.26	0.365	0.282	0.228	37.136	90s	2.01	0.297	0.213	0.283	37.144
95s	3.08	0.412	0.293	0.288	41.006	95s	1.99	0.335	0.226	0.325	35.995
Germany						<i>Sweden</i>					
80s	n.a	0.272	0.225	0.173	32.416	80s	2.03	0.302	0.197	0.347	43.679
85s	2.93	0.321	0.229	0.287	33.455	85s	2.06	0.326	0.213	0.348	44.09
90s	2.72	0.327	0.239	0.267	31.414	90s	2.01	0.341	0.218	0.362	45.525
95s	2.86	0.354	0.278	0.215	36.71	95s	2.2	0.38	0.224	0.41	48.062

(1) to (3) See text for details.(4) Standard Measure of redistribution as the proportional reduction between the Gini for market income and the Gini for disposable income. $R = [(Gini\ Market - Gini\ Disp) / Gini\ Market]$

(5) Total Social Spending as a % of GDP. Sources: OECD Social Exp. Data Base and Historical Statistics.

Table 2: FUNDING THE WELFARE STATE

	Ratio SSC to Welfare Spending				Ratio PIT to Spending				Ratio SSC to PIT			
	1980	1985	1990	1995	1980	1985	1990	1995	1980	1985	1990	1995
Belgium	0.39	0.42	0.45	0.40	0.45	0.44	0.40	0.38	0.86	0.97	1.13	1.05
Germany	0.48	0.48	0.44	0.42	0.35	0.32	0.33	0.32	1.38	1.49	1.34	1.31
Austria	0.36	0.36	0.37	0.38	0.31	0.33	0.29	0.28	1.14	1.10	1.29	1.36
France	0.63	0.54	0.52	0.47	0.17	0.15	0.14	0.15	3.64	3.67	3.74	3.13
Italy	0.43	0.38	0.39	0.38	0.31	0.34	0.31	0.32	1.37	1.11	1.25	1.21
Japan	0.39	0.42	0.46	0.46	0.33	0.35	0.42	0.27	1.20	1.22	1.09	1.70
Netherlands	0.42	0.48	0.42	0.46	0.29	0.21	0.28	0.21	1.45	2.28	1.51	2.21
Sweden	0.33	0.28	0.35	0.30	0.46	0.44	0.47	0.36	0.70	0.64	0.73	0.82
Norway	0.41	0.38	0.33	0.27	0.45	0.35	0.32	0.30	0.91	1.08	1.01	0.91
Finland	0.18	0.18	0.09	0.28	0.56	0.57	0.57	0.35	0.32	0.31	0.16	0.79
Denmark	0.02	0.05	0.04	0.04	0.60	0.62	0.61	0.61	0.03	0.08	0.06	0.06
US	0.33	0.38	0.37	0.29	0.46	0.46	0.45	0.41	0.71	0.82	0.83	0.69
United K	0.21	0.22	0.22	0.19	0.37	0.32	0.36	0.29	0.57	0.69	0.62	0.65
Canada	0.13	0.15	0.18	0.19	0.41	0.39	0.51	0.53	0.31	0.38	0.35	0.37
Australia	0.00	0.00	0.00	0.00	0.57	0.51	0.50	0.44	0.00	0.00	0.00	0.00

SSC: Social Security Contributions ; PIT: Personal Income Tax. Source: Cusack 1997.

TABLE 3

SUMMARY	THE INSTITUTIONAL DIMENSION OF SECOND ORDER EFFECTS. EXPECTED PATTERNS.	
	WAGE INEQUALITY	MARKET INCOME INEQUALITY
ANGLO SAXON COUNTRIES (ASWR)	+	-
CONTINENTAL EUROPEAN COUNTRIES (CEWR)	+/-	+
SCANDINAVIAN COUNTRIES (SWR)	-	+

TABLE 4

	WAGE INEQUALITY - GENERAL MODELS					
	90/10		50/10		90/50	
	Model A(*)	Model B	Model A	Model B	Model A	Model B
Lagged Dependent Variable	-0.71383*** (0.05473)	-0.72691*** (0.05637)	-0.62758*** (0.05911)	-0.7029*** (0.05901)	-0.6306*** (0.06662)	-0.8215*** (0.04911)
Unemployment Rate	-0.03024*** (0.0083958)	-0.0063 (0.01451)	-0.1832*** (0.00349)	-0.00464 (0.00657)	-0.00943** (0.00309)	-0.00095 (0.00267)
De-industrialisation	0.01200 (0.00645)	0.4259*** (0.01748)	0.00683** (0.00282)	0.01752** (0.00793)	0.01427*** (0.00284)	0.00182 (0.00311)
LDC	-0.00078 (0.00253)	-0.01326** (0.00618)	-0.00227** (0.001443)	-0.00677** (0.00277)	-0.00100 (0.00119)	-0.00288** (0.00114)
Union Density	0.001071 (0.3434)	-0.01667* (0.00970)	0.00921*** (0.00137)	-0.00157 (0.00436)	0.00117 (0.00094)	0.00791*** (0.00171)
Wage Centralisation	-0.51501*** (0.14848)	-0.71776*** (0.25017)	-0.13487** (0.04641)	-0.23665** (0.11237)	-0.06980 (0.04926)	-0.09114** (0.4487)
Civilian Government Employment	0.009492 (0.14602)	0.10095*** (0.03515)	-0.00490 (0.00712)	0.03316** (0.01572)	-0.00306 (0.00654)	0.00897 (0.00637)
Female Labour Force Participation	0.054966*** (0.13302)	0.03853* (0.02236)	0.01771** (0.00561)	0.01451 (0.01003)	0.00683* (0.00413)	0.00326 (0.00407)
Government Ideological Composition	-0.05864*** (0.181224)	-0.08032** (0.03373)	-0.02820*** (0.00782)	-0.03271** (0.01513)	-0.01065 (0.00659)	-0.01161** (0.00615)
Effective Labour Tax Rate	0.0000825 (0.001878)	-0.00488 (0.01824)	0.00258** (0.00134)	-0.00169 (0.00458)	-0.00023 (0.00049)	-0.00226 (0.00188)
Generosity1	-0.216329 (0.14341)	-1.278853*** (0.478015)	-0.12375** (0.06129)	-0.47203** (0.21898)	-0.03118 (0.4073)	-0.10232 (0.08095)
DGenerosity	-0.38492** (0.16562)	-0.94387** (0.43813)	-0.27412*** (0.06063)	-0.44935** (0.256)	-0.02110 (0.03827)	-0.04505 (0.0757)
R-Squared (N)	0.6397 (180)	0.5724 (170)	0.6104 (180)	0.5433(170)	0.6115(180)	0.7212(170)

Standard errors in parenthesis. Country dummies values not shown.(*) Model A refers to OLS panel corrected standard errors. Model B reports the results of two stage least squares instrumental variable estimation.

TABLE 5

	WAGE INEQUALITY - INSTITUTIONAL MODELS					
	90/10		50/10		90/50	
	Model A (*)	Model B	Model A	Model B	Model A	Model B
Lagged Dependent Variable	-0.6839*** (0.08999)	-0.4890*** (0.09614)	-0.6445*** (0.10506)	-0.5626*** (0.09206)	-0.5982*** (0.08463)	-0.6069*** (0.08037)
Unemployment Rate	-0.04028*** (0.01071)	-0.04958** (0.02065)	-0.02025*** (0.00512)	-0.02489** (0.00938)	-0.01032*** (0.00287)	-0.00743** (0.00375)
De-industrialisation	0.02193** (0.01141)	0.02775 (0.02398)	0.01019** (0.00521)	0.00965 (0.01061)	0.01419*** (0.00252)	0.00739* (0.00425)
LDC	-0.00106 (0.00435)	-0.00914 (0.00783)	-0.00121 (0.00177)	-0.004917 (0.00341)	-0.00009 (0.00101)	-0.00244* (0.00145)
Union Density	-0.00278 (0.00538)	-0.01695 (0.01213)	0.00521** (0.00271)	-0.00431 (0.00519)	-0.000379 (0.00121)	-0.00720** (0.00221)
Wage Centralisation	-0.50945** (0.17086)	-0.76739** (0.30383)	-0.14459** (0.06644)	-0.23149* (0.01310)	-0.08281* (0.05018)	-0.12365** (0.05671)
Civilian Government Employment	0.01330 (0.03261)	-0.00476 (0.04729)	-0.00500 (0.1594)	-0.00586 (0.02029)	0.001601** (0.00723)	-0.00805 (0.00841)
Female Labour Force Participation	0.03205** (0.01554)	0.04273 (0.02709)	0.01305* (0.00769)	0.01525 (0.01190)	0.00726** (0.00362)	0.00720 (0.00502)
Government Ideological Composition	-0.06997** (0.03234)	-0.16209*** (0.05162)	-0.02821* (0.01550)	-0.06645** (0.02282)	-0.01572** (0.00797)	-0.02799** (0.00969)
Effective Labour Tax Rate	-0.00235 (0.00370)	-0.03051** (0.01202)	0.00131 (0.00221)	-0.01157** (0.00531)	-0.00002 (0.00050)	-0.00619** (0.00220)
Generosity * SWR (**)	-0.25252** (0.10370)	-0.91634** (0.35211)	-0.10284** (0.03946)	-0.36633** (0.15488)	-0.03706 (0.02429)	-0.11906* (0.07863)
Generosity*CEWR	0.53688 (0.63852)	-0.56734 (1.41936)	0.10883 (0.29315)	-0.13227 (0.64657)	0.14501 (0.13242)	-0.08670 (0.25407)
Generosity*ASWR	0.44415** (0.18088)	3.06286** (0.97334)	0.16090** (0.08047)	1.23194** (0.43984)	0.16479** (0.04736)	0.56140*** (0.17374)
DGenerosity*SWR	-0.27142** (0.10329)		-0.17195*** (0.03940)		-0.06502** (0.02540)	
DGenerosity*CEWR	0.08604 (0.67942)		0.05030 (0.27809)		0.10123 (0.12693)	
DGenerosity*ASWR	0.45496** (0.21235)		0.07651 (0.10448)		0.20147** (0.06248)	
R-Squared (N)	0.6241 (179)	0.4206 (179)	0.5843 (179)	0.3953 (179)	0.6198 (179)	0.5706 (179)

Standard errors in parenthesis. Country dummies values not shown. (*) Model A refers to OLS panel corrected standard errors. (**) In this case generosity is decomposed between the effect of lagged variable and the effect of the first differences only in models A. Therefore generosity in model A keeps on being referred to its lagged version. Model B reports the results of two stage least squares instrumental variable estimation. In this case the effect of generosity is not decomposed.

TABLE 6

MARKET INCOME INEQUALITY - GENERAL AND INSTITUTIONAL MODELS

	General Model		Institutional Model	
	Model A	Model B	Model A	Model B
Lagged Dependent Variable	-0.88242*** (0.35638)	-0.74831*** (0.04519)	-0.86417*** (0.03566)	-0.47094** (0.15719)
Income per capita	-0.000525*** (0.0000361)	-0.00007 (0.00038)	-0.000511*** (0.00003561)	-0.00049 (0.00077)
Unemployment Rate	0.00029 (0.00035)	0.00045 (0.00102)	0.000333 (0.00043)	0.00152 (0.00261)
De-industrialisation	0.00288*** (0.00028)	0.00377*** (0.00110)	0.00314*** (0.00030)	0.00417* (0.00226)
LDC	-0.00031** (0.00012)	0.00063 (0.00038)	0.00030** (0.00013)	0.00166** (0.00078)
Trade Openness	0.00005 (0.00004)	0.00004 (0.00026)	0.00004 (0.0005)	-0.00071 (0.00052)
Union Density	-0.00096*** (0.00029)	-0.00261*** (0.00071)	-0.00120*** (0.00030)	-0.00104 (0.00126)
Wage Centralisation	-0.00261 (0.00569)	-0.01473 (0.01432)	-0.001318 (0.00531)	-0.01173 (0.02754)
Female Labour Force Participation	0.00306*** (0.00039)	0.00220* (0.00124)	0.00269*** (0.00045)	0.00288 (0.00291)
Government Ideological Composition	-0.00287*** (0.00076)	-0.00186 (0.00211)	-0.00318*** (0.00078)	-0.00048 (0.00403)
Effective Labour Tax Rate	-0.00026** (0.00010)	-0.00037 (0.00057)	-0.00019* (0.00011)	0.00080 (0.00060)
Generosity	0.2948** (0.01323)	0.09796*** (0.005026)		
DGenerosity	0.04287** (0.01413)	0.09936*** (0.03668)		
Generosity * SWR			0.01574* (0.00859)	0.01373 (0.04362)
Generosity*CEWR			0.07232*** (0.02174)	0.54594** (0.20591)
Generosity*ASWR			-0.02563** (0.0110)	-0.38808** (0.18990)
DGenerosity*SWR			0.04180*** (0.01276)	
DGenerosity*CEWR			0.05160** (0.02037)	
DGenerosity*ASWR			-0.02011* (0.01173)	
R-Squared (N)	0.8830(149)	0.8228 (149)	0.8770 (149)	0.4920 (149)

R-Squared (N)

Standard errors in parenthesis. Country dummies values not shown. (*) Model A refers to OLS panel corrected standard errors. In this case generosity is decomposed between the effect of lagged variable and the effect of the first differences. Therefore generosity in model A models is referred to its lagged version. Model B reports the results of two stage least squares instrumental variable estimation. In this case the effect of generosity is not decomposed.