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Centro de Estudios Avanzados en Ciencias Sociales (CEACS)

Juan March Institute

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Decentralization and income inequality

Author(s): Beramendi, Pablo
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Abstract: La coexistencia de varios niveles de gobierno dentro de un mismo espacio económico es un fenómeno cada vez más extendido. A ello contribuyen tanto los procesos de descentralización experimentados en la OCDE durante el último cuarto del siglo XX como la federalización de las instituciones políticas de la Unión Europea. Esta tesis analiza la interacción entre estos cambios institucionales y los procesos de distribución y redistribución de la renta. La descentralización afecta a la distribución de la renta porque activa políticamente las diferencias entre regiones en términos de la estructura de la desigualdad. Este argumento se construye a partir de la aplicación del teorema del votante mediano al estudio de la redistribución de la renta con varios niveles de gobierno. En la medida en que, para toda entidad territorial, las preferencias políticas sobre la redistribución dependen de las pautas de desigualdad existente en esa misma entidad, la decisión sobre el nivel de gobierno encargado de llevar a cabo las políticas redistributivas tiene consecuencias directas sobre el diseño de las mismas, y, por tanto, sobre la distribución de la renta y su nivel de dispersión. La naturaleza de las consecuencias distributivas de un cambio en la adjudicación del control de las políticas redistributivas depende de la estructura de la desigualdad pre-existente. En este sentido, la tesis demuestra que la descentralización no es necesariamente una institución que por sí genere necesariamente más desigualdad. El contraste de las hipótesis acerca de las consecuencias distributivas de la descentralización se lleva a cabo combinando análisis de datos de panel sobre una base de datos de la OCDE con micro-simulaciones utilizando el Panel de Hogares de la Unión Europea (ECHP). La propia existencia de efectos distributivos atribuibles a diferentes diseños institucionales introduce una segunda dimensión en la relación entre descentralización, redistribución y desigualdad de renta. En esta segunda dimensión, la elección de instituciones pasa a depender de la estructura de la desigualdad en virtud de un proceso político en el que los distintos actores implicados anticipan los efectos previsibles de las distintas opciones institucionales, los contrastan con sus posiciones iniciales, y determinan así sus preferencias sobre el nivel de gobierno al que adjudicar el control sobre las distintas políticas del Estado del Bienestar. En otras palabras, las instituciones son endógenas con respecto a la estructura de la desigualdad. En la tesis se argumenta extensamente que el mecanismo central de esta segunda dimensión radica en la existencia (o no) de una comunidad de riesgos entre regiones en las distintas políticas redistributivas. Allí donde dicha comunidad existe (bien sea porque los riesgos asegurados por una política sean de carácter universal, bien sea por la existencia de altos niveles de movilidad interterritorial) la

centralización de la redistribución es el diseño más probable. Y viceversa, cuanto menor sea esa comunidad, más probable resulta que la descentralización sea la opción preferida de la mayoría de los actores implicados. Este argumento se construye a partir de un modelo teórico en el que se establece formalmente cómo las diferencias interregionales en términos de renta, los riesgos inherentes a la especialización de la economía regional y la existencia de shocks externos a las regiones afectan a las preferencias políticas a favor de distintos diseños institucionales. El contraste de las hipótesis derivadas de esta segunda línea argumental se realiza combinando distintas técnicas cuantitativas de análisis de datos de panel con dos estudios de caso en los que se analiza en qué medida las instituciones se ajustan realmente a cambios exógenos a la estructura de la desigualdad. Los casos seleccionados son el ajuste de los programas de redistribución interterritorial en Alemania tras la Reunificación y el estudio comparado del diseño territorial de las prestaciones por desempleo en Canadá y Estados Unidos durante la Gran Depresión. Esta segunda dimensión del argumento identifica el proceso de selección que diferencia las condiciones específicas en las que la elección institucional se convierte en un mecanismo reproductor de la desigualdad (generando una asociación observable entre descentralización y desigualdad) de aquellas otras circunstancias en las que la descentralización es neutral o incluso facilita un incremento de la redistribución.

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Instituto Juan March de Estudios e Investigaciones

Pablo Beramendi Alvarez

**DECENTRALIZATION AND
INCOME INEQUALITY**

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Pablo Beramendi Alvarez (Madrid, 1971) es licenciado con Premio Extraordinario en Ciencias Políticas y de la Administración por la Universidad de Santiago de Compostela y Doctor por la Universidad de Oxford (sección Estudios Sociales- Política Social). Formó parte de la décima promoción de estudiantes del Centro de Estudios Avanzados en Ciencias Sociales del Instituto Juan March de Estudios e Investigaciones, donde obtuvo el título de Master en 1999. Realizó su tesis doctoral bajo la dirección de los profesores Anthony B. Atkinson en Nuffield College (Universidad de Oxford) y Gøsta Esping-Andersen en el propio Centro. Actualmente trabaja como Senior Research Fellow a la plantilla de investigadores de la Institutions, States and Markets Unit del Wissenschaftszentrum, Berlin.

ABSTRACT
DECENTRALIZATION AND INCOME INEQUALITY

Political power is being reallocated across territorial boundaries. Traditionally centralized polities are either decentralized or on their way to decentralization. Likewise, European nations are engaged in a clear process of building a common rule both respectful to and compatible with their own peculiarities, namely a process of federalization. The arena for contentions about *who gets what* is being reshaped across industrial societies. As a result, the number of political entities in which several levels of government share a common economic space has increased. This dissertation analyzes how these processes interact with the politics of redistribution and inequality.

Decentralization matters for inequality because it activates territorial differences concerning the structure of inequality and the politics of redistribution. Decentralization triggers a political process by which the units are able to express a different set of preferences for redistribution, which are in turn a function of the regional structure of inequality. If alternative institutional designs make so much of a difference there are reasons to believe that, in the context of multilevel governance, contentions about the institutional design of redistribution are themselves contentions about who gets what. Thus, there is a second, hidden dimension to the relation between decentralization and inequality, for such contentions make decentralization endogenous to the territorial structure of inequality by virtue of a political process linking the former to the preferences about the institutional design of redistribution. At the core of the argument lies the idea that, both in origin and in process, the driving force of the relation between decentralization and inequality is the scope of risk-sharing between regions. Hence the study of the relation between decentralization and inequality can be seen as a story of how one dimension of inequality (territorial structure) affects another (interpersonal inequality) via the institutional design of redistributive policies.

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CHAPTER 1

DECENTRALIZATION AND INEQUALITY: AN INTRODUCTION

Political power is being reallocated across territorial boundaries. Traditionally centralized polities are either decentralized (Spain) or on their way to decentralization (UK), whilst formerly stable institutional agreements are being revisited in almost every federal country. Last but not least, European nations are engaged in the process of building a common set of rules both respectful to and compatible with their own peculiarities, namely a process of federalization¹. The arena for contentions about *who gets what* is being reshaped across advanced industrial societies. As a result the number of political entities in which several levels of government share a common economic space has increased. This dissertation analyzes how such a process interacts with the politics of redistribution and inequality.

Throughout the thesis I treat federalism and decentralization as interchangeable. In the pure tradition of constitutional law this assumption is contestable. However, as I shall argue in Chapter 4,

¹ For an overview of these processes see Elazar (1994), OECD (1997), Wright and Hesse (1996), Dente and Kjellberg (1988), Elazar (1995: 5-18) and Amoretti and Bermeo (2002).

when it comes to the political economy of redistribution, and even from a purely constitutional point of view, there is no clear dichotomy between federal and non-federal nations. Federalism never resembles a set of given and stable institutional conditions and, in that sense, countries can be ranked in a continuum that goes hypothetically from extreme centralism to extreme levels of decentralization. None of the extremes is ever represented by any country. Therefore I will propose a measurement of decentralization based on fiscal data. As put by W. Oates (1972: 563-564), "what matters is simply that decisions regarding levels of provision of specific public services for a particular jurisdiction [...] reflect to a substantial extent the interest of the constituency of that jurisdiction. [...] Constitutional structure assumes importance only to the degree that it affects the responsiveness of the provision of local services to local preferences. In fact, to approach this issue is to treat federalism not in absolute but in relative terms. [...] We can envision a spectrum of structures of the public sector along which the difference is essentially one of degree rather than kind".²

1.1.- The existing view

There exists a widespread view that decentralization is associated with a lower equilibrium level of redistribution and hence higher levels of income inequality (Wildavsky 1984: 55-73). Indeed this idea brings together rather distant schools of comparative research. A widely shared understanding among comparative political economists is that the fragmentation of political power reduces the size of the welfare state and therefore limits the scope of redistribution. Fragmentation is considered to be a function of several factors, among which federalism/

² For a recent argument in favor of treating federalism as a process rather than a fixed set of institutions, including a comparative analysis of the complex measurement issues involved, see Rodden (2003).

decentralization³ are prominent in that their very existence institutionalizes a system of veto points that enables defenders of specific territorial interests to object, and eventually block, nationwide redistributive endeavors. Other things being equal decentralization implies less redistribution. This argument is based on the results of two areas of empirical research, namely historical case studies of the development of the welfare state in the United States⁴ and quantitative cross-national comparisons (Crepaz 1992: 139-168, Huber et al. 1993: 711-749, 2001; Castles 1998; Cameron 1978: 1243-61; Castles 2000: 177-196; Keman 2000: 196-228; Lancaster and Hicks 2000: 228-243; Lane and Ersson 2000: 77-102)⁵. A similar logic has been applied to the analysis of welfare reform in North American federations. In this context scholars tend to see in the current processes of decentralization a *hidden* trend towards welfare state curtailment⁶. For this view has become the consensus within the field, the analysis of the interaction between decentralization, redistribution and inequality has therefore been a relatively under-explored area.

The situation is rather different in the second major line of research relevant to our concerns, namely the economic analysis

³ For data on the correlation between federalism and fiscal decentralization see Lane and Ersson (2000:77-102).

⁴ See, among others, Skocpol and Orloff (1984: 726-750), Amenta E. and Carruthers B.G. (1988: 661-678), Pierson (1995: 449-478), Quadagno (1994), Skocpol (1992) as well as the recent insights from institutional economic history by Alston and Ferrie (1999: 49-74 and 118-152). For a recent formalization on the determinants of the welfare state in the USA see Alesina, Glaeser and Sacerdote (2001). For similar, albeit older, insights see Lowi (1984:37-55).

⁵ See also Pampel and Williamson (1988: 1424-1456), Hicks (1988: 677-704), Hicks and Kenworthy (1998: 1631-1673), Hicks and Misra (1993: 668-710) and Hicks and Swank (1992: 658-674).

⁶ This argument is mostly based upon the recent literature on the processes of devolution to the states/provinces in Canada and the USA. On the former one, see Banting (1987, 1992, 149-170; 1995), Courchene (1993, 83-135; 1994) and Kenneth (1998). On the latter, see Peterson (1995), Volden (1997: 65-97), Rich (1993) and Peterson et al. (1998).

of institutions and public finance. In fact, within the economic approach, it is more accurate to distinguish between at least two opposite traditions, both of them combining normative and, albeit to a lesser extent, positive approaches.

The first one stems directly from normative public choice and overlaps with recent contributions from game-theory oriented political analyses of institutions (Buchanan 1970, 1995: 19-27; Inmand and Rubinfeld 1997: 73-105; Qian and Weingast 1997: 83-92; Weingast 1993: 286-311; 1995: 1-31; Weingast et al. 1995: 50-81). Briefly put the core of this argument is that federalism is desirable because it is an efficiency enhancing device, and this is so for two reasons. First, bureaucracies compete to fulfil the needs and match the tastes of a pool of voters that can otherwise *vote with their feet*. Secondly, provided that taxation is distortionary and factors can also vote with their feet, governments are prevented from growing unnecessarily. In other words, federalism promotes efficiency because it prevents redistribution and thus reduces the potential for public sector failures. While this reasoning has been the object of numerous criticisms, the point to note here is that their assessment of the desirability of decentralization overlaps with the diagnostics of the students of the welfare state concerning its consequences for redistribution⁷.

Actually, the public choice conception of federalism emerges historically as a reaction to the position held previously by those economists attached to the *market failures* paradigm (Musgrave 1997: 65-72, Oates 1987: 67-91; Gramlich 1973: 21-57; 1987: 309-327), which normatively takes an opposite view concerning

⁷ This overlap finishes, however, when it comes to assessing the relation between decentralization and inequality. While in the comparative political economy of the welfare state it is implicitly assumed that less redistribution implies more income inequality, the seconders of the different versions of the market preserving theory argue that, in the medium-long term, by facilitating a non distorted functioning of the market, federalism will be associated with enhanced economic growth and, according to the Kuznet's curve, with an increasingly equal distribution of income (the second half of the inverted U).

the virtues of different institutional designs. A centralized fiscal system is supposed to achieve more efficient outcomes by internalizing the high number of externalities inherent to both the expenditure and the revenue sides of fiscal policy (Wildasin 1991: 757-774). The problem of mobility of taxable factors, namely labor, financial and, to a lesser extent, physical capital plays a central role in this process; its implications have been the object of a long and quite sophisticated effort in economic modeling as well as widely known contributions from normative public economics.

Tiebout's work⁸ (1956:416-24), even though based on rather extreme assumptions (Stiglitz 1983:17-55; Rose-Ackermann 1983: 55-85; Bewley 1981: 713-740), proves to be a useful point of departure in demonstrating the importance of mobility to the performance of federal systems (Panizza 1999: 97-139). Provided that the demand for local public services is income elastic, that these services are financed by income taxes (Oates 1972, 1991) and that there is perfect mobility, Tiebout's model predicts that

⁸ Let me recall the basic assumptions of this model: consumer-voters are fully mobile and will move to that community where their preference patterns are best satisfied; consumer-voters are assumed to have full knowledge of differences among revenue and expenditure patterns and to react to these differences; there are a large number of communities in which the consumer voters may choose to live; restrictions due to employment opportunities are not considered; the public services provided exhibit no external economies of diseconomies between communities; there is an optimal community size, which is defined as "the number of residents for which the bundle of services can be produced at the lower average cost" (p.569) and finally, it is assumed that communities below the optimum size seek to attract new residents to lower average cost. In this perfect scenario the process and policy implications are as follows: by voting with the feet individuals reveal their true preferences, reducing the problem of information about tastes faced by the government, and promote an efficient allocation of resources in a close fashion to the way markets provides private goods; but at the same time individuals engage themselves in a process of sorting out across jurisdictions according to the preferences for different local public goods.

communities become homogeneous in income and heterogeneous in capacities. In so far as public goods can be provided locally, without externalities, and citizens are perfectly mobile, redistribution within regions is not even an issue⁹. Mobility eliminates the need for vertical redistribution, for communities are then defined in terms of the types/scope of public goods provided. Tiebout's model provides a benchmark case. To the extent that the assumptions of the model fail or are relaxed, the interaction between mobility and redistribution is of a very different nature (Zodrow 1983).

Positive public economics has explored systematically the patterns of this interaction with different degrees of complexity. As early as 1968, Oates concluded that, if the assumption of the absence of externalities between communities is relaxed and redistribution is considered to be a national rather than a local public good, any "attempt by a local government to undertake an aggressive distributive programme is likely to have disastrous results." (p. 45) Wealthy residents would move to another jurisdiction in which the fiscal treatment is more favorable, whereas the region launching the programme would become a *welfare magnet* (Peterson and Rom 1990) attracting low income, poorly qualified people. For any given region, increasing redistribution would generate a double positive externality for its neighbors, which clearly undermines the incentives of any single jurisdiction to pursue such a strategy. As put by Epple and Romer (1991: 828-858), mobility implies that the distribution of income is itself endogenous, i.e., the amount of redistribution in each region and each individual's choice of residency are set together in equilibrium. In these circumstances mobility clearly limits the extent of redistribution, by restricting the tax/transfer choices of states and local governments. To put it with Prud'homme "any attempt of decentralizing redistribution is self-defeating" (1995)

⁹ By contrast inter-community redistribution is imperative in this scenario (for a proof see Buchanan 1950: 583-599).

because of the automatic triggering of a *race to the bottom* in the levels of redistribution provided by sub-national units.

A large number of models have been developed along these lines, distinguishing the implications of the mobility of labor from those of the mobility of capital. As for mobility of labor, Oates and Brown (1987:67-91) modeled a two region Nash equilibrium under conditions of majority voting, the equilibrium being the rich being altruistic towards the poor, the poor mobile and the tool to be used redistributive taxation. Under these conditions redistribution tends to be lower, except in some cases for the regions losing some of its poor. Therefore an intervention by the general government is required in order to prevent free-riding from undermining redistribution. Likewise, Epple and Romer (1991: 828-858) and Hansen and Kessler (1999) reach standard conclusions in the field: assuming that majority voting is the decision procedure and migration is cost-free¹⁰, local redistribution leads to sorting the population with the poorest households located in the communities providing higher levels of redistribution. In other words, redistribution operates as a welfare magnet for the poor (Peterson and Rom 1990). Finally, Glatzer and Konrad (1994: 278-291) model a small economy where the rich are mobile, the poor are immobile and migration has some costs. Majority voting is again the procedure for decision making and the tool at the hands of the incumbents is redistributive taxation. From their model it follows, once again, that redistribution is constrained by mobility¹¹, even if the latter is itself modeled as a function of income.

¹⁰ In Epple and Romer's paper (1991) the instrument is the redistributive taxation of housing. Raff's and Wilson's model (1997: 407-427) does not assume majority voting as their objective function. In turn, they adopt the utilitarian welfare function involving only natives.

¹¹ Different versions of the same argument continue to accumulate in the specialized literature. Posse and Wissink (1997) reach similar conclusions regarding redistribution, by modeling a two region full information Nash equilibrium with mobile labor, immobile welfare recipients, immobile capital and cost-less mobility. The objective

When looking at the social and economic consequences of the mobility of capital, the landscape hardly changes. Oates and Schwab (1988) go as far as to state that decentralized redistribution is impossible in a small economy under conditions of capital mobility, labor immobility and inputs publicly provided. Lejour and Verbon (1996:495-514) modeled a two regions Nash equilibrium under similar conditions but, after including in the model the costs of migration, they attenuate the conclusions: redistribution is expected to be lower (but possible) and social insurance sub-optimal. When analyzing minimum wages in a two regions Nash equilibrium with majority voting where capital is mobile and labor immobile, Gabszewicz and van Ypersele (1996:193-208) obtain similar results. Finally, Christiansen et al. (1994: 289-309), considering immobile labor and mobile capital, come to argue that as long as redistribution is funded through source-based capital taxation, as opposed to residence based taxation, redistribution between capital and labor is impossible.

The same general conclusion continues to hold: redistribution is, other things being equal, expected to be lower. The more the duty to redistribute is at the hands of the lower levels of government, the more mobility of capital/labor will constrain the capacity of regional incumbents and, therefore, the less the scope and ambition of the redistributive efforts in comparison to countries, in which the political capacity to make choices on the allocation of resources is centralized, i.e., not carried out subject to the externalities among regions and the intention of regional incumbents to free ride on each others' efforts.

To sum up, there seems to be just one consensus among all three schools, namely the idea of an existing trade-off between autonomy and equality, between decentralization and

function in this case is the utilitarian social welfare function. Finally, recent papers by Leite-Monteiro (1997: 229-244) introduced in the model of a two regions Nash equilibrium the distinction among types of workers by skills. Migration is assumed to generate costs and the objective function is the utilitarian social welfare one (only involving natives).

redistribution, between the welfare state and the existence of overlapping layers of authority. Indeed if this consensus happened to fully account for the relation between decentralization and inequality, two rather unpleasant implications would follow: this dissertation would be unnecessary since there is not much point in going back to issues on which everybody agrees and, secondly, a new wave of *institutionally induced inequality* is to be expected in the light of the processes of institutional change undertaken by most advanced industrial societies. But that only would be the case if the consensus happened to be fully grounded and covered the whole story.

1.2.-The consensus revisited

In this section I argue that although , under a specific set of conditions, an empirical association between decentralization and lower levels of redistribution (and *ceteris paribus* higher levels of income inequality) may be expected, and indeed found, there are several issues casting doubt on the inferences to be drawn from it. In what follows, I present the reasons why I think previous contributions have provided an incomplete and, in some cases, simply misleading account of the causal processes leading to such association.

This claim is based on a two-fold criticism of previous approaches. For a start the above presented consensus is built on the assumption of political institutions being exogenous to the politics of redistribution, which imposes from the beginning a rather limited view of the relation. A second major shortcoming is that all of the above mentioned approaches share a good deal of naïvety in their analysis of the interaction between redistribution and factor (capital, labor) behavior. Both problems are very much interlocked.

Exogeneity

The understanding of political institutions as a set of given, exogenous, factors underlies the view that decentralization has a negative effect on redistribution and a positive one on inequality. However, when focusing on the relation between political institutions and social outcomes, this may be far too extreme of an assumption, potentially leading to misconceptions in the causal ordering of the processes. This problem may be particularly relevant to our discussion.

Exogeneity implies, in this context, the assumption of unidirectional causality. Hence any positive correlation between decentralization and inequality is interpreted as the former causing the later¹². A major weakness of the idea of a trade-off lies precisely here, in that a snapshot is taken for the entire relation. Put differently, the believers in the trade-off seem to assume away the possibilities of (a) a third factor related both to decentralization and inequality selecting them and therefore generating the correlation and/or (b) the possibility of decentralization being itself a function of inequality, as a part of a more complex ongoing relation. If either of the two happen to be true, then the story to be told about the correlation is of a rather different and more complex nature. And in fact, at first sight, there is no reason to regard any of these two possibilities as blatantly implausible. History matters and institutions do not come to exist only for efficiency reasons, but also as the outcome of specific distributive conflicts (Williamson 1985). This all points to an analytical strategy built on the assumption of decentralization being an exogenous determinant of inequality leading to conclusions that are partial and potentially misconceived. If there is any reason to believe that the conditions under which a particular institution emerges (in this case decentralization) are not independent from the conditions generating the outcome we are trying to relate it to (in our case,

¹² This is for instance the logic underneath the conclusions Huber, Ragin and Stephens (1993: 711-750) and Huber and Stephens (2001) draw upon their index of constitutional structure.

income inequality), then any account of the relation must cope with a more complex set of causal relations since, under these circumstances, the net impact of the institution of interest is not straightforwardly distinguishable from other circumstances surrounding it.

Let me take as an example the establishment of a specific set of veto points. According to the existing view, there is little doubt that they will help blockade proposals favoring broader redistribution. They also correlate with a certain degree of inequality. However it will not be possible to claim whether or not they actually cause an increase in inequality until we can establish that their selection is not a function of other factors also affecting inequality or, indeed, the very structure of inequality itself. This may be a very hard task, if only because, as I shall outline below and develop in full detail in Chapter 2, there are good reasons to hold the belief that decentralization is in fact endogenous to the territorial structure of income inequality, hence calling for a more careful theoretical and methodological approach to the relation.

Interplay

A second, related, issue casts doubt on the consistency of the existing consensus concerning the relation between decentralization, redistribution and inequality. The issue regards the more or less explicit naïvety in the conception of the interplay between redistribution and the behavior of the factors of production. Naïvety is a function of three assumptions shared by the traditions of research presented in the previous section. For a start, even though some of the models discussed above include imperfectly mobile factors,¹³ their treatment of the issue of mobility is still quite simplistic. The degree of specificity of labor and capital is unevenly distributed across regions, and that is generally overlooked in the models. Secondly actors' preferences are derived from the assumption that they maximize only current

¹³ Glazer and Konrad (1994) consider for instance that the poor are not as mobile as the rich, linking mobility to income.

after tax income. No other element enters the utility function when deciding to move or stay put. Hence, capital and labor will always move to those regions where taxes are lower, while the dependent population will move, following an identical logic, to those jurisdictions providing the most generous benefits. These models do not consider a spatial dimension in the motivations and preferences for redistribution that would stem from their linkage to different regional production systems. To put it differently, different types capital and labor across regions appear to have similar preferences both for redistribution and, albeit to a lesser extent, similar capacities for geographical mobility.

This set of assumptions is far from reasonable, not only in that it is highly unrealistic (and thus excludes a large share of the processes to be accounted for : Migué 1997: 235-254), but also in that it is predetermining the implications and predictions derivable from the model. This model excludes from the very beginning the possibility that under a specific set of conditions, the final outcome of the interplay between mobility and redistribution differs. In this regard they are deterministic¹⁴. Therefore the fact that the empirical evidence on the hypotheses derived from these models is at best ambiguous is not at all surprising¹⁵. Besides this

¹⁴ This point is also valid at the normative level. The predetermined character of the predictions of the standard approaches can be illustrated by analyzing the impact that a relaxation of the underlying assumptions has on their normative implications. If we allow for regions to have different preferences and motivations about redistribution, considering for instance that they may have different labor market structures, then centralization may no longer be the best option in pure efficiency terms: its positive effects (most prominently the internalization of externalities) need to be balanced against the existing possibility of the common policy being inaccurate for the functional needs of different regional markets. (For insights along these lines see Bolton, Roland and Spolaore 1996: 697-705, Alesina and Perotti 1998:989-1008 , Perotti 2001: 596-610).

¹⁵ A very illustrative example of this ambiguity is provided by the conflicting findings about the recent experiences of welfare reform in the USA. Mar Carl Rom, Paul Peterson and Ken Scheve offer evidence of a re-emergence of a kind of "race to the bottom" among American states

kind of model has proved to be incapable of accounting for significant differences in the development of redistributive policies within decentralized /federal nations, let alone for their changes over time. Why are some redistributive policies more centralized than others in federal countries? Why do we observe that Canada and the USA, sharing similar economic models and, currently, equivalent levels of factor mobility, nonetheless have significant differences in the scope of centralized redistribution and the levels of inequality (Card and Freeman: 1996)? Why are veto points used only under certain circumstances? The very extreme assumptions of the conventional model render it incapable of accounting for this variation, pointing to the fact that much of the politics of redistribution and inequality in decentralized countries is still in darkness.

In order to shed light on it we must resort to an analytical approach constructed on alternative foundations. A richer account of the preferences for redistribution and geographical mobility of labor and capital ought to be considered: different types of capital and labor must be allowed to have a diverse array of motives and preferences for redistribution. Accordingly, in our model, capital and labor should be allowed to vary in their interests, motivations and preferences for redistribution across different regions. In other words, public goods demand should not be considered spatially uniform (Pauly 1973: 35-58). Furthermore mobility is not a choice available to everybody nor it is always the first preference. Only by opening the *black box of factors and regions' preferences for redistribution* will it be possible to develop a more comprehensive

during the period 1976-1994, in relation to the substitution for the TANF of the AFDC program during recent Clinton's reforms. According to them "the welfare guarantee offered to families under the AFDC program by individual states was sensitive to the guarantee offered by their neighbors" (1998 p. 37). Alternatively Mark Schröder (1995 p. 183-191) found, doing research on the same program for the period 1982-1988 and using a similar estimation technique, that "in almost all models the price elasticity for welfare benefits is small", even pointing to some cases in which the effects were positive.

model of the politics of income redistribution in decentralized contexts and hence fill in the many gaps affecting the conventional view.

Departing from these assumptions towards more realistic settings, it can be shown that the expected link between decentralization and lower levels of redistribution is only one among several possible scenarios. This, in turn, brings me back to the previous point concerning exogeneity. If preferences about redistribution vary in response to differences in the regional economic structure and resources are scarce, it seems reasonable to think that an important share of the politics of redistribution is shifted, in the presence of several levels of government, to the politics of the institutional design itself. Consequently a more careful consideration of the interaction between redistribution and factors behavior weakens even further the assumption of exogeneity as it stands in the notion of a trade-off between decentralization and equality.

The joint consideration of these issues points to the fact that a good share of the internal working of the relation between decentralization and inequality remains unpacked to a large extent. Several questions about it lack a convincing answer. Why should we expect that there is a relation at all between the allocation of power to different levels of government and the distribution of income? Under what conditions should we expect a positive relation between decentralization and inequality and why? Are there any circumstances in which the conventionally assumed trade-off between autonomy and equality can be overcome? What are the intervening mechanisms in this relation? What is their causal sequence and how can we isolate the different elements?

In this dissertation I put forward an attempt to answer these questions, i.e., to explain how the relation between decentralization and inequality works. In so doing I intend to contribute to a better understanding of the politics of income redistribution in the context of fragmented political power. More generally, by identifying and explaining the different sequences in the relation between decentralization and inequality, this

dissertation aims to make a contribution to the study of the relation between political institutions and distributive outcomes. Finally, provided that those who argue that institutions are partly a function of their expected distributive consequences are not misleading, the implications of this research aim to be of some use in the task of squaring the welfare state in the circles of the ongoing process of decentralization.

1.3.- An Outline of the Argument and Structure of the Thesis

The formal construction of the argument is carried out in *Chapter 2*, completing the theoretical underpinnings of the dissertation. Thereafter, Part II (Chapters 3 and 4) and Part III (Chapters 5 and 6) are devoted to testing the hypotheses derived from the different stages of the argument. These hypotheses relate to the processes that should be observed when analyzing the different aspects of the relation between decentralization and income inequality. The argument of the thesis is as follows.

Even if at risk of revisiting common sense, I shall start by arguing that if decentralization matters for inequality, it is primarily because it activates territorial differences concerning the structure of inequality and the politics of redistribution. Put it very briefly decentralization increases the number of actors and alters the nature of the conflicts about who gets what. The scope and direction of the distributive consequences of decentralization are themselves a function of the territorial distribution of the factors it triggers. In this sense, as will be seen in Chapters 3 and 4, they are more open and difficult to establish than is usually considered by the literature reviewed in the previous sections. Whatever the impact of decentralization on the distribution of income may be, it is to a large extent a function of the internal structures of inequality within regions and their combination. Decentralization is expected to have either of two distinct effects: a “between

levels" effect and a "homogeneization/diversification" effect¹⁶. The former implies a change in the levels of redistribution in relation to the union, but no interregional differences. The latter implies both outcomes. Depending on the pre-existing structure of inequality these two effects can work in either direction, i.e., increasing or decreasing redistribution. For instance if there is a "socialist" and a "conservative" region, then decentralization will increase redistribution in the former. All in all, this points to the fact that the net effect of an institutional change on the overall levels of redistribution is not unique. In other words decentralization does not necessarily lead towards higher (or lower) levels of income inequality. However this is only part of the story.

Decentralization matters because it triggers a political process by which the units are able to express a different set of preferences for redistribution, which in turn are a function of the regional structure of inequality. If alternative institutional designs make so much of a difference there are reasons to believe that, in the context of multilevel governance, contentions about the institutional design of redistribution are themselves contentions about who gets what. There is a second, hidden dimension to the relation between decentralization and inequality, for such contentions make decentralization endogenous to the territorial structure of inequality by virtue of a political process linking the former to the preferences about the institutional design of redistribution. Let me give a preview about the underpinnings of this dimension, analyzed in detail in the second half of Chapter 2.

At the core of the argument lies the idea that, both in origin and in process, the driving force of the relation between decentralization and inequality is the scope of risk-sharing between regions. By risk sharing I mean the extent to which the profile of the needs and the potential target for any given redistributive policy is common across regions. Risk sharing is

¹⁶ The nature of these two effects as well as the differences between them is dealt with at length in the first section of the next chapter.

more formally modeled as a function of two sets of factors: (a) both regions have similar economic and labor market structures and, therefore, they share a similar structure of inequality. By structure of inequality I mean conventionally the extent to which the distribution of income is partitioned along specific dimensions like households, ethnic groups or regions (Cowell, 2000: 123-128). To the partition along the latter I will refer repeatedly in this dissertation as “territorial structure of inequality”. For any given territorial unit, the latter is a function of the combination of its income levels and distribution, its individual specific risks and its units’ specific risks. The detailed definition of each of these elements is offered in Chapter 2; or (b) there are large spillovers /externalities between the regions even if their regional economic structures differ. As I shall explain at length below these two factors are a function both of the heterogeneity in the income distribution across regions and the degree of regional specialization of the economic activity.

Regarding factor (b) the model developed in the next chapter argues that the scope of risk sharing, and therefore the rationale underlying (de)centralization, is not independent of the second order effects of redistributive policies, in particular to factors behavioral responses in terms of geographical mobility¹⁷. In other words, there is a feedback effect that links the two sequences of the causal relation. Once the institutional design has been adopted, its distributive consequences may, depending upon its second order effects, either reinforce the current system or, in the medium run, alter the levels of risk sharing and modify the incentive structure underlying the institutional design. And so the process starts over again in a sequence in which the different choices concerning the territorial design of redistributive policies are at

¹⁷ Redistributive policies and institutional choices generate behavioral responses by market actors that in turn modify themselves the distribution of income after the intervention. Throughout the thesis I will refer to these behavioral responses by market actors as second order effects.

best unstable equilibria, potentially affected by the changing nature of the underlying structure of inequality.

Thus the relation between decentralization and inequality is not so much the result of the former causing the latter, as argued conventionally, but rather the result of a sequential process in which the two sides of the relation affect each other in different, analyzable, ways. From this perspective it is clear from the beginning that the hypotheses derived from it concern the distributive effects of decentralization as much as the impact of the structure of inequality on the territorial allocations of the powers to tax and transfer. Henceforth the empirical analysis of the dissertation is developed in two sections, each of them focusing on one direction of the relation of interest. Following the sequence of the theoretical argument Part II is devoted to analyze the distributive consequences of decentralization, while Part III focuses on the empirical study of the far less explored issue of how the structure of inequality shapes the institutional design of redistribution.

Grasping the distributive consequences of decentralization requires one to offer an answer to the question of what would the distribution of income be like in country X if, *ceteris paribus*, it were to be decentralized? However, because of endogeneity and the presence of second order effects, this counterfactual case does not exist in the real world. This poses several methodological challenges. Suppose country X is split into three regions and that, by knowing the distribution of income in X1, X2 and X3, one can predict how much redistribution there is going to be in each of these regions. Moreover, assume that decentralization does not affect other features of the social and institutional context of redistribution (like the party system for instance). Under these conditions, if market actors did not happen to react, the distributive effects of decentralizing X could be worked out straightforwardly. Alternatively suppose, much more realistically, that market actors do indeed react to the levels of redistribution provided by X1, X2 and X3, provoking a second order redistribution on the pre-tax income in each region. Furthermore

suppose that a change towards decentralization interacts with a number of other determinants of the outcome of interest. In this context the final distributive effect of decentralizing X, i.e. the impact of the institutional change if it were exogenous, is a lot more difficult to ascertain.

After analyzing in detail the magnitude of second order effects in the OECD, *Chapter 3* discusses what kind of methodological strategies are best in order to assess the distributive consequences of decentralization. It comes to conclude that even if regression analyses on observables may be illuminating for some aspects of the relation of interest, the proper construction of a counter-factual case requires an alternative methodology, namely simulations on micro-data. Even though there is a potential criticism that it is an empirical exercise on a process that has not actually taken place, the consequences of decentralization for the distribution of income cannot actually be identified and empirically analyzed in any other way. Simulations are the only tool that allow us to impose the highly restrictive assumption that the only thing that has altered the data, in relation to the status quo, is the intervention of interest. All other intervening processes, including second order effects, can be safely assumed away. Such an assumption cannot be taken for granted when studying the pattern of association between decentralization and inequality on the basis of a time series cross-sectional dataset of non-randomly selected observations.

Thus *Chapter 4* uses both regression analysis and micro-simulations to assess the distributive consequences of decentralization in the OECD. Using microsimulations, the strategy for capturing the impact of decentralization consists of building a counterfactual scenario in which decentralization is absent. This logic as well as the data available (the European Community Household Panel) suggest analyzing the issue by simulating an imaginary European federation in which

redistributive policies happen to be centralized¹⁸. The benchmark case is an analysis of the distribution of income as of now and decentralized welfare policies are those policies currently developed by national welfare states. The difference between the benchmark and the simulated cases in terms of their distributive consequences is identified as the effect of the institutional design on the distribution of income. In order to do this a two-fold strategy is followed: (a) first a set formed exclusively by countries with similar welfare models (EU3 federation) is identified and integrated in order to facilitate the test of the “between levels” effect; (b) In a second step, more countries are integrated and higher diversity among welfare models is allowed (EU 13 federation) aiming at testing for the “homogeneization /diversification” effect. On the basis of the results of these two comparisons it is argued that the distributive consequences of decentralization depend upon the combination of the nature of the centralized policy, the distance between the centralized policy and the policies of the units and finally the specificities of the distribution of income in the units. The results themselves also show that the combination of these three factors can produce very different outcomes. However, they also show that not all the combinations are equally feasible from a political standpoint, which thereby builds a bridge towards the final section of the dissertation.

Part III (Chapters 5 and 6) carries out the empirical analysis of the hidden dimension of the relation between decentralization and inequality, namely the impact of the structure of inequality on the territorial design of redistribution. For reasons to be discussed at length in the introduction to Part III both chapters combine an array of pooled time series cross-sectional estimations with in depth case studies of particularly relevant experiences. More substantively their content can be summarized as follows. *Chapter*

¹⁸ This logic is also imposed by the fact that the ECHP is the only available source to perform this kind of analysis. For an introduction to micro-simulations using the ECHP see Sutherland (2001).

5 analyzes the extent to which institutions are themselves a function of inequality or, to put it more precisely, the extent to which the territorial design of redistribution is a function of the territorial structure of inequality. Such a claim can be tested in a two-fold way. In general terms, if the model is correct, a positive relation between regional income disparities and decentralization should be found even after introducing the relevant controls. More specifically, for any country exposed to a sudden change in its structure of inequality, an adjustment in the territorial design of redistribution should be observed. An in depth analysis of this expectation is undertaken in the second half of Chapter 5 by analyzing the evolution of the German system of inter-territorial redistribution after the 1989-90 process of Re-Unification.

In turn *Chapter 6* is concerned with a more specific claim in the argument, namely the idea that the scope of risk sharing is a major driving mechanism in the relation between decentralization and income inequality. In order to test it, this chapter presents an analysis of the major factor linking decentralization and the distribution of income, namely the relation between decentralization and redistribution. In doing so, it tests the following implication of the model: if it is the scope of risk sharing that is driving the relation, we should observe, at the aggregate level, that the impact of decentralization on redistribution varies by policy depending on the degree of territorial concentration of risks each particular program is supposed to deal with. At the extreme, decentralization should have no aggregate effect on pensions since they provide insurance against risks of a universal nature, while at the same time it should have an effect on policies more clearly related to different regional labor market regimes, like the personal income tax structures, unemployment benefits, minimum wages and, even more locally, social assistance. Furthermore if the design of redistribution is a function of the scope of risk sharing between regions, it should also be observed that if any given policy faces two different territorial distributions of risk, its institutional design should vary accordingly. This expectation is examined via a comparison of the

design of unemployment insurance benefits in Canada and the USA in the context of the Great Depression. Incidentally, this comparison provides yet another test of the claim that a change in the structure of inequality leads to a change in the territorial design of redistribution. And, more importantly, it helps tackling empirically the importance of the selective patterns of inter-regional mobility for the scope of risk sharing between regions and, eventually, for the territorial design of redistribution. Finally, the conclusions (*Chapter 7*) gather the major findings of the dissertation, and discuss both their implications and limitations, pointing to complementary lines of research.

CHAPTER 2

INEQUALITY, INSTITUTIONAL DESIGNS AND REDISTRIBUTION: HOW DOES THE RELATION WORK?

Why should we expect a relation between decentralization and income inequality? What is the structure and the direction of causation in that process? By what mechanisms is the relation driven? In this chapter I endeavor to answer these questions through the construction of a theoretical argument in which decentralization and inequality are thought of as the two elements of a dynamic relation, each stage of which can be analyzed separately.

The foundations of this argument are built in four steps. First, I present the reasons why and the mechanisms through which decentralization is expected to matter for the distribution of income. On the basis of this analysis I justify the claim that decentralization may well be endogenous to specific aspects of the structure of inequality¹. Thereafter I develop a model in which the

¹ As mentioned above, for any given territorial unit, the territorial structure of inequality is a function of the combination of its income level and distribution, its individual specific risks and its unit's specific risks. The consideration of these three factors overcomes the limitations imposed by the conventional assumptions of previous contributions.

territorial design of redistributive policies is allowed to be endogenous. In a third step I allow for the existence of second order effects of redistributive policies/spillovers across regions in order to assess their impact on the relation between decentralization and inequality. Finally, the last section elaborates on the major implications of the model and derives a set of testable hypotheses concerning the relation between decentralization and inequality.

2.1.- Why does decentralization matter for income inequality?

By decentralization I refer to a system in which sub-national political entities (regions, states, provinces or, if preferred, *nations*) are allowed to make their own choices concerning redistribution. Alternatively, under centralization the citizens of all regions are pooled into a common decision making process.

Consider the simplest model of redistribution, as developed by Meltzer and Richard (1981: 914-927) on the basis of the previous work by Roberts (1977: 329-340) and Romer (1975: 163-185), and apply its logic to a situation in which there exist several layers of power. Let Y_c , Y_g , Y_n be the average income² in regions c , g ³ and n , where n is the national level. Let Y_{mc} , Y_{mg} and Y_{mn} be the median voter's income in regions c , g and the national level, n . Finally let t_c , t_g , t_n be the level of redistribution decided in regions c , g and the national level, n . In these models a unique redistributive tool is assumed, namely a linear income tax with an

Thus it allows for a richer account of how inequality shapes the preferences for the institutional design of redistribution mechanisms in the context of multi-level governments.

² Y refers to before tax income.

³ The selection of subscripts is arbitrary, albeit not independent from my surrounding conditions: c may well represent Cataluña and g , Galicia. Note, however, that the examples developed above are not supposed to bear any relation whatsoever with the actual situation of these two Spanish regions.

intercept. This implies that redistribution is simplified to a single dimension, which in turn allows for single-peaked preferences and the application of the median voter theorem. For the purposes of this section, let me just recall the major implication of this model. To put it briefly, the amount of redistribution is a function of the relative position of the median voter on the income scale: the larger the distance between the income of the median voter and the average (mean) income in the society, the larger the preferred amount of redistribution. This basic tool allows one to define three basic scenarios in order to monitor the link between decentralization and income inequality. While the three of them are hypothetical, only scenario C can be argued to resemble the real world.

Scenario A: $(Y_{mc}/Y_c)=(Y_{mg}/Y_g)$; and
 $(Y_{mc}/Y_c)=(Y_{mg}/Y_g)=(Y_{mn}/Y_n)$ provided that $Y_c=Y_g=Y_n$,
 $Y_{mc}=Y_{mg}=Y_{mn}$, but $Y_n \neq Y_{mn}$ ⁴.

Scenario B: $(Y_{mc}/Y_c)=(Y_{mg}/Y_g)$; but
 $(Y_{mc}/Y_c) \neq (Y_{mn}/Y_n)$, because $Y_c \neq Y_g \neq Y_n$.

Scenario C: $(Y_{mc}/Y_c) \neq (Y_{mg}/Y_g)$, which implies
 $(Y_{mc}/Y_c) \neq (Y_{mn}/Y_n)$.

The first scenario (A) defines the characteristics of a nation where the structure of inequality, i.e., the distance between the income of the median voter and the mean income in each *demos*, is identical for the two regions and the national level. Thus the preferred level of redistribution in regions c and g and at the national level (n) is the same. Under these circumstances the distinction between centralization and decentralization bears no salience in relation to redistribution and inequality. If all regions have similar levels of wealth and distributions of income and,

⁴ If the median and the mean happened to be the same in any given territorial level, in the context of the median voter framework, there would be no need for redistribution.

subsequently, the integration of all regions results in a nation that resembles each of its parts, it simply does not matter at which level of government the power to redistribute is allocated. The distribution of income remains unaltered. This rather unrealistic situation provides an accurate benchmark case for understanding the interplay between the structure of inequality and different institutional designs.

Let us consider now the second scenario (B). In this case the structure of inequality is similar across regions, but, since $Y_c \neq Y_g \neq Y_n$, it is no longer the case that the distance between the mean and the median voter's income is the same at the national level. The point to note here is that even in the rather unlikely case that the structure of inequality is similar across different regions, a change from decentralization to centralization (and vice versa) would imply a change in the preferred level of redistribution⁵. Under these circumstances the distinction between centralization and decentralization matters in that choosing one or the other shapes the entire process of income redistribution.

In the third scenario (C) regions differ in their internal distribution of income and as a result hold different preferences for redistribution. It is obvious to see that in this context, as it was in B, the preferences of the national median voter do not coincide with those of the regional one. In this case, contrary to B, the preferences diverge not only between a hypothetical central government and all the regions, but also among regions themselves. Thus, it is quite straightforward to see that the decision as to which the level of government takes charge of

⁵ An extreme example is illustrative of this point. Suppose a Union with two regions. Each of the regions has three households. In the first region household incomes are given by 1, 3 and 6. In turn in the second region household incomes are given by 4, 12, 24. Both regions have the same median to mean ratio, i.e., $9/10$. However the ratio at the union level, i.e., considering the six households together is a different one, i.e., less than $18/25$. In these circumstances an institutional change from centralization to decentralization would alter the preferred level of redistribution without introducing inter-regional differences.

redistribution has direct consequences for the distribution of income.

More generally, from the contrast between the three scenarios, two major effects of (de)centralization⁶ on the distribution of income can be distinguished: the “between levels”⁷ effect on the one hand and the “homogenization/diversification” effect on the other. Under the rather unlikely conditions stated in scenario A, none of these effects would be at work. This does not necessarily imply that decentralization has no consequences; these may be related to issues of efficiency gains in relation to the provision of other types of public goods or issues of (dis)economies of scale. What it clearly illustrates, however, is that decentralization has implications for the distribution of income if and only if it is introduced in places in which there is some pattern of regional inequality. This brings us back to scenarios B and C.

The comparison between them illustrates the nature of these two effects. The “between levels” effect points to the fact that an institutional change affects the income distribution because the change in the scale of the political process shifts in itself the income of the median voter. This effect is present both in B and C. But in the former case, given that the structure of inequality is similar across regions, decentralization does not provoke a diversification of the levels of redistribution provided by different regions. Under separation, all regions would provide a similar level of redistribution, even though it would be different to the one satisfying the national median voter. To put it differently, given the specified conditions a shift from decentralization towards centralization would imply no equalization in the levels of redistribution (t) across regions. Hence the “between levels” effect of decentralization implies only a change in the scope of redistribution provided, but under either institutional regime all regions would undertake similar levels of redistribution.

⁶ (De)centralization indicates that the two possible directions of an institutional change are being considered.

⁷ Levels refer here to central and regional as distinct realms of political authority.

Finally, the homogenization/diversification effect is at work in the far more realistic scenario C. Regions diverge in their internal inequality structure as well as in their average levels of income. Under separation each of them would choose its more preferred t . Redistribution is no longer the same across different regions. Hence a shift towards decentralization would impose a change in the scale of redistribution that, unlike case B, would be specific to every single region⁸. Conversely, a switch towards centralization would imply not only a change in the scale but also the homogenization of t across regions.

The overall impact of these two effects on the distribution of income is far from obvious. It is certain that decentralization has an effect, but this effect need not go always in the same direction. Hence the distributive consequences of decentralization cannot be established a priori. From this perspective it is worth recalling that, in all three scenarios but most clearly in C, preferences are a function of the internal structure of inequality in a specific territorial unit and not a direct reflection of its level of income/wealth. Put differently no matter how rich/poor regions g and c are, their preferred level of redistribution depends on the distance between their average and their median voter's income. Hence it is not necessarily the case that poor regions always prefer centralization to decentralization and rich regions opt always for decentralizing (Persson and Tabellini 1994: 765-773). A straightforward example would be the case of a poor region whose

⁸ A numerical example helps illustrate the point. Consider two regions with three households each. The income of these households is distributed as follows: 1, 3, 6 is the income of the households in the first region, while 4, 6 and 30 represents the income of the households in the second one. Note that the ration at the Union level is similar to the one in Scenario B (ft.22), namely less than $18/25$. In this case a change from centralization towards decentralization would lead the first region to opt for a level of redistribution given by $9/10$. In turn, in the second region, the median to mean ratio gives $9/20$. The degree of redistribution increases in the second region in relation to both the first region and the Union.

citizens rather keep a decentralized system in order to implement more generous redistributive policies. Additionally, in the presence of unequal regions the institutional design modifies the preferences for redistribution: citizens that support a particular redistributive policy at the regional level need not automatically support the same one at the national level, and vice-versa. Suppose $Y_c > Y_g$ and $(Y_{mc}/Y_c) > (Y_{mg}/Y_g)$. Under these conditions $t_c > t_g$, i.e., the rich region is more redistributive than the poor one. If redistribution were to be centralized, citizens in c would support a smaller t since a majority of citizens in c would be net contributors and a majority of citizens in g would be net recipients⁹. All in all, this points to the idea that the specific direction of the effects of an institutional change depends upon the status quo in terms of the structure of inequality.

Precisely on these grounds, it is reasonable to assume that actors have some expectations about the distributive consequences of different institutional designs. Political actors, when deciding the levels of centralization-decentralization of the welfare state, are aware of the structure of inequality within the different territories from which they derive an expectation about the level of redistribution to be generated by any specific institutional design. In other words, by deciding on the institutional design they are also making a choice about income redistribution. In this sense welfare redistributive policies themselves become part of the institutional design and link directly decisions about decentralization to the distribution of income. To put it simply, decentralization is endogenous to income inequality. There is then a political process according to which the structure of inequality shapes the levels of decentralization. It is in fact this political process that accounts for the different relationships between institutional design and levels of inequality. The question at the core of our problem becomes, then, how the structure of inequality

⁹ For a similar argument applied to different policy issues where the logic of the process leading to a change in preferences is formally depicted see Rose-Ackerman (1981: 152-165).

determines the incentives of actors to centralize/decentralize different welfare policies, to provide the overall level of decentralization of the welfare state. Only after this question has been given an answer, will it be possible to understand fully the relation between decentralization and inequality.

Let me state from the beginning that, in what follows, I provide a rather abstract answer to this question. I am aware that for every historical case there are different points of departure, historical inertias and external circumstances that any in depth analysis of these experiences should take into account. Indeed, the impact of inequality on the territorial design of redistribution mechanisms for any given set of cases can be decomposed in two stages: the first one is how the structure of inequality shapes the preferences of the actors involved. The second one refers to how these actors interact and reach a final outcome in the context of the existing decision-making procedures. The main goal of this chapter is not to account for every possible event, but to abstract the general structure of the relation. While the study of the second stage requires additional theoretical work for the understanding of the interaction between regions under specific institutional contexts, the first one is the most central for the purposes of this dissertation. Hence the theoretical argument below concentrates on how the structure of inequality shapes the preferences of the relevant actors while making a simplifying assumption about the second stage, namely that the centralization of redistribution only takes place if it is accepted by either all or a qualified majority of the units of the federation.

2.2.- The Structure of Inequality and the (De)centralization of Redistribution: risk sharing and institutional choices

For any given redistributive policy (t) there is a decision to be made between decentralization (full autonomy), decentralization with national standards and interregional transfers (partial autonomy) and full centralization. The purpose of this section is to

show the extent to which the choice of the institutional design of any given welfare policy is a function of the regional structures of inequality and the pattern of risk sharing between regions. The section is organized as follows: after an introductory discussion in which some of the model's major aspects are justified, the model is presented in two stages. First I will approach the problem assuming that the purpose of the welfare state is pure redistribution. In this way, the relationship between the structure of inequality and the preferences for redistribution is isolated. Thereafter, I shall introduce uncertainty about future income and the policy choices and explore how the introduction of insurance affects the structure of incentives underpinning the institutional choice. On the basis of the second stage of the model, the notion of risk sharing is defined and its implications for the relation between decentralization and inequality discussed.

Let me start by making two general qualifications. Firstly, I stick to a *positive* approach. As argued above, this is in itself a departure from a large majority of the previous contributions in the field, which are more concerned with proving normative statements and designing efficient institutional devices than with explaining the actual relation between decentralization and income inequality. Here, I do not seek to make normative statements. Secondly, while still building on recent contributions within the long tradition of the economic analysis of fiscal federalism, my argument presents yet another difference in relation to them. Unlike most studies on the relation between fiscal federalism and redistribution, I do not take as an implicit or explicit assumption the existence of an equality-efficiency trade-off. The model presented in this section is anchored on rather different assumptions.

The study of the determinants of political integration and the institutions of fiscal unions has witnessed important recent developments in the field of public economics. These contributions have pushed our understanding of this problem, whose logical structure bears many similarities with the one underlying the centralization/decentralization decision, a long way

ahead. Bolton and Roland (1997: 1057-1090); Bolton, Roland and Spolaore (1996: 697-705) and Alesina and Spolaore (1997:1026-1055) have studied the determinants of political integration and separation focusing specifically on the impact of the differences in the income distribution across regions. These authors have also discussed the role of complete factor mobility on the politics of integration. Alesina et al. (2001b, 2001c) have applied a similar sort of argument to the study of the formation of international unions and the design of efficient rules for the internal working of federations. Finally Persson and Tabellini (1996a: 979-1009, 1996b: 623-646), Bucovetsky (1998: 301-328) and Alesina and Perotti (1998: 989-1008) have carried out insightful analyses of the insurance properties and the nature of the risks attached to centralized and decentralized fiscal unions.

In all these models, the analysis of the structure of inequality is reduced to income heterogeneity or even, as in Alesina et al. (2001b), held constant, imposing differences across regions in their preferences for public goods. In addition, as pointed out above, while discussing the relation between the welfare state and the distribution of income, these scholars, either implicitly or explicitly, assume the existence of an equality-efficiency trade-off. Taxation is therefore distortionary and enhances inefficiencies (Meltzer and Richard 1981: 914-927). Within this framework, the preferences of (otherwise assumed perfectly mobile) capital and labor are straightforward. Contributors would prefer, and eventually move to, regions with lower taxation levels, while recipients will do the opposite. Building on these contributions, the argument presented here aims to go one step further, by assuming a more complex definition of the structure of inequality and the interaction between the economy and the welfare state. In order to do this, I consider the structure of inequality in any given region to be a function of its income distribution (which is assumed to be different to the one of the other regions) and its degree of economic specialization.

Economic specialization can be thought of as a continuum between 0 and 1, so that every region would be located between

two rather extreme cases. Values around 0 depict a situation in which the labor force is fragmented in a large number of productive activities, each of them having its own asset profile. Alternatively, values closer to 1 describe a situation in which a substantial majority of the economic activity in the region is devoted to the production of one specific good or service. At the extreme, the entire region's economic activity depends upon one productive sector. Examples of the former are regions combining large primary, manufacturing and service sectors. Examples of the latter can be found in primary sector (fisheries in Nova Scotia and Galicia), heavy industry (Asturias, the R uhr Gebiet) or even high-tech (*mutatis mutandis* Ireland in the past few years) oriented regions. The degree of economic specialization matters for at least for two reasons. First, it alters the nature of the relation between capital and labor and, more generally, between the working of the economy and redistributive policies. Secondly, it renders the assumption of perfect factor mobility highly questionable. Let me substantiate each of these claims.

By definition specialization implies that the number of possible alternatives in the event of an adverse shock is lower. As a result, both employers and employees in that sector/region bear higher income risks. As argued by a recent stream of welfare state research (Mares 2001: 184-213; Estevez, Iversen and Soskice 2001; Iversen and Soskice 2001: 875-895), this fact conditions heavily their preferences about redistribution: the higher the levels of asset specificity (which parallels economic specialization), the higher the support for redistribution and the more likely are employers and employees to endorse a common and more generous policy. And this is so because, for higher levels of specialization, the insurance motive is likely to dominate the standard conflict relating to redistribution (rich versus poor). Employers no longer associate less efficiency with more redistribution, as embedded in the idea of the trade-off. Rather, redistribution becomes a form of insurance that facilitates the working of the economy. From here it follows that in a specialized enough sector of the economy, contributors and potential

recipients have something to gain from a commonly agreed redistributive policy within any given territory. This logic, so far developed to understand differences in terms of the welfare state development, is also very relevant for the analysis of preferences regarding different institutional designs, in that specialized regions are likely to show a rather different structure of incentives compared to non specialized ones.

Specialization also matters in that it affects factor mobility. In the presence of specialization, perfect factor mobility is no longer in place. A highly specialized sector of the labor force is less re-employable anywhere else in the country. Hence, those individuals have little incentives to move since there is not much demand for their skills. A prominent example here is provided by the fishermen of Nova Scotia (Canada). A similar logic applies to capital: specialized industries need labor with a particular set of qualifications that is not necessarily available all over the country. Thus they have an incentive to sacrifice some of their returns, in the form of taxes, to employ a better equipped labor force, as opposed to moving automatically to any region offering a capital tax reduction equal to or higher than the sum of the moving and the fixed cost left behind. Specialized capital and labor are, overall, less mobile, which in turn increases even further their exposure to risk (Wildasin 1995: 527-546) and binds them to agree on a set of common redistributive policies that suits the working of an economy. The expected pattern of second order effects of redistributive policies can then be considered, to some extent, a function of specialization. In the next section of the chapter I will come back to the implications of specialization for the issue of how second order effects alter the incentives to adopt different institutional designs. Before that though it is necessary to spell out the key elements of the relation between decentralization and income inequality and how they relate to each other. For the purposes of the presentation of the argument, at this stage it is assumed that neither citizens nor endowments are allowed to move between regions in response to different redistributive policies. In

other words, second order effects of welfare state policies are assumed away.

The Argument: the structure of inequality, institutional designs and redistribution

The development of the argument requires building a link between different dimensions of the distribution of income, the structure of risks within and between regions and the structure of incentives underpinning the choice of a particular territorial design of redistribution. The nature of such link can be summarized in the following, general, claim: the driving force of the relation between decentralization and inequality is the scope of risk sharing between regions. In other words, the choice of a particular institutional design of redistribution is considered a function of the scope of risk sharing between regions, which in turn depends itself upon the territorial structure of inequality. By risk sharing I mean the extent to which regions have a similar profile in terms of the types of risks they are facing. In the identification of these risks and how they contribute to the choice concerning the territorial design of redistribution lies the main task of this section.

In order to do so, this section presents a very simple model of institutional choice in which the relevant actors face the problem of

$$\text{Max } (U(c)_d, U(c)_c),$$

Where $U(c)_d$ denotes the value of consumption under decentralization and $U(c)_c$ denotes the value of consumption under a centralized design of redistribution. Intuitively, the basic problem underlying a decision about the scope of (de)centralization of any given welfare policy is similar to the one underlying the decision to integrate or separate, since decentralization implies separation for that particular policy realm and vice-versa. Therefore, the theoretical work developed in this section takes the Bolton and Roland (1997:1057-1090) and the Alesina and Perotti (1998: 989-1008) models to explain the

politics of separation and integration as its point of departure. The argument in this section is built through the extension and the combination of the models developed in these two articles. The main difference between the argument as developed in this section and previous contributions consists in the incorporation of individual specific risks derived from the degree of specialization of the working population. In this way, the link between the specialization of the regional economy and the structure of incentives underlying the institutional choice can be identified. Yet, however important, this is only one element within a more general relation where there are other elements at work. In order to illustrate the role of each of these elements within the relationship between the structure of inequality and the choice of the territorial design of redistribution, the rest of the section is structured as follows. I first discuss the strategy adopted to present the argument as well the assumptions on the basis of which the analysis is built. Thereafter, the argument is presented and its implications discussed.

Strategy and Assumptions

In order to isolate the different elements involved in the relation between the structure of inequality and the territorial design of redistribution, the argument is developed in two steps. This implies the construction of two different models that present rather different degrees of complexity. Model I aims at depicting the role of the differences between regions in terms of their average aggregate output, the profile of their dependent populations and the incidence of individual specific risks. Model II incorporates the possibility of regional specific shocks, which introduces a number of complexities due to the implications that the shock has for the other elements in the model. Both models are built on the following set of assumptions, some of which are only applicable to the second stage of the argument.

A.1.- As mentioned above, at this stage, it is assumed that neither citizens nor endowments are allowed to move between regions in response to the nature of different redistributive policies.

A.2.- The decision about the institutional design of redistribution is to be made before the economic outcome is known, i.e., (1) before the representative individual of the region knows which sector he/she is going to end up in and/or (2) before it is known which region is the lucky one. This rather unrealistic assumption is helpful in that it makes unnecessary to identify specifically in which sector the median voter is.

A.3.- Redistribution is performed via a linear tax with an intercept. This allows to assume that the level of redistribution is determined by a single issue majority vote.

A.4.- A Union with two regions is considered. Regions are supposed to have very simple economies.

A.4.1.- In model I regions are assumed to have only two sectors, β and λ . β represents the sector of the population that derive their income from labor market activities subject to individual specific risks. The λ represents the non-working population, whose income comes from the share of aggregate output per capita (y)¹⁰ that has been taxed (yt). So let $(1-t)w_i$ denote the after tax income of the people in the working sector of the population(β). Finally, let $(t-t^2/2)y$ be the income of the people ending up in the λ sector. $t^2/2$ measures conventionally the deadweight losses of redistribution. The sum of the two sectors exhausts the population in model I.

A.4.2.- In turn, in Model II regions are assumed to have three sectors: α , β and λ . The last two sectors are defined in the same way as in Model I. In addition, the α sector represents the share of the working population that works in a sector with no individual specific risks, but exposed to regional specific ones. These risks take the form of a shock (S) that, following Alesina and Perotti

¹⁰ Incidentally in Model I $y=\beta w$, where w represents the output per capita in the working sector. In turn, in Model II, $y=\alpha w+\beta w$.

(1998: 989-1008), is assumed to be negatively perfectly correlated between the two regions. In other words, for one lucky ($S=1$) region in the union there is necessarily an unlucky ($S=-1$) one. Let $(1+S)$ represent the external shock affecting people working in the α sector. Hence in Model II $\alpha(1-t)w_i(1+S)$ and $\beta(1-t)w_i$ denote the after tax income of the people in the two working sectors of the economy. The income of the λ is defined as in Model I. However, the consideration of regional specific risks introduces a number of complexities concerning both the definition of the utilities and the estimation of the tax rates under the two institutional regimes. By considering them in detail, Model II illuminates the role played by regional specific risks in the politics of institutional choice of a territorial design of redistribution.

A.5.- Risks imply uncertainties about income. In the case of α , these uncertainties are a function of the probability of receiving an external shock. In the case of β , the uncertainties derive from individual specific risks, associated to the degree of economic specialization. In models I and II, σ_z will denote the variance due to the individual specific risks. In turn, in model II, σ_s will denote the variance of the regional specific shock. The definition of the expected utility of each of sectors (α , β) affected by income risks is modeled similarly in both cases, i. e, using a quadratic utility function of the following form (Varian 1980:49-67). Let z represent the income of either of the risky sectors. Then,

$$E(u) = E(z - z^2/2), \text{ where}$$

$$E(z^2) = E(z)^2 + \text{var } z$$

and

$$\text{var } z = \sigma^2 w^2 (1-t)^2 .$$

A.6.- Finally, in line with previous models (Bolton and Roland 1997: 1057-90), I assume that there is a union, in our case, centralization, only if it is unanimously (or, for the case, quasi-unanimously) accepted by the regions. Obviously, this over-

simplifies the politics of the institutional design itself. However, the argument to be constructed in this chapter is more concerned with a proper understanding of the link between the structure of inequality and the institutional design of redistribution than with the institutional specificities of the interactions between regions. Herein lies the marginal contribution of the argument. This is in itself a complex enough endeavor. Thus, the detailed characterization of every case and the analysis of strategic interactions ought to be postponed. A careful treatment of each of these contingencies at once is simply intractable. Hence the usefulness of this assumption¹¹.

*Model I: Income Differences, Dependent Population and Individual Specific Risks*¹²

This model analyses the role played in the institutional choice by two dimensions of the structure of inequality of different territorial levels, namely the differences between regions in terms of average income and, secondly, the differences between regions in terms of the incidence of individual specific risks. The former has been already highlighted by the specialized literature. The latter introduces an under-explored dimension in the politics of institutional choice.

The individual specific risks are assumed to be the result of different degrees of economic specialization. As discussed in the

¹¹ The restrictions imposed by these assumption are partly overcome by the case studies implemented to test the hypotheses derived from the model. They actually make an effort to put the general logic of the model within the context of specific institutional designs.

¹² Notation: the absence of a subscript implies reference to the regional level. Subscript u indicates reference to the union level. So for instance w_i represents the pre-tax income of an individual of the region whereas w_{iu} represents the pretax income of an individual of the union. Similarly w_m represents the pretax income of the median voter of the region whereas w_{mu} represents the pretax income of the union's median voter.

previous section, if specialization is to matter at all, it is because it entails higher income risks. The losses attached to possible adverse circumstances are larger and so is the uncertainty about future income. In this context, as long as regions differ in their degree of economic specialization, the Union between them will also be different from each of the regions. There is room to conceive a theoretical link between the degree of specialization and the evaluation of the insurance properties of different institutional designs of the welfare state¹³.

According to the assumptions discussed above, the expected utility function of a representative individual at the regional level can be defined as follows:

$$EU(c) = \beta \int U(z_i) df(z_i) + \lambda y t - \lambda y t^2 / 2 \quad (1a)$$

Where z_i depicts the unknown incidence of individual specific risks. Equivalently,

$$EU(c) = \beta [w_i(1-t) - w_i^2(1-t)^2(1+\sigma_z^2)] + \lambda y t - \lambda y t^2 / 2 \quad (1b)$$

Any given individual will choose the tax rate that maximizes her after tax income. Hence the relevant partial derivative becomes:

$$\partial E / \partial t = -\beta w_i + (1-t)\lambda y + (1-t)[2\beta w_i^2(1+\sigma_z^2)]$$

being the solution to the resulting first order condition as follows:

$$t^* = 1 - \beta w_i / [\lambda y + 2\beta w_i^2(1+\sigma_z^2)] \quad (2)$$

Similarly, it is possible to define the tax rate that an individual of a union (u) where one sector of the working population is

¹³ On the conception of redistributive taxation as a provider of social insurance see Varian (1980: 49-67), Atkinson (1995) and Sinn (1995: 495-526).

exposed to a certain degree of individual specific risks while the other sector of the population consists of the dependent population. Note that,

$$\beta_u = (\beta_1 + \beta_2) / (\alpha_u + \beta_u + \lambda_u),$$

which is to say that the relative weight of the economically specialized sector in the union is not necessarily similar to the one in the region. Nor it is, as a result, the incidence of individual specific risks for workers in β_u . By analogy, the tax rate chosen by any member of the union will be the one that maximizes the union's members after tax income, i.e.,

$$t_u^* = 1 - \beta_u w_{iu} / \lambda_u y_u [2\beta_u w_{iu}^2 (1 + \sigma_{zu}^2)]^{1/2} \quad (3)$$

From (2) and (3) it is straightforward to see that the larger the dependent population, the larger the preferred tax rate. In addition, consistently with previous insights (Varian 1980: 49-67; Iversen and Soskice 2001: 875-895), expressions (2) and (3) also show that when the risk inherent to the people working in the specific sector increases, the preferred tax rate also increases, in paralleling the demand for insurance. And this holds for any given territorial unit under consideration: other things being equal, an increase in σ leads to a reduction in $(1-t)$ and therefore to an increase in t .

At this point, in line with Bolton and Roland (1997:1057-1090) and Alesina and Perotti (1998: 989-1008), assumption A.3 helps simplify very much the structure of the problem. Under the conditions outlined in A.3, (1) the equilibrium tax rate is the tax rate chosen by the median voter in both the union and the region and (2), equally, the decision to centralize/decentralize will be driven by the evaluation of the difference between the expected utility of the median voter under decentralization and the expected utility of the median voter under centralization, i.e., when the tax implemented is the one chosen by the union's median voter. Thus, the comparison between the utilities presents the following form:

- $EU_m(c)_d = EU_m(c)_c \rightarrow$ the regional median voter is indifferent between the two institutional choices.
 $EU_m(c)_d > EU_m(c)_c \rightarrow$ decentralization is the outcome preferred by the regional median voter.
 $EU_m(c)_d < EU_m(c)_c \rightarrow$ centralization is the outcome preferred by the regional median voter.

In order to perform such exercise, it is necessary to substitute the relevant tax rates of the two institutional regimes into the utility function of the regional median voter. The utility function of the regional median voter can be generally defined as:

$$EU_m(c) = \beta[w_m(1-t) - w_m^2(1-t)^2(1+\sigma_z^2)] + \lambda y t - \lambda y t^2/2 \quad (4)$$

whereas the relevant tax rates are:

$$t_m = 1 - \beta w_m / \{ \lambda y + [2\beta w_m^2(1+\sigma_z^2)] \} \quad (5)$$

and

$$t_{mu} = 1 - \beta_u w_{mu} / \{ \lambda_u y_u [2\beta_u w_{mu}^2(1+\sigma_{zu}^2)] \} \quad (6)$$

By substituting (5) and (6) into (4), the utilities of the regional median voter under the two regimes are obtained. Thereafter, we are in a position to evaluate the differences between the two. Once these calculations are made, the following expression is obtained:

$$EU_m(c)_d - EU_m(c)_c = \quad (7)$$

$$\begin{aligned} & 1/2(y - y_u) + \\ & \beta w_m [2\beta w_m - \lambda y - a] / 2 [\lambda y + a] - \beta w_{mu} [2\beta w_m - \lambda y - a] / 2 [\lambda_u y_u + a_u] \end{aligned}$$

where $a = [2\beta w_m^2(1+\sigma_z^2)]$ and $a_u = [2\beta w_{mu}^2(1+\sigma_{zu}^2)]$, which is to say the terms capturing the individual specific risks at the regional and the union levels respectively. I turn now to discuss the implications of this result. Given that (7) is not self-evident I shall discuss the implications of the model using two numerical examples. Table 2.1 presents two simulations based on expression

(7). In both cases the region is poorer than the union. In the first simulation this is the only feature that distinguishes the region from the union. The second simulation is identical to the first one, except in that it introduces a second dimension of difference between the region and the union, namely it allows for differences in terms of the incidence of individual specific risks.

Table 2.1. Implications of Model I: Numerical examples

<i>Scenario I: The impact of differences in terms of average income.</i>	
<i>Conditions</i>	$EU_m(c)_d - EU_m(c)_c$
$\beta w_m = \beta w_{mu} = 4$ $y=6 ; y_u=7$ $\lambda_u = \lambda = 0.5$ $\sigma_z^2 = \sigma_{zu}^2 = 1 ; a_u = a = 64$	-0.6
<i>Scenario II: Adding differences in terms of incidence of individual specific risks.</i>	
<i>Conditions</i>	$EU_m(c)_d - EU_m(c)_c$
$\beta w_m = \beta w_{mu} = 4$ $y=6 ; y_u=7$ $\lambda_u = \lambda = 0.5$ $\sigma_z^2 = 2 ; a = 160 ; \sigma_{zu}^2 = 1 ; a_u = 64$	+0.1

Source: calculations by the author based on expression (7)

Scenario I illustrates very well the importance of the inter-territorial redistribution in the politics of institutional choice. In the absence of any other difference poorer regions have an incentive to opt for centralization for, under such design, they are able to capture part of the income of their wealthier partners. These, on the other hand, would have no incentive to centralize at all. Similarly expression (7) indicates how differences across regions in terms of their share of the dependent population increase the incentives for decentralization: for those regions where the incidence is low, decentralization is the obvious choice. Yet this is only part of the story. The comparison between scenarios I and II shows that when other dimensions of inequality

are taken into account, poor regions face a trade-off between the inter-regional income transfers implicit to centralization and their capacity to maintain their preferred policy choice in order to cope with their own labor market specific risks. Scenario II exemplifies how, in presence of sufficiently large differences in terms of the incidence of individual specific risks, the payoffs of centralization are overcome by the costs of having the union's preferred level of redistribution imposed. A specialized poor region may choose to stay on its own in order to protect its capacity to choose how much redistribution is to be provided. This is exemplified by the fact that the differential between utilities goes from -0.6 (centralization as the preferred outcome) to 0.1 (decentralization the preferred outcome) even in the presence of identical income differences.

An alternative way of thinking of the role of the incidence of individual specific risks is the following. Suppose that $y_u = y$; $w_m = w_{mu}$, $\lambda_u = \lambda$ but $\sigma_z^2 \neq \sigma_{zu}^2$, and recall that expression (5) maximizes (1). Under these conditions it is only possible to think of designs alternative to decentralization that potentially make the regional median voter indifferent between the two. The implications for the relation between the tax preferred in each of these cases and the utilities expected by the regional median voter are graphically represented in Figure 1.

From (5) and (6) it is easy to see that as $\sigma_z^2 > \sigma_{zu}^2$, $t_m > t_{mu}$, which, as depicted in Figure 1, implies a decrease in the expected utilities of the regional median voter. Hence, unless $\sigma_z = \sigma_{zu}$ no alternative institutional design is considered, which is to say that any institutional option that implies a change in any of the parameters defining the current structure of inequality will be rejected by the regional median voter. In relation to the issue of concern in this section, the message is clear: differences across regions in the level of economic specialization generate incentives for decentralizing because they imply varying degrees of exposure to income risks by individuals in different regions, which in turn, generates differences in the degree of public insurance demanded by citizens across regions. In other words, economic specialization enhances decentralization in that it widens the differences

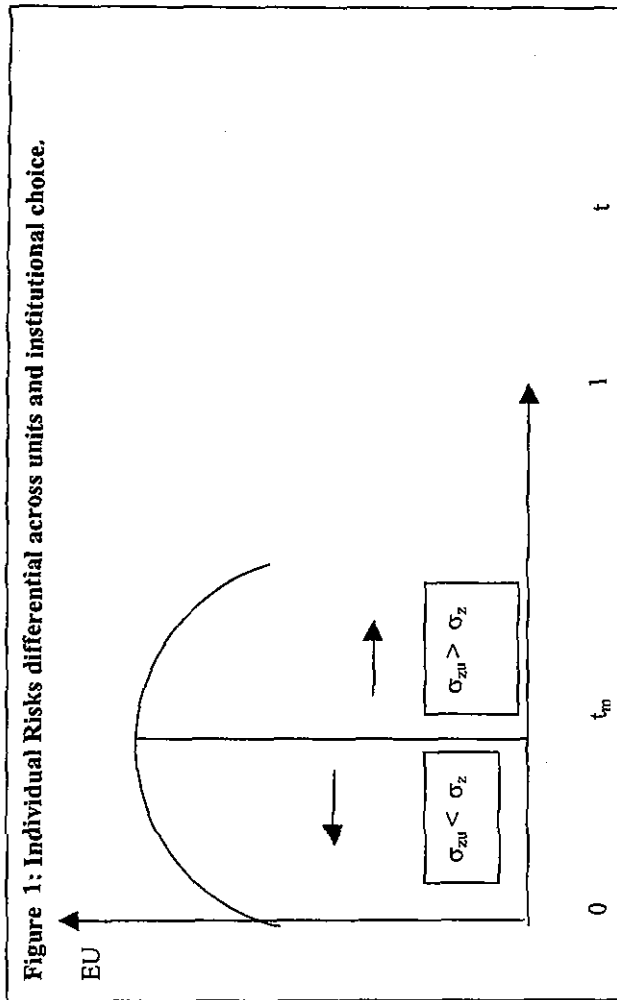


Figure 1: Individual Risks differential across units and institutional choice.

across regions regarding the preferences for redistribution. In this sense, specialization may shape the politics of redistribution across territorial units even up to the point of overcoming the pro-centralization incentives of lower income regions, as illustrated above.

Model II: Incorporating Regional Specific Risks

Model I suffers from a significant limitation in that the only source of risks lies with individuals within regions. In this sense, any inequality along the dimensions considered (namely tax bases, pre-tax income variance or economic specialization) is in itself enough to tip the balance towards a preference for decentralization. This bias of Model I stems from the exclusion of region specific risks, that is to say, risks that affect equally all individuals within the region (i.e. foreign trade shocks, weather related disasters and the like). This is of course quite an unrealistic setting, however useful it may be in isolating the role of different “within region” factors as determinants of a specific institutional choice. Hence the need for model II to incorporate *region specific risks* so that the extent to which they change the structure of incentives underlying the choice about the territorial design of redistributive policies can be assessed. To do this I partially follow Alesina and Perotti (1998: 989-1008) in incorporating a shock S that is negatively perfectly correlated between the two regions of the union. They modeled it as affecting all sectors of all regions. In what follows I assume that it only affects sector α of the regional economy.

Thus from A.4 the incorporation of regional specific shocks implies that the utility function of any given territorial level must be defined as a function of two unknown variables and their interaction through the tax rate: (1) whether or not the external shock (S) is positive or negative; (2) the incidence of individual specific risks and (3) and the fact that the tax base and the tax rate affecting all three sectors is also a function of the external shock.

$$EU(c) = \alpha \int U(S) dF(S) + \beta \int \int U(S, z_i) dF(S) dG(z_i) + \lambda \int U(S) dF(S) \quad (8)$$

Where S captures the unknown external shock and z_i , as in Model I, captures the unknown incidence of individual specific risks.

As in model I, under any of the two institutional designs being evaluated, the tax rate will be the one chosen by the median voter. In the case of centralization, the union's median voter will choose the tax that maximizes the consumption across the three stages (since he does not know where he can end up in). A similar approach can be assumed in the case of the regional median voter, the one to set the tax rate under decentralization. However, in order to derive the tax rates, it is necessary to exploit the assumption that the shock S is perfectly negatively correlated across regions (A.4.2). Such an assumption makes feasible to consider the following sequence of events in order to derive the relevant tax rates in Model II:

1.- Given the assumption that there are two regions whose external shocks are negatively perfectly correlated, the different values of S can be worked out for each of the institutional regimes. Following A.4.2, expression (8) can be rewritten as:

$$EU(c)/S = \alpha w_i (1-t) [0, 2] + \beta \int U(z_i) dG(z_i) + \lambda y t - \lambda y t^2 / 2$$

2.- Thereafter the t chosen by the regional median voter conditional on the value of S can be derived.

3.- Finally the properties of each of the tax rates and the two institutional regimes before S is actually known can be evaluated. In what follows these three steps are undertaken for both centralization and decentralization.

Centralization

(for notational convenience I skip the subscript u until the final result, where it is added to denote that w and y are the union level ones)

The Union is defined by the merging of the two regions. Hence by assumption (1+S) becomes $[(1+S)/2 + (1-S)/2]$ and $(1+S)^2$ becomes $(1+S^2)/2$. Since S is assumed to be either 1 or -1, under centralization, expression (8) can be rewritten, conditional on S, as:

$$EU_c(c)/S = \alpha \{ w_i(1-t) - [w_i^2(1-t)^2(1+\sigma_s^2)] \} + \beta \{ w_i(1-t) - w_i^2(1-t)^2(1+\sigma_z^2) \} + \lambda y t - \lambda y t^2 / 2 \quad (9)$$

In order to establish the tax rate that maximizes the after tax income of the union, the relevant partial derivative is:

$$\frac{\partial E_u / \partial t_u}{[2\beta w_i^2(1+\sigma_z^2)]} = -\alpha w_i - \beta w_i + (1-t) \cdot [2\alpha w_i^2(1+\sigma_s^2)] + (1-t)\lambda y + (1-t) \quad (10)$$

and the solution to the resulting first order condition is:

$$t^*_u = 1 - (\alpha w_{iu} + \beta w_{iu}) / \{ \lambda y_u + [2\alpha w_{iu}^2(1+\sigma_{su}^2)] + [2\beta w_{iu}^2(1+\sigma_{zu}^2)] \} \quad (11)$$

Thus the tax rate chosen by the union's median voter is:

$$t_{mu} = 1 - (\alpha w_{mu} + \beta w_{mu}) / \{ \lambda y_u + [2\alpha w_{mu}^2(1+\sigma_{su}^2)] + [2\beta w_{mu}^2(1+\sigma_{zu}^2)] \} \quad (12)$$

Decentralization¹⁴

Because the value of S is not known a priori, the regional median voter may have to maximize the after tax income under

¹⁴ In this section the absence of a subscript u implies that the equations refer to the regional level.

two different scenarios, the lucky and the unlucky one. This fact implies that there are two possible tax rates under decentralization, themselves conditional on the value of S. The simplest way to establish the tax rate under decentralization is to derive it for each of the two possible states, named t1 in the case of the unlucky region and t2 in the case of the lucky one, and then, given that S is not known a priori, simply assume that $t_m = 1/2t_{m1} + 1/2t_{m2}$.

The unlucky region

In the case of S=-1, it is straightforward to see that the α sector's income disappears. Hence the utility function of the unlucky region becomes:

$$EU_d(c)/S = \beta [w_i(1-t) - w_i^2(1-t)^2(1+\sigma_z^2)] + \lambda y t - \lambda y t^2 / 2 \quad (13)$$

In which case the relevant partial derivative becomes:

$$\partial E / \partial t = -\beta w_i + (1-t)\lambda y + (1-t)[2\beta w_i^2(1+\sigma_z^2)] \quad (14)$$

In turn the solution to the resulting first order condition is:

$$t1^* = 1 - \beta w_i / \{ \lambda y + [2\beta w_i^2(1+\sigma_z^2)] \} \quad (15)$$

Which implies that, given S=-1, the regional median voter will chose the following tax rate:

$$t_{m1} = 1 - \beta w_m / \{ \lambda y + [2\beta w_m^2(1+\sigma_z^2)] \} \quad (16)$$

The lucky region (S=1)

In this case the utility function would be expressed as follows:

$$EU_d(c)/S = \alpha \{ 2w_i(1-t) - [w_i^2(1-t)^2(4 + 4\sigma_s^2)] \} + \beta [w_i(1-t) - w_i^2(1-t)^2(1+\sigma_z^2)] + \lambda y t - \lambda y t^2 / 2 \quad (17)$$

In which case the relevant partial derivative becomes:

$$\frac{\partial E}{\partial t} = -2\alpha w_i - \beta w_i + (1-t) \cdot [2\alpha 4w_i^2(1+\sigma_s^2)] + (1-t)\lambda y + (1-t) [2\beta w_i^2(1+\sigma_z^2)] \quad (18)$$

whereas the solution of this FOC yields:

$$t^* = 1 - (2\alpha w_i + \beta w_i) / \{ \lambda y + [2\alpha 4w_i^2(1+\sigma_s^2)] + [2\beta w_i^2(1+\sigma_z^2)] \} , \quad (19)$$

and, given that $S=1$, the tax rate of the regional median voter becomes:

$$t_{m2} = 1 - (2\alpha w_m + \beta w_m) / \{ \lambda y + [2\alpha 4w_m^2(1+\sigma_s^2)] + [2\beta w_m^2(1+\sigma_z^2)] \} , \quad (20)$$

The next steps in the elaboration of the model consist in deriving the Utility levels of the regional median voter under the two institutional regimes now that the tax rates that would be implemented under each of them have been established. This involves taking the following steps:

The Regional Median Voter under Centralization

One half of the α sector disappears (the region is still hit by the shock with $p=1/2$). Alternatively the region may be the lucky one even if under centralization with probability $(1-p)$ The tax rate to be substituted in the equations is always t_u (expression 4). Thus the utility function of the representative individual of the region under centralization becomes:

$$EU_m(c)/S = \frac{1}{2\alpha} \{ 2w_m(1-t_u) - [w_m^2(1-t_u)^2(4 + 4\sigma_s^2)] \} + \quad (21)$$

$$\beta [w_m(1-t_u) - w_m^2(1-t_u)^2(1+\sigma_z^2)] + \lambda y t_u - \lambda y t_u^2 / 2$$

The Regional Median Voter under Decentralization

The α sector of the region can still disappear with $p=1/s$ or, alternatively, it receives a positive external shock ($S=1$) with probability $(1-p)$. In addition, this introduces uncertainty about the tax rate. It can be t_{m1} with probability p and t_{m2} with probability $(1-p)$. Thus the utility function for the purposes of substitution becomes:

$$EU_m(c)_d/S=$$

$$\begin{aligned} & 1/2\alpha\{2w_m(1-1/2(t_{m1}+t_{m2}))-[w_m^2(1-1/2(t_{m1}+t_{m2}))^2(4+4\sigma_s^2)]\} + \quad (22) \\ & \beta[w_m(1-1/2(t_{m1}+t_{m2}))-w_m^2(1-1/2(t_{m1}+t_{m2}))^2(1+\sigma_z^2)] + \\ & \lambda y/2(t_{m1}+t_{m2}) - \lambda y(t_{m1}+t_{m2})^2/4 \end{aligned}$$

The next step would naturally be the evaluation of the differences between (21) and (22). This however would render a rather intractable expression. Indeed the point to be made in this section can be made in a simpler way by comparing the tax rates that would apply to the region under the two institutional regimes. Let me, for the purposes of the comparison, elaborate further on the two of them. Using expressions (12), (16) and (20), suppose $\lambda y = \lambda y_u \beta w_m = \beta w_{mu}$ and $\sigma_z^2 = \sigma_{zu}^2$. Under these conditions let,

$a = \lambda y + [2\beta w_m^2(1+\sigma_z^2)]$, i.e., the term capturing the incidence of individual specific risks at the regional level (expressions 16 and 20)

$b = [2\alpha 4w_m^2(1+\sigma_s^2)]$, i.e., the term capturing the incidence of regional specific shocks at the regional level, only present expression (20), the one for the lucky region.

$a_u = \lambda y_u + [2\alpha w_{mu}^2(1+\sigma_{su}^2)]$, i.e, the term capturing the incidence of individual specific risks at the union level (expression 12) and finally

$b_u = [2\beta w_{mu}^2(1+\sigma_{zu}^2)]$, i.e, the term capturing the incidence of regional specific risks at the union level (expression 12).

Using this notational simplification expression (12) can be rearranged so that the the tax rate chosen by the union's median voter becomes:

$$t_{mu} = 1 - (\alpha w_{mu} + \beta w_{mu}) / (a_u + b_u) \quad (23)$$

Now recall that, in presence of regional specific shocks, the tax rate is conditional on S , such that

$$t_m = 1/2 t_{m1} + 1/2 t_{m2} \quad (24)$$

Implementing the notational shortcuts indicated above and substituting (16) and (20) into (24), the following expression is obtained:

$$t_m = 1 - (\alpha w_{mu} + \beta w_m(1+b)) / 2(a+b) \quad (25)$$

By comparing (23) and (25) it is straightforward to see that, for a similar regional specific shock ($b=b_u$), the amount of insurance against regional specific shocks is always going to be higher under centralization. Under decentralization, the unlucky region is unable to provide any insurance in case of a negative external shock ($S=-1$). Hence, consistently with previous literature¹⁵, the incorporation of regional specific shocks in Model II brings into the politics of institutional choice a potential cost of decentralization, namely the lack (or for the matter, the lower

¹⁵ In this sense our conclusions are consistent with Persson and Tabellini (1996a: 979-1009) even though they argue from a rather different perspective. They treat designs as exogenously given and compare the outcomes of two possibilities: inter-regional incumbents level bargaining and nation-wide common vote. They find that the former leads to under insurance (the rich region is given more leverage in the negotiations) while the later provides over insurance (pooling potential recipients in a common decision making procedure boosts t). In our model regions are analyzed when deciding the institutional design and, similarly, need to balance whether they want to preserve autonomy (and therefore accept under-insurance against regional specific shocks) or guarantee insurance against a potential negative S (and therefore sacrifice autonomy).

degree) of insurance against regional specific shocks. By implication it can then be concluded that the more exposed regions are to these types of risks (affecting their sectors α) in our model, the more incentives they have to prefer a centralized design of redistribution; and, furthermore, the higher the number of regions within the union exposed to them the higher the chances for centralization to become the chosen design.

Taken together Models I and II provide grounds for the general claim underpinning the approach in this dissertation to the relation between decentralization and inequality. That is as follows: the driving force in the relation between decentralization and inequality is the scope of risk sharing between regions. In that sense, according to this model and notwithstanding historical inertias and specificities at work in every case, the institutional choice is shown to be a function of the scope of risk sharing, which in turn is a function of the territorial structure of inequality. By risk sharing I mean the extent to which regions have a similar profile in terms of the types of risks they are facing. In this sense, it is a function of the combination of the two different types of risks I have incorporated into the model, namely individual and region specific risks. Analytically this concept helps explain the conditions under which a specific design is adopted in a particular field / country.

Consider two regions A and B deciding whether or not to centralize a particular redistributive policy. A and B share risks fully if they have a similar degree of exposure to S and their distributions of income are structured in a similar way. Under these circumstances centralization is the obvious institutional choice. The opposite happens when the degree of exposure to external shocks varies and inequality is structured differently across different regions. Decentralization is the obvious outcome since at least one of the regions has no incentive to centralize redistribution. A more realistic setting though is depicted by a situation of partial risk sharing, where the two types of risks combine differently across regions. Faced with this situation, the model indicates that regions need to balance how much autonomy

they are willing to exchange for insurance and vice-versa. The institutional outcome in this context is also affected by the number of regions and their specific characteristics as well as by the procedure to adopt the collective choice (Persson and Tabellini 2000: 159-201).

Note that the idea that decentralization of redistribution is more likely to take place when social risks are not shared between regions is perfectly consistent with more normative considerations concerning the benefits of decentralization as a tool for dealing with informational problems associated with the functioning of the policy (see, among others, Oates 1999: 1120-1149). However, even so, the model shows that the underlying causal logic is a different one. Informational advantages may well help explain why a particular design remains over time, but tracing its origins to its alleged functional advantages subverts the sequence of causation. Alternatively, a key feature of this model is that the institutional choice is the result of a political process that links preferences concerning the design to the structure of inequality. In other words, the relation between decentralization and inequality is also a relation in which one dimension of inequality (its territorial structure) affects another one (distribution of inter personal income) via the design of redistributive policies.

Risk sharing is seldom clear cut. It differs across regions and policy fields. A large share of these examples fall in the category in which regions face a trade-off between autonomy and insurance. If regions differ in income, poor regions must trade-off the cost of having a policy different from what they would have chosen with the gains from being able to obtain some of the richer regions' wealth. Wealthier regions' dilemma is, in principle, is easier since they have no incentive to centralize. In turn even in the hypothetical case that regions do not differ largely in income a typical situation may involve differences in terms of individual specific risks (σ), but some degree of similarity in terms of the share of the dependent population (λ) and the exposure to unit specific risks (S). Furthermore, a shock S may interact with the units in different ways. If, as highlighted by the model, it affects

all the units in the same way it encourages centralization by increasing risk sharing. If alternatively, it affects the risks structure of the units (λ , σ) differently, it reinforces the trade-offs by generating a situation of partial risk pooling. Under specific circumstances the need to overcome the different tradeoffs can be equally shared across regions- hence the rationale for institutional innovation.

Historically, for those fields in which this trade-off is very tight, modern federations have overcome it by making the institutional design of redistribution bi-dimensional (Buchanan 1950: 583-599; Boadway 2001: 103-110; Cremer et al. 1997: 325-335). In a hypothetical situation in which all regions face a unit specific risk (S), albeit at different levels, while all of them are specialized in different sectors of production, our model predicts that decentralization prevails. However, both regions would agree to develop a system of inter-regional transfers that provides some insurance against S ¹⁶. Even though the determinants of the specific form of these interregional transfers is very diverse and is related to the specific historical process giving rise to each federation¹⁷, in general their size is affected by the distance between regions in terms of average income (Alesina, Glaeser and Sacerdote 2001a; Persson and Tabellini 2000:159-201). The inter-regional variation within this category is large since, while all regions may have an

¹⁶ Indeed Alesina et al. (2001b) have identified this combination as the most efficient institutional rule for federations in that it respects local differences at the same time as providing insurance to the regions. Nevertheless in this kind of context the efficiency gains may be undermined by a potential moral hazard problem pointed out by Persson and Tabellini (1996b: 623-646): localities may undertake redistributive policies that increase the probability of having a unit specific shock. This contention concerning the efficiency benefits of this or indeed any other design is beyond the concerns of this dissertation.

¹⁷ The contrast between the origins of the German *Finanzausgleich* system, imposed from above in the Constitution 1949, and the experience of the North American federations illuminates these differences. For a comparative summary see Bird (1986) and Ter-Minassian (1997).

incentive to take part in an insurance device against S , both the perceived level of risk and the demand for insurance depend initially on income. The ongoing debates about interregional transfers in the USA, Canada, Spain and Germany constitute examples supporting this point (Ter-Minassian 1997; Renzsch 1991; Banting et al. 1993; Färber 1997; Lopez Casanovas 1994: 126-147; Biehl and Ungar 1991: 39-65).

The identification of the peculiarities of the institutional design in the context of partial risk sharing completes the description of the process by which the structure of inequality conditions the institutional design of redistribution within federal/decentralized countries. To sum up the following insights emerge from our model:

1.- For those unions and policy domains among which risks are largely shared centralization is the likely outcome. Alternatively, when some risks are shared (unit specific ones, S) while others (share of the dependent population, λ ; or the incidence of individual specific risks, σ) are not, the likely outcome is a bi-dimensional design in which autonomy is guaranteed and the unit specific risks insured via a system of interregional transfers.

2.- When, as a result of specialization, individual specific risks diverge across regions, and the policy realm in question is also characterized by varying degrees of exposure to possible unit specific shocks, decentralization prevails as the institutional choice.

3.- Finally, inter-regional redistribution matters: poor regions trade-off autonomy for transfers from wealthier regions, that a centralized system delivers. Rich regions, in principle, would prefer decentralization to protect both their political autonomy and their resources from being transferred to other units. However, this is only the case in a static world. Among other things the next section points to some reasons why richer regions may be willing to trade-off resources for the protection of the specificities of their own structure of inequality.

2.3.- Interregional Mobility and the scope of risk-sharing

So far I have only exploited the model to highlight how the institutional design of redistribution is a function of the differences in the distribution of income across regions. The starting point of this section is to assume that a decentralized setting has already been chosen and is at work. Now the question to be answered is how the relation evolves, and what drives its dynamics. Equally, up to now, the argument has been developed on the assumption that market factors have no capacity to respond to redistributive policies. Put differently, second order effects have been assumed away. To be able to understand the dynamics of the relation, this constraint is now relaxed. It should be noted that this section is also applicable to a context in which there is an existing institutional design and a significant increase in inequality takes place. In such cases the expectation about potential behavioral responses by market actors is equally likely to shape the final decision about the institutional design.

The explanation of the dynamics of the relation requires acknowledging second order effects, for two reasons. The first one relates to their role as an intermediate factor between the implementation of specific redistributive policies by regions and the distribution of income. The consequences of a particular redistribution of income are a function of (a) the direct impact of the policy on the disposable income of households and individuals and (b) the way individuals and households react to such policy. In turn, two types of processes can be identified in relation to (b): an effect on the tax base that works through the decision to move either to or from a specific location. The decision to move incorporates an effect on the different components of pre-tax income arising through labor market related responses (b.1). The second effect is defined by the impact on individual welfare (Atkinson and Bourguignon 1990: 29)(b.2).

Therefore, our conclusions about the ultimate distributive consequences of any given design are conditional on the assumptions imposed about the pattern of second order effects.

Hence, second order effects are crucial to the very empirical assessment of the distributive consequences of decentralization. In the next section of the dissertation I deal in detail with this issue and its implications for the analysis of the distributive consequences of decentralization. But secondly, and more importantly, second order effects are themselves a major feedback mechanism, an engine that links in a common dynamics the different sequences in the relation between decentralization and inequality. Given that these effects are multidimensional and simultaneous, in the rest of the section I shall mainly concentrate on the role of geographical mobility choices.

I have already identified a set of relevant parameters (λ , σ , S) that in the event of exogenous changes would create pressure for an institutional change in either direction. So, for instance, a recent paper by Garrett and Rodden (2003) arguing that globalization leads towards higher levels of centralization can be interpreted in terms of our model as globalization generating an exogenous increase in S , or even λ , for a majority of regions within the union. As it stands, then, the model can handle how this kind of structural transformation bears on the relation of interest. The remainder of this section is devoted to completing the analysis by explaining how the distributive consequences of redistributive policies themselves feedback to the structure of incentives underlying the institutional design of those policies.

Recall from the previous chapter that the conventional view about the effects of geographical mobility is based upon the assumption of strategic behavior by different governments that exploit the fact that the both capital and labor are perfectly mobile to try to export costs and increase their tax bases. Since all regional incumbents are aware of this, no one increases redistribution above the equilibrium level (Hindriks 1999:215-234). Both my assumptions and my conclusions about the role played in this story by geographical second-order effects are rather different.

For a start, not everybody moves. While some factors may not be willing to, some others are simply not able to move across

regional boundaries. This brings me back to economic specialization. There are at least two reasons why the degree of specialization is likely to affect the mobility patterns of both capital and labor. The first one is that for the sake of common interest, the degree of conflict between capital and labor is reduced in the presence of economic specialization (Hall and Soskice: 2001). Given a degree of specialization, they are more likely to coordinate, and hence their approach to redistribution is not a zero sum game. Both capital and labor benefit from a stable relation (Mares 2001: 184-213): the former enjoy the continuity of an adequately skilled labor force, the latter employment stability and a reasonable level of insurance. Consequential, in this kind of context, capital is not going to move somewhere else only because taxation is lower (Hiscox 2002: 593-609; Lucas Jr. 1990: 92-96)¹⁸, nor is a labor force that (a) enjoys better working and insurance conditions than workers in a non-coordinated environment and (b), in the event of the sector collapsing, is not easily re-employed somewhere else¹⁹. In this last case only a share of the potentially “long term dependent population” may be attracted by the higher benefits provided by some other region. I will come back to this specific case later. Alternatively, people working in non-specialized sectors are considered to be more mobile given their higher chances of being re-employed. Thus, in terms of our model, mobility is understood as happening mainly from the poor to the rich regions²⁰ in the context of non specialization and, to a lesser

¹⁸ Hiscox (2002:603) reports evidence that in the USA for the period 1824-1994 variation in factor mobility depends on the variation, along the different stages of industrialization, in state 's and inter-industry coalitions.

¹⁹ The literature on the negative effects on geographical mobility of future labor market prospects is very rich. Indeed, labor economists tend to treat migration as a human capital decision, affected by a similar set of factors. See, for a review of this literature, Benjamin, Gundersson and Riddell (1998:343-357).

²⁰ Specific models of greater mobility of the poor have shown that, contrary to what is conventionally argued, it may lead towards higher

extent, from the rest of the country towards the economically successful specialized regions.

In the context of selective mobility, assumed in this model, it is argued that some redistributive policies are more likely to be affected by geographical second order effects than others. Obviously, for those policy realms in which mobility is less likely to take place, the level of redistribution is not affected by the strategic interaction between incumbents. Nevertheless, in this situation non geographical second order effects have yet to be taken account of in ascertaining the distributive consequences of decentralization.

The main point to be made here is that factor mobility, even if selective, transforms the incentives underlying the institutional design via two mechanisms: (1) a reduction in the differences across regions in terms of the risk profiles of individuals, and (2) by operating a multiplier effect that transmits to the rest of the union a regional specific shock affecting only some of the units²¹. As a result of both processes the scope for risk sharing between regions increases, which in turn changes the structure of incentives and, eventually, may lead, according to the argument developed in the previous section, to a change in the territorial design of redistribution mechanisms.

In order to show how the first mechanism works, let me first discuss what happens in the absence of specialization. If we consider two regions in which a share of the population (the non employed) of the poor region is free to move to the rich region, the net distributive outcome of the first round is a reduction in the average income differentials between the regions. In fact, in the

equilibrium levels of redistribution. See Wellisch and Wildasin (1996: 187-217), Mazza and Van Winden (1996: 333-363) and Hindriks (2001:95-120).

²¹ On the basis of a 2x2 general equilibrium trade model, Hiscox (2002: 605) comes to conclude that "for any change in relative prices induced by a shift in trade policy or trade flows, the income effects for workers (capitalists) in different industries will be more similar when labor (capital) mobility is higher, all else equal".

extreme scenario of perfect labor mobility, it has been shown that the only possible equilibrium is one in which “the two countries offer an identical tax and public good package” (Bolton and Roland 1996: 102; Hansen and Kessler 1999)²². In terms of our model, a recurrent pattern of movements between the poor and the rich regions implies that an increase in the share of the dependent population in the rich region is generated by a reduction in the dependent share in the poor one. All in all, other things being equal, this leads to a higher level of risk sharing and, eventually, to a shift in the underlying structure of political incentives towards centralization.

Let us focus now, instead, on a country formed by a rich-specialized and a poor non-specialized region, where the regions have initially the same average income. Assume, additionally, that, due to exogenous circumstances, the economy in the non-specialized region collapses, creating a mass of workers with general skills, and therefore potentially re-employable in the non-specialized industries of the specialized region. All those who move from the non-specialized region trigger a multiplier effect operating on the region specific shock suffered by the poor-non-specialized region into the rich-specialized one. This process can hypothetically generate two consequences: (a) A homogenization effect on the risk profiles of the two regions, similar to the one depicted above, in which case the mass of workers is actually absorbed by the better off region. Again, the likely outcome is an increase in the tolerance of centralized, common solutions, since a reduction in the differential between regions in terms of specialization would lead to a reduction in the distance between their risk profiles. (b) Alternatively, a more likely possibility is that the labor surplus cannot be absorbed and the rich-specialized

²² The fact that the equilibrium described is the only possible one is contingent on the specific assumptions adopted in these two papers. The basic intuition and key insights of this branch of the literature go back to a paper by Stiglitz (1977: 274-333) where it is shown that, depending on the assumptions adopted, multiple equilibria cannot be ruled out straightforwardly.

region faces the risk of having an inflow of dependent people that cannot be employed. In terms of our model, due to mobility, S and λ would increase in both regions, with consequent effects on preferences towards both the level and the institutional design of redistribution mechanisms: the rich-specialized regions would be willing to devote some of its resources to prevent this inflow by helping the poor-non-specialized region's economy. This may be done either by endorsing a centralized design or, more likely, by supporting a schema for inter-regional redistribution (Hansen and Kessler 1999).

Recall that in the previous section it was pointed out that, in order to overcome the trade-off between autonomy and insurance under conditions of partial risk sharing, the institutional design can be made bi-dimensional, i.e., combining the decentralization of redistributive policies with the launching of inter-regional transfers. In the context of partial risk pooling, our second scenario, sharing the multiplier effect across territories inherent to mobility is more likely to affect the institutional design via this second dimension, i.e. the size of interregional transfers. In what way? In order to avoid an unwanted inflow of people who are not easily employed in the local economy, the specialized region has an interest to regulate, for that particular policy, a set of national standards that eliminate anybody's incentives to move and, accordingly, to substantially increase inter-regional transfers, so that all regions can meet the provisions required by national standards²³. At this point it is worth noting that the combination of large inter-regional transfers and national standards is equivalent to centralization in both goals and outcomes.

Therefore it can be concluded that by contributing to an increase in the overall levels of risk sharing, either by homogenizing risk profiles or by transmitting the impact of a unit

²³ A similar process would take place if the circumstances of this case were reversed and the region hit by the unit specific shock happened to be the specialized one. An often mentioned example here is the way Canada has handled the economic crisis of its maritime provinces (Coulombe 1999).

specific shock across territorial boundaries, the existence of geographical second- order effects modifies the structure of incentives underlying the institutional design, such that the need for that institutional structure is less clear.

This section has identified two major sources of dynamism in the relation: on the one hand the impact of exogenous changes on the relevant parameters of the model; on the other, the feedback process linking the consequences of redistribution and its institutional design. Putting them together, it is reasonable to conclude that the design adopted across different policy fields is constrained to be, at best, an unstable equilibrium (Bednar 1999).

2.4.- Summary of Hypotheses

In this chapter I have developed an analysis of the different stages in the dynamic relationship linking decentralization and income inequality. After an analysis of the reasons why decentralization, exogenously considered, affects the distribution of income, the following conclusion was reached, namely that the key to understanding this relation is to open the black box of the determinants of the institutional design of redistribution mechanisms in decentralized contexts. After that I showed that the territorial structure of inequality occupies the largest share of this black box. In so doing the chapter has highlighted a hidden dimension in the relation between decentralization and inequality. Finally, I have completed the picture by explaining what happens once the territorial design of redistribution mechanisms has been completed in the first instance. The analysis of the factors conditioning the dynamics of the relation has shown that it seems unreasonable to expect any stable equilibrium in the territorial distribution of redistributive powers.

To conclude, a number of testable hypotheses have been derived from the different steps undertaken in this chapter. Following the sequence of the argument these can be presented as follows:

H1: Once we control for endogeneity, it is expected that the impact of decentralization on inequality at the aggregate level is significantly reduced or even ceases to be observed as a statistically significant relationship.

H2: Depending upon the status quo in terms of territorial inequalities, decentralization can generate very different consequences for the overall levels of redistribution and income inequality. In this sense, the role of decentralization is to trigger the underlying factors that generate two potential effects: (1) a “between levels “ effect (decentralization modifies the level of redistribution but this level does not vary across regions) and (2) a “diversification” effect (decentralization modifies the level of redistribution and this level does vary across regions).

H3: The levels of decentralization depend upon the territorial structure of inequality. The greater the regional disparities in terms of income/labor market structures, the higher the levels of decentralization should be, even after introducing the relevant controls for endogeneity.

H4: At the aggregate level it should be noted that the impact of decentralization varies by welfare policy, depending on the scope of risk sharing that characterizes each policy realm. For those policies covering universal risks (pensions), we should observe that decentralization has no effect when comparing all OECD nations. The opposite should be observed the more targeted and regionally specific are the populations and risks covered by the program. The scope of risk sharing also accounts for differences among national experiences within the same policy realm.

H5: High levels of inter-regional mobility (in part defined as a second order effect of redistributive policies themselves) increase the scope of risk-sharing and therefore create incentives for centralizing redistribution.

The detailed derivation of these hypotheses from the theoretical model together with devising and implementing a number of methodological strategies to test them, is the focus of the coming sections of the dissertation.

PART II:

THE DISTRIBUTIVE CONSEQUENCES OF DECENTRALIZATION

Introduction

According to our theoretical model, the rationale behind the study of this link lies in the fact that the relevant political actors have an expectation concerning the distributive consequences of any given institutional change. In other words, the structure of inequality conditions the institutional choice because institutions do indeed have distributive effects. More specifically, the argument presented in Chapter 2 is that inequality shapes the process of institutional design precisely because the distributive consequences of such a choice are contingent upon the pre-existing territorial structure of inequality. Hence the distributive effects of decentralization become central to the overall understanding of the relation. Part II of the dissertation analyzes these effects in detail.

The existing studies of the impact of decentralization on the welfare state and inequality (reviewed in Chapter 1) are built upon regression analyses that (1) are based exclusively on observables

and (2) assume the impact of decentralization to be exogenous. In this dissertation, following recent contributions (Przeworski et al. 2002), the study of the distributive impact of decentralization is thought of as a counterfactual exercise. The differences between the two approaches are many. Thus, before the implications of the model relating to the distributive consequences of decentralization are actually tested, Chapter 3 considers several methodological issues surrounding the study of the distributive outcomes of political choices and institutional designs. In this framework, the chapter develops a detailed consideration of the analytical implications of the existence of several orders of incidence, discusses different ways of confronting them and puts forward a number of reasons to turn to micro-simulations as a methodological alternative to regressions using aggregate data.

Thereafter, Chapter 4 is devoted to the implementation of these two methodological approaches to studying the distributive consequences of decentralization. In so doing it starts by testing, on the basis of aggregate data, the proposition that "once we control for endogeneity it is expected that the impact of decentralization on inequality is reduced or even ceases to be observed at a significant level" (H1). Subsequently, Chapter 4 tests the idea that the impact of decentralization on inequality can be decomposed into a between units effect and a diversification effect whose magnitude depends upon the pre-existing structure of inequality (H2). This is done by analyzing the differences in the distribution of income across an actual decentralized European federation and a simulated one in which redistributive policies would be centralized. The logic underlying this exercise is the following one: a good way to illustrate the distributive consequences of decentralization is to actually reverse the process and look at the changes in the overall and national/regional income distributions due to the development at the central level of several redistributive strategies. The decentralized welfare policies are those policies currently developed by national welfare states. The centralized ones are the ones implemented by a "would be" European federation. The difference between the actual and the

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simulated measurements of inequality and poverty are, under conditions to be specified, attributable to the difference between the two institutional designs. This reveals the distributive consequences of (de)centralization. A discussion of the implications of the results for the arguments addressed in the dissertation builds the bridge to Part III of the thesis.

CHAPTER 3

METHODOLOGICAL ISSUES IN THE STUDY OF THE DISTRIBUTIVE EFFECTS OF INSTITUTIONAL CHOICES

Being a counterfactual exercise, the study of the distributive consequences of decentralization faces several methodological challenges. The implications of the existence of second order effects of re-distributive policies and institutional changes are a major issue here. If large enough, they are likely to bias our estimates of inequality and, more importantly, to rule out the cotenability condition, i.e., the idea that the new picture emerging after the institutional change will be one in which everything else is identical to the past but the direct consequences of the event of interest (Fearon 1991: 169-195). By second order effects I refer, conventionally, to the distributive impact of a policy/institutional change that takes place through the behavioral responses by market actors to such a change/intervention, i.e., what happens beyond its direct distributive effects. As a result when, for example, two measurements of inequality from samples drawn at two different points in time are compared, it is simply not possible to establish which proportion of the distance between them is due

to the intervention itself and which is due to the behavioral responses to it.

This chapter is devoted to exploring these issues as well as selecting the most appropriate methodological approach to handle our problem of interest. The first section of the chapter discusses in detail the importance of second order effects when assessing the impact of specific taxes and transfers on the distribution of income. Section two develops an illustrative case study of the role of second order effects in the analysis of the political determinants of the income distribution in the OECD. This analysis highlights the salience of considering several orders of incidence and provides an estimate of the magnitude of second order effects. The final section of the chapter summarizes the methodological implications of the analysis for the specific purposes of the thesis. It considers some ways to cope with the existence of several orders of incidence and elaborates on the reasons why micro-simulation analysis is to be preferred to the standard regression approach for the study of the distributive consequences of alternative institutional designs. The main advantage of this latter approach, I will argue, lies in the fact that it allows us to better impose on the data the above defined *cotenability* condition.

3.1.- Institutional Designs and Distributive Outcomes: the Problem of Incidence

Generally speaking, by incidence I refer to the study of the distributive effects of public policies (mainly taxes and transfers) and institutional designs (in our case decentralization) on a number of different realms, be those factors of production, regions, classes or individuals². This type of analysis is neither simple nor straightforward.

² 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).

Suppose we calculate the general equilibrium of economy A before and after an increase in the personal income taxation designed to finance a new transfer for low earnings families is introduced³. Let us consider first the direct effects. Atkinson and Stiglitz (1980:160-199) 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 real income of those upon whom the tax is levied is smaller than the magnitude of the tax” (p.160). We can observe the reverse 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 also have inter-temporal, indirect effects. To put it straightforwardly they generate behavioral responses from market actors, who adjust their economic decisions to the nature and changes of policy interventions. Consumption patterns, saving decisions, geographical mobility and labor supply are four examples of spheres where reactions could 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”. Our attempt to estimate the impact of decentralization on income inequality requires a similar comparison. The number of dimensions involved under the label redistribution is so high that it

³ Examples of a similar fashion can be found in Atkinson (1994).

is very difficult to foresee any existing 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 are not model-specific. In other words, it is more than likely that our a priori assumptions about the treatment of side-effects has some impact on the results and eventually on the conclusions of the analysis. Hence the question is not whether or not we ought to make assumptions within the framework of counterfactual reasoning, but how crude or accurate these are and, more significantly, how they help in clarifying (or obscuring) 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 behavioral 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 incidence⁴.

First order incidence: in this framework the impact of transfers and taxes is purely cross-sectional. The behavioral 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 assumptions underpinning many of the standard techniques for

⁴ 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.

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estimating the effect of taxes and transfers, like the conventional exploitation of household budget survey data or even simulations of policy changes at one point in time. Although it would be quite possible to apply Lorenz curves to indicators of individual welfare that take into account behavioral reactions (Atkinson and Bourguignon 1990: 3-29), the vast majority of the studies of the distributive incidence of decisions on taxes and transfers compare indicators before and after the intervention adopting a first order incidence framework. By and large, this is the dominant approach in the quantitative studies of the political determinants of inequality.

Second Order Incidence: the major difference in relation to the previous approach is precisely that the behavioral 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 either are designed to keep second order effects away (i.e. the analysis works as if there were no such effects) or alternatively, incorporate behavioral responses (both in a static as well as in a dynamic way⁵) into the models⁶.

⁵ 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 behavioral responses, which allow the calculation of second order effects due to changes in, for example, labor supply or fertility, following a policy change. For dynamic models, incorporating behavioral responses means altering the nature of the transition probabilities that are used to compute the age of the micro-units. In practice this is rarely done".

⁶ 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.

Third Order Incidence: includes the consideration of lifetime and/or inter-generational issues when assessing the impact of the intervention of interest. Both are beyond the concerns of this chapter.

Since the first approach is not only the most widely applied in cross-national analyses of income inequality, but also the one eventually adopted in this research, 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 completely identified disturbance to the economy, (2) when considered as part of a policy package or institutional sub-system, the interaction between two or more of these disturbances should have no effect and (3) that disturbance considered in itself should have no second order, unintended, effect on the way the economy works. There are well grounded reasons to believe that neither of these conditions hold for the processes generating the time series of data on redistribution and inequality across OECD nations. Policies and institutional changes 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). Therefore, taking the opposite view as a point of departure is likely to have significant analytical costs for the study of the distributive consequences of any given policy or institutional change. To put it simply, the larger the magnitude of second order effects the further away we shall be from building an analytically useful counterfactual scenario. How much should a researcher worry about them?

In the next section I turn to offer an empirical illustration of the extent to which ignoring the role of second order effects may obscure our understanding of the political and institutional determinants of income inequality. Thereafter I derive the specific implications of this discussion for analyzing the relationship between decentralization and income inequality.

3.2.- An Empirical Illustration: Second order effects of redistributive policies in the OECD

3.2.1- Posing the Problem: under-explained patterns of inequality in the OECD

Over the last decade two rival conventions in relation to the linkage between politics and inequality can be identified. The first one, recently described 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.

Among these authors⁷, no matter how wide the disagreement concerning the causes is, there is a convergence on predictions: an

⁷ 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: 15-32), some others stress the domestic nature of the economic transformation, pointing to deindustrialization. These authors consider deindustrialization 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: 313-349) make a strong case in favor of the domestic character of deindustrialization. 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 deindustrialization. He concludes that deindustrialization in the contemporary period has not been the result of a “natural” process of positive deindustrialization (derived from the maturity of the economy) alone; “[...] the results also indicate a role for “negative

inevitable upsurge in the levels of market income inequality across the OECD. This prediction is supported by the review of the evolution over time of the Gini coefficient for market inequality included in Table 3.1⁸. Market income inequalities have increased in advanced industrial societies over the last two decades.

In addition, globalization⁹ is often attributed an efficiency effect vis-a-vis 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 non competitive 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 in disposable income.

The second and more recent convention, rooted in comparative political economy, has proved these predictions wrong. Within the

deindustrialization”, 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 deindustrialization”. The presence of a manufacturing trade surplus tends to lead to 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 employment and real value added” (p.605).

⁸ 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).

⁹ For a review of the theoretical and empirical aspects of globalization and its consequences, see Schulze and Ursprung (1995: 295-352).

growing body of literature on *varieties of capitalism* the importance of political and institutional determinants of cross-national differences in wage inequality is a recurrent argument (Rueda and Pontusson 2000: 350-383; Wallerstein 1999: 649-680; Iversen 1999). In addition, Iversen and Cusack (2000: 313-349) have also shown that Deindustrialization is actually a major factor underlying 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 2001: 859-875; Boix 1998; Mulé 2001). One major leitmotiv underlies this literature: politics, in multiple ways, makes a difference for the distribution of income.

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 1991; Gottschalk and Smeeding 1997: 633-687; 2000: 261-304; Atkinson 2000a). Table 3.1 presents a comparison of measurements of inequality (the Gini coefficient) for market and disposable income for the working age population (18-65)¹⁰.

Two conclusions can be drawn from columns 2 and 3 in Table 3.1. There appears to be a common upward trend across OECD economies in 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 a similar pattern to what observed for gross income (Australia, Italy, UK, USA), some others are quite able to control the non-egalitarian effect of the market, maintaining a stable level of inequality (Canada, Germany, France, Finland) or even reversing the upward trend (Sweden, Denmark). In principle, the story is quite simple. Several structural economic

¹⁰ See the Data Appendix for the definition and sources of these variables.

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Table 3.1. *The Impact of Politics and the Puzzle of Egalitarianism*

	Inequality (1)	Market Income Inequality (2)	Disp. Income Inequality (3)	Redistri- bution (4)	Welfare Effort (5)
Australia					
80s	2.83	0.327	0.270	0.172	23.312
85s	2.73	0.352	0.281	0.200	27.053
90s	2.81	0.361	0.292	0.190	26.592
95s	2.91	0.363	0.294	0.189	28.172
Canada					
80s	4.02	0.325	0.274	0.157	27.710
85s	4.45	0.343	0.289	0.183	30.356
90s	4.40	0.346	0.283	0.181	30.337
95s	4.18	0.353	0.290	0.178	32.657
UK					
80s	2.98	0.309	0.252	0.184	27.847
85s	3.19	0.344	0.269	0.219	30.680
90s	3.41	0.376	0.337	0.105	28.839
95s	3.46	0.406	0.342	0.157	33.620
USA					
80s	3.83	0.351	0.292	0.169	23.947
85s	4.13	0.365	0.323	0.117	22.383
90s	4.33	0.388	0.332	0.144	23.512
95s	4.60	0.409	0.349	0.146	24.960
Belgium					
80s	n.a.	n.a.	n.a.	n.a.	35.305
85s	2.40	0.266	0.223	0.160	36.362
90s	2.30	0.284	0.220	0.224	34.892
95s	2.24	0.303	0.246	0.190	38.131
France					
80s	3.25	0.363	0.295	0.189	31.596
85s	3.12	0.346	0.281	0.1878	38.901
90s	3.26	0.365	0.282	0.228	37.136
95s	3.08	0.412	0.293	0.288	41.006
Germany					
80s	n.a.	0.272	0.225	0.173	32.416
85s	2.93	0.321	0.229	0.287	33.455
90s	2.72	0.327	0.239	0.267	31.414
95s	2.86	0.354	0.278	0.215	36.710
Italy					
80s	2.64	0.346	0.322	0.071	30.452
85s	2.62	0.328	0.304	0.071	32.026
90s	2.35	0.311	0.293	0.058	33.526
95s	2.41	0.393	0.341	0.135	34.131

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(Cont. Table 3.1)

	Inequality (1)	Market Income Inequality (2)	Disp. Income Inequality (3)	Redistri- bution (4)	Welfare Effort (5)
Japan					
80s	3.01	0.360	0.330	0.083	19.682
85s	3.11	0.397	0.342	0.138	20.201
90s	3.17	0.430	0.360	0.163	20.162
95s	3.00	0.440	0.357	0.189	22.911
Netherl.					
80s	2.54	0.313	0.258	0.178	41.893
85s	2.50	0.309	0.246	0.205	41.625
90s	2.62	0.319	0.261	0.183	40.281
95s	2.82	0.332	0.252	0.240	40.207
Denmark					
80s	2.18	n.a	n.a	n.a	39.449
85s	2.15	n.a	n.a	n.a	39.555
90s	2.22	0.341	0.222	0.349	41.661
95s	2.47	0.376	0.256	0.320	45.209
Finland					
80s	2.47	n.a	n.a	n.a	26.484
85s	2.61	0.289	0.199	0.310	30.543
90s	2.49	0.306	0.202	0.339	30.990
95s	2.34	0.364	0.222	0.391	45.597
Norway					
80s	2.06	0.283	0.2132	0.248	29.479
85s	2.05	0.265	0.216	0.186	30.312
90s	2.01	0.297	0.213	0.283	37.144
95s	1.99	0.335	0.226	0.325	35.995
Sweden					
80s	2.03	0.302	0.197	0.347	43.679
85s	2.06	0.326	0.213	0.348	44.090
90s	2.01	0.341	0.218	0.362	45.525
95s	2.20	0.380	0.224	0.410	48.062

(1) to (3) See Data Appendix 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.

transformations boost income inequality. Governments, depending upon the scope of the change, partisan politics and diverging institutional settings, play a 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 main goal of this section is to point out that one should not take these indicators as the end of the controversy. These measurements are rooted on rather crude assumptions as to what the logic of redistribution is. To refer back to the previous section, they are all based on a first order incidence approach. This fact may well be affecting our understanding of the politics of income inequality in the OECD. Indeed a closer look at Table 3.1 provides some evidence that this may well be the case. According to the figures in Table 3.1 two different phenomena appear to be at work: on the one hand low levels of wage inequality coexist with larger welfare states (from now on I shall refer to this coexistence as the puzzle of egalitarianism). On the other hand market income inequality shows a relative cross-national convergence towards some higher level. So large welfare states appear to exist alongside even distributions of wages, very unequal distributions of market income and very equal distributions of disposable income. Why?

Posing this question suggests that the analysis of the distributive effects of policies and institutions is far more complex than conventionally assumed. For instance, while the *puzzle of egalitarianism* challenges directly the implications of the conventional median voter model of redistribution (presented in Chapter 2), a selective comparison between the indicator of market income inequality and the one of welfare effort in table 3.1 would support it. The remainder of this section argues that in order to make sense of these puzzling patterns, and eventually better grasp an understanding of the distributive consequences of political and institutional choices, the existence of several orders of incidence must be given serious consideration.

The argument can be outlined as follows. Distributive and redistributive processes do not follow a simple sequential pattern.

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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, moving beyond first order incidence and estimating the magnitude and direction of second order effects of taxes and transfers becomes a must. In doing just that this section hypothesizes that both wage inequality and market income inequality are to a significant extent a function of the welfare state. For instance, suppose that a country has a generous early retirement scheme. This increases market income inequality among the total population at the same time it reduces disposable income inequality. Moreover, it may also reduce wage inequality if the people taking early retirement are the low paid. In the study of the nature of this relation lies a strategy for providing answer to the questions posed by the puzzle of the coexistence of egalitarianism and the rapid convergence towards higher levels of market income inequality.

Let us go back for a moment to the conditions necessary for first order incidence to be taken as a reasonable analytical framework. There is no reason to believe that the data in Table 3.1 fail to satisfy 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 a *policy package*. These two conditions, in principle, are not likely to introduce any bias. On the contrary, the same cannot be argued about condition 3, namely that the intervention of interest should have no second order, unintended, effect on the way the economy works. 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 to the way markets work, and, ultimately, how earnings and market income inequality are set.

Once this assumption is questioned, it could be argued that the results presented in Table 3.1, column 4, and hence the implications derived from them about the redistributive role of government's budgets, are misrepresenting the relation between redistribution and inequality. The nature of the problems and their implications for our concerns can be better exemplified in the context of an inter-temporal world. If governments' decisions about redistribution affect the behavior of market actors (for instance capital investment, savings, geographical mobility or labor supply), they are likely to affect the level of market income inequality. Therefore, if the standard definition of redistribution is assumed and policies at $t-1$ contributed to an increase in market income inequality, the levels of redistribution at t will be overstated. 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 bound to differ. 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.

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By now it is clear that the coexistence between the puzzle of egalitarianism and the process of convergence to higher levels of market income inequality cannot be understood within a pure first order incidence framework, since the processes and mechanisms that could potentially account for them are assumed away. An analysis of the way in which redistribution affects the distribution of wage and market income inequality is in order, to assess the specific magnitude of second order effects of redistributive policies in the OECD. In what follows the guidelines of such an analysis are outlined.

3.2.2.- The importance of second order effects: theoretical underpinnings

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 for work. In this respect, conventional expectations regarding the effects of taxes and transfers have been derived from static partial equilibrium analysis, again anchored on rather simple assumptions. To put it very shortly, the effects of taxes and transfers, as considered by the standard theory of labor 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).

Regarding 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 far from obvious (Atkinson 1993: 24-26). Nonetheless, in the case of wage inequality it is generally assumed that the income effect is dominated by the substitution effect, especially 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*, in an 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 income (M) imply the consideration of different samples of people in the calculation of both indicators. As a result of the inclusion of 0 earners, and as 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

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

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 for more time to be devoted to activities (be it leisure or job search) other than working and therefore raises the opportunity cost of taking up additional hours of paid work¹². All in all, this leads agents to expect that the higher the levels of generosity at t , the lower the levels of wage dispersion at $t+1$ ¹³, since the labor supply reaction of (actual and potential) workers, mainly at the bottom of the distribution, has a 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, 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 labor supply: the total absence of a life-time dimension in the actor's decision making

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). For a more recent survey on labor supply and its determinants, see Blundell and MaCurdy (1999: 1559-1695).

¹³ For an argument in which the mechanisms linking an increase/cut in the UB are related to labor supply, wage bargaining relations and taxation levels, see Coe and Snower (1997:16-17). See also Snower (1997: 163-199).

process on the one hand, and the lack of consideration given to institutional differences among labor 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 1992: 747-757; 2001). Contrary to the income effect, the insurance effect of transfers may encourage entrance into the labor 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 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 what these features are and how they may reshape the expected pattern of second order effects of taxes and transfers.

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 unemployment benefits, within the context of a richer general equilibrium framework, has been analyzed in detail (Atkinson 1993, 1999; OECD 1996). In line with the argument about the combined income and insurance effects of transfers, Nickell (1997: 55-74) finds that high replacement rates, at the same time, boost unemployment and create incentives to

enter the labor force, since it reduces the risks 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 not included in the basic model. Going one step further, Atkinson and Micklewright (1991:1679-1727) reach a rather different conclusion than the one obtained by the basic model of labor supply. They point to diversities in the policy and institutional designs as the reasons that may explain why the econometric evidence on the impact of unemployment benefits on labor market transitions "is far from robust" (1720). Depending on the surrounding conditions the impact of unemployment benefits on labor supply can work in rather different ways.

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 related institutional features. Hence, causal statements may be taken with a 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 considered to be 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 identified a number of features around which nations' institutional specificities tend to cluster. In both the origins and the functions of different welfare states two motives coexist. These are redistribution and insurance (Atkinson 1995; Barr 1992: 747-757; 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 chapter, three dimensions are particularly relevant: (i) the way the welfare state is funded, (ii) the nature of the institutions operating in different labor markets and, finally, (iii) the design of the transfer policies and their 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 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 3.2 groups OECD countries in three groups according to their score in these indicators. Continental European welfare states are mainly funded via social security contributions, while the Nordic and the Anglo Saxon countries ones are more funded through the income tax. As aggregated as it is, this indicator measures the level of conditionality of benefits in relation to previous earnings. Theoretically speaking, conditionality is thought to have an impact on the way in which second order incidence works. Once life-cycle considerations are added to the basic model, I would 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 labor force. And precisely because of that, it generates second order effects of transfers that work in the opposite direction to the income effect highlighted by the basic model.

Table 3.2. 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: OECD, National Accounts, several years

Risks and labor market institutions are very much interrelated. The insurance function of the welfare state has recently been analyzed as the tool solving a coordination problem between employers and employees, namely the problem of skill investment (Estevez et al. 2001: 145-184). 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. To put it very crudely, specific skills are less portable and entail more risks. In terms of the model developed in the previous chapter, the less general the skills, the higher the incidence of individual specific risks. Therefore, in order to solve the coordination problem, higher levels of both employment and unemployment protection are needed. Risk structures and social policy preferences diverge according to the composition of skills and these relate to labor market institutions and welfare state policies.¹⁴ Countries whose productive structure is more dominated by specific skills provide higher levels of social and labor market protection. (Iversen and Soskice 2001: 875-895)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. 2001:145-184) 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 (2001:145-184) I consider as general skills countries UK, USA, Canada and Australia. All the others out of my

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More specifically, in relation to the institutional configuration of the labor 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 bargaining reinforce each other. As Coe and Snower (1997: 3) have argued in the context of their study of policy complementarities relating to the unemployment problem, generous benefits give "insiders more leverage in pushing up wages"¹⁶. That increases the relative weight of unionized 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 an intra-occupational compression of wages and the setting of an effective upper threshold around the negotiated rate. 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. Suppose that 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 invert 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 vis-a-vis previous earnings, which is mainly a feature of

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.

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

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 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 labor force to enter it and qualify for future, relatively more generous, benefits. If this effect is strong enough it may overrun the income effect and reverse the direction of second order effects derived from the basic model.¹⁸

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: 443-472; Esping-Andersen 1999). NIT designs are thought to combine a reasonable level of income maintenance with the creation of incentives to

¹⁷ Wallerstein and Moene (2001: 859-875) 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 reverse 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)

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 .

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enter the labor force. Whether they succeed 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 disappears)". Second order effects are contingent on 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 in an increase in the effective marginal tax rate relative to 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 reverse such 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 were not previously working. That would lead to second order effects in the opposite direction compared 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 shown to be 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 invert the conventional second order effects of higher levels of generosity. In fact, the major concern of these programs is medium run efficient

reallocation of people to jobs 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). Behavioral responses are, so to speak, institutionally constrained by the 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. Bearing in mind these institutional diversities as the criteria for classifying 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 (fn.15), the welfare state is funded mainly via income tax, benefits are targeted and poverty traps are confronted through the introduction of NIT components in the relevant welfare policies. The second one includes countries (Germany, Austria, Belgium, France, Italy, Japan, Netherlands) where the risk structure is dominated by specific skills, labor markets show medium levels of centralization of wage bargaining (Iversen 1999:12), the welfare state is mainly funded via social security contributions (see Table 3.2), there are high levels of conditionality on previous earnings and benefits offer 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, labor markets present the highest levels of wage bargaining centralization, the welfare state is funded mainly via income tax, its transfers system provides universal and relatively high net replacement rates and the poverty trap is mainly tackled by the implementation of compulsory active labor market policy measures.¹⁹ Both the second and the third groups, with the

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).

exceptions of Japan and Italy, offer high levels of employment protection (OECD: 1999).

Table 3.3. *The Institutional Contingency of Second Order Effects*

SUMMARY		
	WAGE INEQUALITY	MARKET INCOME INEQUALITY
ANGLO SAXON COUNTRIES (ASWR)	+	-
CONTINENTAL EUROPEAN COUNTRIES (CEWR)	+/-	+
SCANDINAVIAN COUNTRIES (SWR)	-	+

To conclude this section, Table 3.3 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 increases 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 labor market policies to ensure future employability are expected to foster these effects.

In the case of continental welfare regimes two of their features may induce second order effects that work in opposite directions. On the one hand, high replacement rates and medium to high levels of unionization and wage bargaining centralization are 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 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 pay less 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 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 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 lower tax-back rates, which in turn makes the level of income at which the benefit disappears relatively high. Under these conditions, the tax wedge effect is

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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 reversed in this particular cluster of nations. Other things being equal, an increase in levels of generosity will be associated with an increase in levels of wage inequality and a reduction in levels of market income inequality. In the next section we turn to the empirical analysis of these hypotheses.

3.2.3.- Second Order Effects of Redistributive Policies in the OECD: Empirical Analysis

The development of this section is as follows. First, I discuss some methodological problems and the strategies adopted to solve them. In 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 effects²⁰. Finally, I discuss the findings and their implications in relation to the argument developed in section 1.

3.2.3.1.- 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 first section, it is necessary to take as a case study an indicator of both wages and market income inequality, test whether or not there is an independent effect on its evolution to be attributed to fiscal redistribution policies and see whether or not such an effect shows the expected patterns. For these purposes, I have taken as dependent variables national indicators of earnings and market

²⁰ Details about the sources and construction of all the variables used in this chapter are given in the Data Appendix.

income inequality in the OECD between 1980 and 1995.²¹ The independent variables of interest include an indicator of the generosity of unemployment benefits and an indicator of the effective labor tax rate, as measured by Mendoza, Milesi-Ferretti and Asea (1997: 99-126). The definitions of both the dependent, the control and the independent variables of interest are presented below.

I have chosen to introduce an indicator of generosity rather than spending for a number of reasons. First, as I have argued above, because the main link between policies and market actors in this realm relates to the consequences of transfers for 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 for 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 analyzed in the former section included arguments relating to 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 across all 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.

²¹ 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 a lack of information.

General Model:

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

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 generosity.²² 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 dataset, in this case, the 15 OECD nations included. The subscript t refers to the time period²³. Finally the subscript j denotes 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

²² 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.

²³ Note that no year dummies are included in the specification. Their inclusion would take away a large proportion of variance of interest and, moreover, it would also introduce a problem conventionally known as the "Nickell bias". If time period dummies are included and a different intercept for each of the units-time periods is considered such that α_{it} becomes the constant term in the specification above, then the bias stems from the fact that there is a correlation between the lagged dependent variable and the time component of the error term ($\text{Corr}(Y_{t-1}, \varepsilon_t) \neq 0$). The larger the value of t, the smaller the magnitude of the bias. Given the relative low values of time periods in this dataset, the introduction of year dummies could bias significantly the results.

constrained to vary across the three institutional clusters identified above. Hence the form of the model becomes,

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

$$\text{CEWR} * \beta^j G_{i,t-1}^j + \text{CEWR} * \beta^j (G_{i,t}^j - G_{i,t-1}^j) + \text{ASWR} * \beta^j G_{i,t-1}^j +$$

$$\text{ASWR} * \beta^j (G_{i,t}^j - G_{i,t-1}^j) + C_i + \varepsilon_t,$$

where SWR denotes the Scandinavian cluster, CEWR denotes the continental European one and ASWR depicts the Anglo-Saxon political economies. The cluster variables are based on the summary of the institutional contingency of second order effects presented in table 3.3.

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 specification²⁴. In addition, error correction models have a few other features worth noting. First, the parameter of the lagged dependent sets up a model with a long-run equilibrium. Normally it should have a value within the 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 to long term equilibrium. Secondly, unlike other estimation strategies in the context of time series cross-sectional datasets, the dynamic component is treated as a source of salient information about the processes of 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

²⁴ These are first order serial correlation, spatial correlation in the error term and panel heterocedasticity (Beck and Katz 1995:p.634; Hicks 1994: 170-173).

of the variable of interest by minus the coefficient obtained for the lagged level of the dependent variable²⁵. 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, there is a further issue to be addressed. There are strong theoretical and empirical reasons to believe that the levels of generosity and the levels of inequality are endogenous (Wallerstein and Moene 2001: 859-875; Iversen and Soskice 2001: 875-895). Therefore, any result apparently consistent with the arguments developed in the chapter could be challenged on grounds of reversed causality²⁶. In order to discount such a charge I have re-estimated the above specified models using a two-stage least squares 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 deindustrialization, unemployment, the ideology of the 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 3.4 to 3.6 include both specifications.

²⁵ 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 $Y_{i,t} = (1 - \beta_1)Y_{i,t-1} + \sum \beta_j^j X_{i,t}^j + \text{Error}$, which, in this paper, is rewritten as $(Y_{i,t} - Y_{i,t-1}) = -\beta_1 Y_{i,t-1} + \sum \beta_j^j X_{i,t}^j + \text{Error}$, expression in which the long term equilibrium parameter is $-\beta_1$.

²⁶ A more detailed discussion of the nature of the problem of endogeneity, applied to the central interests of this thesis, is developed in the next chapter (section 4.2).

3.2.3.2.- *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 percentile ratios. 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 on the share of the wage distribution being analyzed.

Market Income Inequality: Gini coefficient of household market income per equivalent adult, calculated by the author.

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 labor markets and organize the relations between productive factors. The last one includes the two variables of interest, namely generosity and effective labor tax rate.

Changing Economic Conditions

Unemployment: standardized unemployment rate, OECD, *Employment Outlook* various issues. There is no theoretical consensus concerning the expected direction of the effect of this variable (Rueda and Pontuson 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 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 amongst 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, the idea being that the change in the amount of national income affects the way it is distributed in a non monotonic, inverted U shape manner (Kuznets 1955). Advanced industrial societies should be on the downward sloping part and the expected relation should be negative.

LDC: non OPEC trade as a percentage of GDP. As such, it is expected to test the distributive consequences of globalization. The higher the rate, the higher the imports of manufactured goods from these countries, and therefore the higher the inter-sectoral wage dispersion.

Trade Openness: is included as a broader indicator of globalization in the regressions for market income inequality. Total imports and exports on good and services as a percentage of GDP.

Deindustrialization: this variable is defined by Iversen and Cusak (2000: 313-349) as 100 minus the sum of manufacturing and agricultural employment as a percentage of the working age population. Deindustrialization is supposed to have two major effects: (1) an increase in the share of employment in the service sector, which in turn is far less unionized and is more likely to show higher levels of wage dispersion, and a decrease in the average wages in the manufacturing sector, which would increase its differential with the service one. In those countries in which deindustrialization 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 one to expect that the higher the levels of deindustrialisation at $t-1$, the higher the levels of wage dispersion at t .

Female Labor Force Participation: There is no consensus regarding the expected effects of this variable. A priori, the fact that women have been entering the labor force while being on average less educated should induce an increase in the levels of wage dispersion due to differentials 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 centralization: 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. This measure aims at capturing the structure of wage bargaining in any given country. Its higher scores reflect situations in which different sectors, types of firms and unions (even if ranked by wage) jointly bargain, leading to a reduction of wage differentials. Thus expected association between centralization and inequality is negative.

Union density: The variable captures employed union members as a percentage of the employed labor force. The expected impact of this variable depends on which share of the labor force is more organized. As Rueda and Pontusson (2000: 360) point out in a follow up of previous Freeman (1980; 1982) work, "unionism would be a source of wage inequality if highly paid wage earners were better organized than low-paid workers, and the opposite would hold if low paid wage earners were better organized". The conventional expectation is that the latter will be the case, given the current prevailing structure of trade union organizations.

*Left*²⁷: this is an index of the partisan left/right "center of gravity" developed by Cusack (1997). It is based on Castles and Mair's (1984:73-88) coding of government parties' placement on a left right scale, weighted by the decimal share of cabinet

²⁷ The incumbent's ideology has been measured in several ways in the specialized literature. While in coming chapters a different indicator (the share of right wing parties cabinet portfolios), the models specified in this chapter include the Cusack's index of gravity. In all cases the choice of indicator aims to maximize comparability with previous contributions.

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 labor market (for instance, they are more prone to set up a statutory minimum wage) and therefore to generate more equal outcomes.

Civilian Government Employment: source OECD/Cusack (1991). Wages in the public sector are expected to be more compressed than in the private sector. 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 (Huber and Stephens: 2001).

Variables of Interest

Generosity: it is the ratio (calculated by myself) of the total expenditure on unemployment benefits to the unemployment rate.

Effective Labor Tax Rate: Mendoza et. al. (1997: 99-126). This is defined as individual income tax revenues divided by wages and salaries, property and entrepreneurial income and the operating surplus of private unincorporated enterprises.

*3.2.3.3.- Results and Implications*²⁸

This section is carried out in three steps. After presenting some general aspects of the models and a brief comment on the control variables, I focus more closely on the results for the variables of

²⁸ The Summary Statistics of all the variables used in the different models discussed in this section are available in the Data Appendix at the end of the thesis.

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TABLE 3.4

	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	-0.7138*** (0.0547)	-0.7269*** (0.0563)	-0.627*** (0.059)	-0.70*** (0.059)	-0.630*** (0.066)	-0.821*** (0.0491)
Unemployment Rate	-0.0302*** (0.00839)	-0.006 (0.0145)	-0.183*** (0.003)	-0.0046 (0.0065)	-0.0094*** (0.0030)	-0.0009 (0.0026)
De-industrialisation	0.0120 (0.0064)	0.425*** (0.0174)	0.0068** (0.002)	0.0175** (0.0079)	0.0142*** (0.0028)	0.0018 (0.0031)
LDC	-0.0007 (0.0025)	-0.0132** (0.0061)	-0.0022** (0.0014)	-0.0067** (0.0027)	-0.001 (0.0011)	-0.0028** (0.0011)
Union Density	0.00107 (0.343)	-0.0166* (0.0097)	0.0092*** (0.001)	-0.0015 (0.0043)	0.0011 (0.0009)	0.0079*** (0.0017)
Wage Centralisation	-0.5150*** (0.1484)	-0.7177*** (0.250)	-0.1348** (0.046)	-0.2366** (0.1123)	-0.0698 (0.0492)	-0.0911** (0.448)
Civilian Government Employment	0.00949 (0.1460)	0.1009*** (0.035)	-0.0049 (0.007)	0.03316** (0.0157)	-0.0030 (0.0065)	0.0089 (0.0063)
Female Labor Force Participation	0.05496*** (0.1330)	0.0385* (0.022)	0.0177** (0.005)	0.0145 (0.0100)	0.0068* (0.0041)	0.0032 (0.0040)
Government Ideological Composition	-0.0586*** (0.1812)	-0.0803** (0.033)	-0.028*** (0.007)	-0.0327** (0.0151)	-0.0106 (0.0065)	-0.0116** (0.0061)
Effective Labor Tax Rate	0.00008 (0.0018)	-0.0048 (0.0182)	0.0025** (0.001)	-0.0016 (0.0045)	-0.0002 (0.0004)	-0.0022 (0.0018)
Generosity ¹	-0.2163 (0.143)	-1.278*** (0.478)	-0.123** (0.061)	-0.4720** (0.2189)	-0.0311 (0.407)	-0.1023 (0.0809)
ΔGenerosity	-0.384** (0.165)	-0.9438** (0.4381)	-0.274*** (0.060)	-0.4493** (0.25)	-0.021 (0.038)	-0.0450 (0.075)
R-Squared (N)	0.63 (180)	0.57 (170)	0.61 (180)	0.54(170)	0.61(180)	0.72(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.

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TABLE 3.5

	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	-0.683*** (0.0899)	-0.489*** (0.096)	-0.644*** (0.1050)	-0.562*** (0.092)	-0.598*** (0.0846)	-0.606*** (0.0803)
Unemployment Rate	-0.0402*** (0.0107)	-0.0495** (0.020)	-0.0202*** (0.0051)	-0.0248** (0.0093)	-0.0103*** (0.0028)	-0.0074** (0.0037)
De-industrialisation	0.0219** (0.011)	0.0277 (0.023)	0.0101** (0.0052)	0.0096 (0.0106)	0.0141*** (0.0025)	0.0073* (0.0042)
LDC	-0.0010 (0.004)	-0.0091 (0.0078)	-0.0012 (0.0017)	-0.00491 (0.0034)	-0.00009 (0.0010)	-0.0024* (0.0014)
Union Density	-0.0027 (0.005)	-0.0169 (0.0121)	0.0052** (0.0027)	-0.0043 (0.0051)	-0.00037 (0.0012)	-0.0072** (0.0022)
Wage Centralisation	-0.509** (0.170)	-0.7673** (0.3038)	-0.1445** (0.066)	-0.2314* (0.0131)	-0.0828* (0.0501)	-0.1236** (0.0567)
Civilian Government Employment	0.0133 (0.032)	-0.0047 (0.0472)	-0.005 (0.159)	-0.0058 (0.0202)	0.00160** (0.0072)	-0.0080 (0.0084)
Female Labor Force Participation	0.0320** (0.015)	0.0427 (0.0270)	0.0130* (0.0076)	0.0152 (0.0119)	0.0072** (0.0036)	0.0072 (0.0050)
Government Ideological Composition	-0.069** (0.032)	-0.1620*** (0.0516)	-0.0282* (0.0155)	-0.0664** (0.0228)	-0.0157** (0.0079)	-0.0279** (0.0096)
Effective Labor Tax Rate	-0.002 (0.003)	-0.0305** (0.0120)	0.0013 (0.0022)	-0.0115** (0.0053)	-0.00002 (0.0005)	-0.0061** (0.0022)
Generosity * SWR (**)	-0.252** (0.103)	-0.9163** (0.3521)	-0.1028** (0.0394)	-0.3663** (0.1548)	-0.0370 (0.024)	-0.1190* (0.0786)
Generosity*CEWR	0.5368 (0.638)	-0.5673 (1.4193)	0.1088 (0.2931)	-0.1322 (0.6465)	0.1450 (0.132)	-0.0867 (0.2540)
Generosity*ASWR	0.444** (0.180)	3.0628** (0.9733)	0.1609** (0.0804)	1.2319** (0.4398)	0.1647** (0.0473)	0.5614*** (0.1737)
ΔGenerosity*SWR	-0.271** (0.103)		-0.1719*** (0.0394)		-0.0650** (0.025)	
ΔGenerosity*CEWR	0.086 (0.679)		0.0503 (0.2780)		0.1012 (0.126)	
ΔGenerosity*ASWR	0.454** (0.212)		0.0765 (0.1044)		0.2014** (0.062)	
R-Squared (N)	0.62 (179)	0.42 (179)	0.58 (179)	0.39 (179)	0.61 (179)	0.57 (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.

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TABLE 3.6

Lagged Dependent Variable	MARKET INCOME INEQUALITY - GENERAL AND INSTITUTIONAL MODELS			
	General Model		Institutional Model	
	Model A	Model B	Model A	Model B
Income per capita	-0.8824*** (0.3563)	-0.74831*** (0.045)	-0.864*** (0.035)	-0.470** (0.15)
Unemployment Rate	0.00029 (0.0003)	0.00045 (0.001)	0.00033 (0.0004)	0.0015 (0.002)
De-industrialisation	0.0028*** (0.0002)	0.0037*** (0.0011)	0.0031*** (0.0003)	0.0041* (0.002)
LDC	-0.00031** (0.00012)	0.00063 (0.0003)	0.0003** (0.0001)	0.0016** (0.0007)
Trade Openness	0.00005 (0.00004)	0.00004 (0.0002)	0.00004 (0.0005)	-0.0007 (0.0005)
Union Density	-0.0009*** (0.0002)	-0.0026*** (0.0007)	-0.0012*** (0.0003)	-0.0010 (0.001)
Wage Centralisation	-0.0026 (0.005)	-0.0147 (0.0143)	-0.0013 (0.0053)	-0.011 (0.027)
Female Labor Force Participation	0.0030*** (0.0003)	0.0022* (0.0012)	0.0026*** (0.0004)	0.0028 (0.002)
Government Ideological Composition	-0.0028*** (0.0007)	-0.0018 (0.0021)	-0.0031*** (0.0007)	-0.0004 (0.0040)
Effective Labor Tax Rate	-0.0002** (0.0001)	-0.0003 (0.0005)	-0.0001* (0.0001)	0.0008 (0.0006)
Generosity	0.294** (0.013)	0.0979*** (0.0050)		
ΔGenerosity	0.0428** (0.014)	0.0993*** (0.036)		
Generosity * SWR			0.0157* (0.008)	0.013 (0.043)
Generosity*CEWR			0.072*** (0.021)	0.545** (0.20)
Generosity*ASWR			-0.0256** (0.01)	-0.388** (0.189)
ΔGenerosity*SWR			0.0418*** (0.012)	
ΔGenerosity*CEWR			0.0516** (0.020)	
ΔGenerosity*ASWR			-0.020* (0.011)	
R-Squared (N)	0.88(149)	0.82 (149)	0.87 (149)	0.49 (149)

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.

interest, highlighting their implications for the theoretical issues discussed in section 1.

The estimated coefficients 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 that the long term equilibrium properties of the model are plausible. Most of the independent variables present statistically significant results, consistent with previous findings. Deindustrialization shows a consistent positive effect on wage inequality across the models, albeit not always statistically significant. 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 measuring 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. 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.²⁹ It must also be noted that the results are sensitive to different specifications. Finally, in none of the models does the level of commercial exchanges with developing countries contribute at all to the explanation of cross national differences in terms of wage dispersion. The variable measuring

²⁹ 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 share (50/10).

these exchanges lacks robustness and is rendered insignificant in most of the models specified.

Turning to the control variables included in the analyses of the determinants of market income inequality, it must be recalled 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 chapter, we should observe that, to a large extent, the control variables follow a similar pattern, except for the unemployment rate, whose sign should become positive. This is to a large extent what is found. Deindustrialization and unemployment present positive elasticities, albeit the latter is not significant, a result on which we will come back to later. The coefficients for the variables measuring globalization 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 the wage bargain. To sum up, in relation to the two groups of control variables, the results are generally 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 3.4 and 3.6 seem to confirm the existence of second order effects in the expected direction. The effects on the distribution of earnings are mainly concentrated at the bottom and barely existent with respect to 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 in 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 two stage least squares instrumental variables estimations show that second order effects remain even after the potential problem of endogeneity is taken care of. In fact, as it can be seen from the comparison between models A and B in table 3.4, controlling for endogeneity induces a significant increase in the magnitude of the effect of welfare state generosity on wage inequality.

These results do indeed provide grounds to argue that if both low wage inequality and large welfare states coexist with high levels of market income inequality, it is because the former are to some extent a function of the latter in a relation driven by labor supply responses. Nonetheless, as argued in section 3.2.2, the assumption of a common pattern across advanced industrial societies is likely to obscure the way these mechanisms work, since these are known to very much depend on national characteristics. 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. Hence the need to estimate institutional models.

The results of the institutional models (Tables 3.5 and 3.6) are, again, consistent with our expectations, and contribute to further solving the puzzle of egalitarianism. In the case of wage inequality (Table 3.5), the comparison between models A and B indicates again that, once endogeneity is handled in the specification, the magnitude of the impact of the variables on interest increases. More substantively, both models A and B confirm 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 widening effects for the distribution of wages. The expectations derived from the combination of targeting and low tax back rate NIT designs receive empirical support at the aggregate level (table 3.5: columns 3 and 4). Interestingly enough, the short term impact of generosity on the wage distribution is also strong in the upper half of the distribution in Anglo-saxon countries. The models equally reflect 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 the wage bargaining process 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 endogeneity is taken care of, the expanding effect of generosity is rendered insignificant. 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 mutually reinforcing effects 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 insignificant, second order effects on market income are fairly robust. 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 reduction in labor demand is likely to be the mechanism that rules out any clear impact on the distribution of wages (especially 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 not significant in the institutional models of market income inequality provides indirect support for this claim. Such a process is not likely to be observable in the Scandinavian nations, where second order effects are mainly the result of the interaction between high levels of welfare state generosity, high levels of centralization of wage bargaining and the fact that the income tax is the main source of public revenues (Table 3.2).

To sum up, 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 show different feedback mechanisms depending on the interaction between the institutional environments and the income/ insurance effects of transfers. Therefore these two empirical patterns are to be explained not only by countries differing in their levels of generosity, but also because, given any starting point, in the event of an increase in generosity, second order effects work differently depending on institutional conditions.

In short, second order effects do indeed matter for the understanding of the politics of inequality across welfare regimes. However interesting the substantive implications of this result may be, they are far less central to the purposes of this research than the methodological ones. The next section elaborates on them in detail.

3.3.- Methodological Implications for the Study of the Distributive Consequences of Decentralization: from Regression Analysis to Micro-simulations

At this point it is necessary, for the ultimate purpose of the analysis here, to consider the magnitude of second order effects. To put it differently, by how much are we misrepresenting the distributive impact of taxes and transfers if such effects are not taken into consideration?

The most intuitive way to answer this question is to compare, for a number of representative countries, the predicted evolution of the levels of earnings (90/10) and market income inequality when second order effects are at work, against their predicted evolution in the absence of the second order effects of redistribution identified by our estimations. This is done in three steps: (1) calculate, on the basis of our error correction models, the predicted value of $(Y_t - Y_{t-1})$, i.e., the dependent variable, including the estimates of the effect of welfare state generosity and the effective labor tax rate (provided they are statistically significant). (2) Repeat the calculation setting the coefficients of welfare state generosity and effective labor tax rate to 0. In this way the predicted value of the change in the levels of earnings and market income inequality, discounting second order effects, is obtained. (3) Finally, create two new variables by adding the lagged value of the two measurements of inequality to the two variables capturing their predicted change, one including second order effects, the other setting them to 0. The countries selected are Sweden, Germany and the United States. Two graphs are reported per country, one for earnings inequality (90/10) and another one for market income inequality.

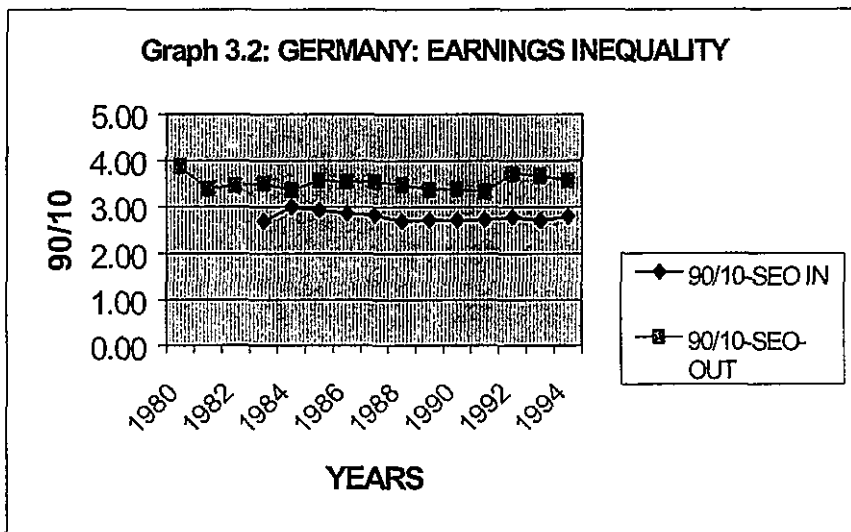
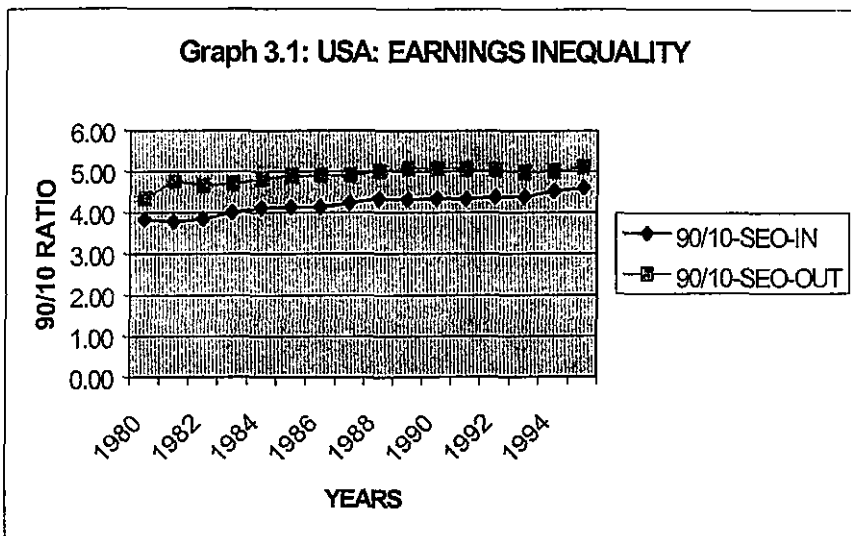
For the sake of simplicity, I will take one step backwards and put aside the implications of the institutional models,³⁰ proceeding

³⁰ The careful consideration of the implications of the institutional models for the study of the direction of second order effects and their salience for a proper understanding of the processes driving income inequality across welfare regimes would lead this chapter too far away

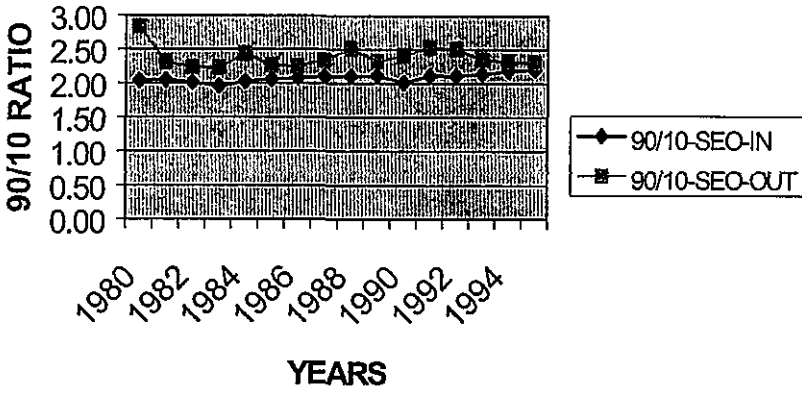
as if second order effects worked similarly across OECD nations. This will make the comparison more straightforward while still supporting the point, since at this stage the main concern is getting an estimate of the actual magnitude of these effects (and not so much of their direction). Thus in every graph the predicted values stem from the estimates of the general models (table 3.4, column 2; table 3.6 column 2). More specifically, they are calculated on the basis of the two-stage least squares instrumental variables estimations (models B).

From these graphs a major conclusion stands out: the magnitude of second order effects is not negligible and, therefore, nor is the magnitude of the bias when assessing the distributive impact of taxes and transfers. For instance, Graphs 3.3 to 3.6 show very clearly that if the difference between market and disposable income were to be used as indicator of the redistributive scope of different welfare systems, these estimates would be upwardly biased by 2 to 6 percentage points. Similarly previous redistribution accounts for quite a share of the shape of the distribution of earnings, as represented by the distance between the two lines in Graphs 3.1 to 3.3. Now that the magnitude of second order effects has been established, let me conclude this chapter by discussing why these findings are relevant to the objective of this part of the dissertation, namely assessing the distributive consequences of decentralization.

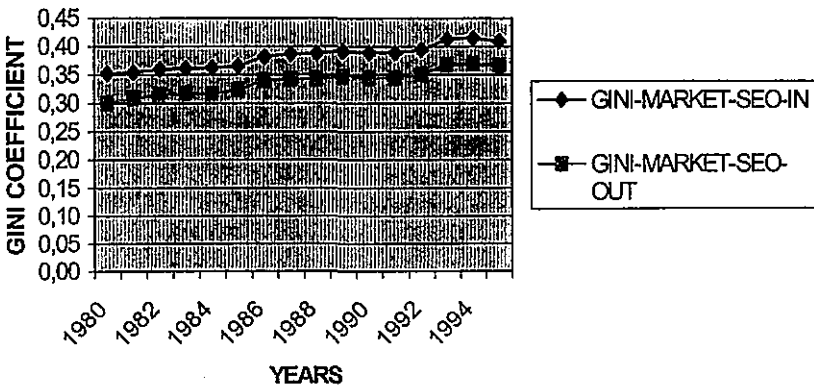
The first reason is self-evident from the graphs. By affecting the value of the observed levels of pre-tax, pre-transfer inequality, second order effects increase the difficulty of establishing which share of the change in the distributive outcome is due to the intervention of interest and which share is due to other factors and conditions. Suppose redistribution is decentralized at t . According to our model decentralization is going to provoke a change in the preferred levels of redistribution. If such a change in turn only affected the distance between market and disposable income



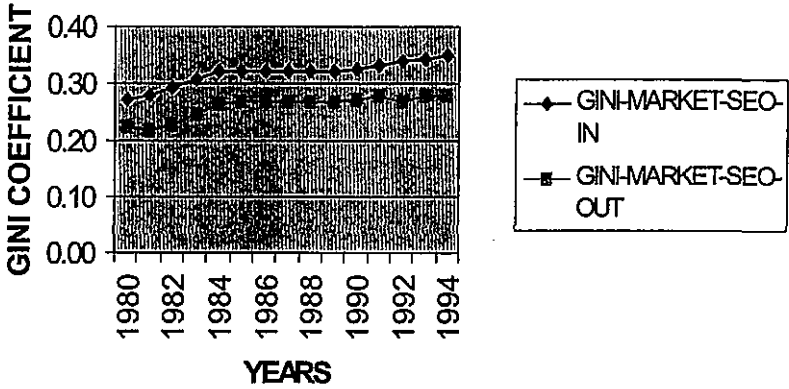
Graph 3.3: SWEDEN: EARNINGS INEQUALITY



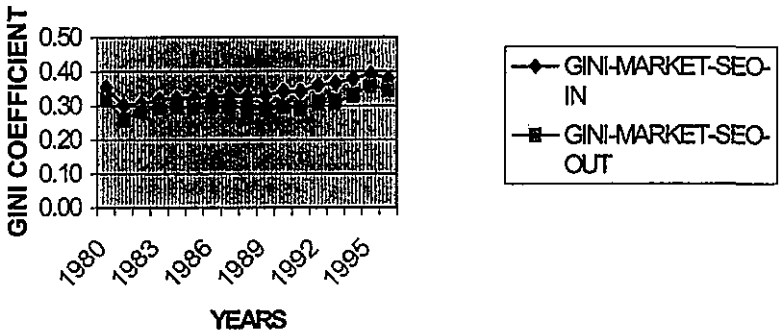
Graph 3.4: USA: MARKET INCOME INEQUALITY



Graph 3.5: GERMANY: MARKET INCOME INEQUALITY



Graph 3.6: SWEDEN: MARKET INCOME INEQUALITY



inequality, i.e., does not affect market inequality itself, the task of analyzing the distributive consequences of the institutional change would be easier. By implication the results of this chapter show that this is not the case. By affecting redistribution at t , decentralization will also be affecting the levels of market inequality at $t+1$, biasing the estimation of its own distributive impact on the basis of the observable levels of inequality.

A partial solution to this problem is conceivable in the context of regression analysis on observables. Such a solution would be restricted to cases in which the relation of interest is the one linking political factors exclusively to the distribution of disposable income. In such a context the simple introduction as a control of an indicator of market income inequality will generate coefficients for the political factors of interest that are net of the second order effects of previous redistribution policies. By definition, these would be captured and controlled for by the indicator of market income inequality, provided that it is measured at the same time as the dependent variable. Hence, the coefficient of the variables of interest is, in principle, not biased by second order effects. Despite this payoff there are many reasons to consider this solution to be far from satisfactory.

As shown by the institutional models above, second order effects are multidimensional. To put it differently, a change in the design of redistribution generates multiple externalities that interact in many different ways with the surrounding conditions. This is even more the case if the change consists of a fundamental change in the design of the program, namely a change in the allocation across levels of government of the powers to tax and transfer. This brings us back to the counter-factual nature of the task to assess the distributive consequences of decentralization and, hence, the need for the methodologies to be implemented in a way that fits with the assumptions imposed in the analysis. As discussed in section 3.1, the analysis of the distributive consequences of policy and institutional changes is built upon a first order incidence framework. This implies that any methodology under this framework needs to satisfy the following

conditions so that the distributive effects of any given intervention of interest can be properly assessed: (1) Any action of the Government should be a perfectly identified intervention in the economy. (2) The interaction between the intervention and other factors should induce no alteration in the surrounding institutional conditions beyond the ones intended by the institution of interest. (3) The change in the design of taxes and transfers should not generate second order effects.

The introduction of market income as a control could potentially satisfy condition (3). But it would not satisfy any of the other two, since regressions on observables are a largely limited additive approach that, by definition, cannot take into account the interactions between second order effects and many other existing institutional conditions. These interactions would still be at work, preventing the fulfillment of what Goodman (1947) named as the cotenability condition,³¹ namely the requirement that “to evaluate institutions, to assess their impact, we must ask what the outcomes would have been if other institutions had been observed *under the same conditions*”³² (Przeworski et al. 2000: 9). In presence of second order effects, such as interterritorial mobility

³¹ The quotation is borrowed from Fearon (1991: 169-195). As he puts it, “in Goodman’s account a counterfactual assertion is judged true if (1) the counterfactual antecedent, when joined with appropriate theories and facts, implies the consequent; and (2) the counterfactual is “cotenable” with the facts or “initial conditions” used to draw the inference, meaning that if the antecedent had actually occurred, the initial conditions could also have occurred” (Fearon, 1991: 193).

³² *The italics are ours.* A similar point is made by Heckman and Smith (1995: 87), when they argue that “the fundamental evaluation problem that arises from the impossibility of observing what would happen to a given person in both the state where he or she receives a treatment (or participates in a program) and the state where he or she does not. If a person could be observed in both states, the impact of the treatment on that person could be calculated by comparing his or her outcomes in the two states, and the evaluation problem could be solved.” The quotation is taken from Mitton et al. (2000: 1).

induced by decentralization itself, or the ones identified in the previous section, this is simply not possible.

In addition there may be a second source of bias affecting the assessment of the distributive consequences of decentralization. If the reason why country X has a particular institutional form is related to the fact that it takes a particular value in the dependent variable, it is simply not possible to distinguish what it is due to the effect of our institutions of interest and what is due to other factors or general conditions under which both the institution and the outcome emerged (Przeworski et al.: 2000:1-12, 279-289). Indeed our theoretical model has pointed to a number of reasons to believe that the adoption of certain levels of decentralization in any given country is related to their distributive effects. Should it be the case, federalism/decentralization, and more importantly its changes over time, cannot be considered any longer an element exogenous to other determinants of inequality. That creates a problem of under-identification of the distribution of outcomes we intend to compare (Manski 1995: 23-27). As a result, "whenever observations are not selected randomly, inferences based on observed cases may yield inconsistent and biased estimates of the effect of being a particular state [*in this case federalism*] on outcomes [*in this case, income inequality*]" (Przeworski et al 2000: 9). This applies to any regression analysis on observables. At this stage it can be safely concluded that, while being illuminating for the patterns to be found on the observable cases, regression analyses are doomed to be only partially useful as a tool for analyzing the distributive consequences of decentralization. An alternative approach is needed so that the impact of decentralization on the distribution of income can be analyzed *as if it was exogenous and as if there were neither second order effects nor interactions between these and the surrounding institutional conditions*. To put it differently, a reasonably constructed counter-factual is needed (Fearon 1991: 169-195)³³.

³³ One major argument against the use of counterfactuals is that they are futile *science fiction* exercises that tell us nothing about the actual

In this context, the use of micro-simulations reveals itself as a novel and valuable methodological solution for the proper completion of a counterfactual analysis of the relation between decentralization and income inequality. By incorporating this tool into the analysis a methodological contribution is made³⁴ to the study of the relation between institutions and social outcomes. Simulations on micro-data are a useful methodology for coping with “what if” type questions that are related to the incidence of redistribution. In which sense? Static microsimulations do not overcome the problem of behavioral responses per se in that they do not distinguish and incorporate the impact of behavioral responses on the indicators or interest.

The advantages of microsimulations are of a different nature. By controlling the interventions on the data, the researcher is sure that the only thing that changes is the simulated intervention of interest. On the basis of these simulated data it is then possible to calculate indicators of inequality as if the only real intervention were the intervention of interest. In this sense, static microsimulations allow the researcher to satisfy the conditions to build a meaningful counterfactual even if it is still in the context of a first incidence framework, for microsimulations satisfy conditions (1) to (3) above. The main difference in relation to regression analysis

world, which in fact should be our only matter of concern. Fearon (1991: 169-185) reviews the grounds of this statement and provides us with at least three counter-arguments against it. First, the use of counterfactuals versus actual case comparisons are two different ways of approaching the same problem of inference. Secondly, actual cases comparisons are, more or less explicitly, rooted in counterfactual premises. Finally, in order to be useful, counterfactuals must be generated under a set of rather tight theoretical and methodological conditions that very likely take them away from the rather open boundaries of science fiction literature.

³⁴ Note that the novelty does not stem from the use of simulations nor from referring to behavioral responses. What I consider novel is the application of this tool to the study of the distributive consequences of a political and institutional change such as (de)centralization, and more specifically, coping with the mediating processes to ensure the proper definition of the counterfactual scenarios.

is that, now, the researcher is sure that the methodology implemented matches the assumptions on the basis of which the inferences are made (Pudney and Sutherland 1996:473-495). In other words, microsimulations provide a sounder basis than regression analysis to analyze the distributive effects of political interventions because they ensure that second order effects of the type analyzed in this chapter are effectively assumed away. In this way, the "elements of uncertainty introduced by behavioral responses" (Mitton et al. 2000:1-11) do not affect the assessment of the distributive effects of either political choices or institutional changes. On the contrary, in the case of time series cross-sectional regression analyses these elements of uncertainty link over time the different measurements of inequality included in the sample. And this is so regardless of the fact that market income inequality is introduced as a control in the different specifications.

In the next chapter, both regression analysis and microsimulations are used in order to test the hypotheses of the model regarding the distributive consequences of decentralization.

CHAPTER 4

THE DISTRIBUTIVE CONSEQUENCES OF DECENTRALIZATION

This chapter is concerned with the impact of decentralization on inequality. More specifically it is devoted to testing the implications of the argument with regard to the distributive consequences of decentralization. As we shall see in more detail below, because of their nature, the testing of these hypotheses regarding the distributive effects of decentralization involves the combination of the two methodologies whose advantages and limitations were considered in the previous chapter. Hence the rest of the chapter is structured as follows. Section 2 develops, on the basis of aggregate data, a test for hypothesis 1, namely the claim that once we control for endogeneity, the impact of decentralization on inequality at the aggregate level should be substantially reduced or even cease to be statistically significant. The discussion of the results goes back, with the example applied, to the limitations inherent in this kind of approach for the study of the distributive consequences of institutional choices (section 3.4).

In order to test hypothesis 2, namely the claim that the impact of decentralization on inequality is decomposable into a *between units effect* and a *diversification effect* whose magnitude depends upon the pre-existing structure of inequality, these limitations need

to be overcome. This is done in the third section of the chapter by carrying out a micro-simulation analysis of an imaginary European federation on the basis of the fifth wave of the ECHP (*European Community Household Panel*). Finally section 4 highlights the implications of the results and relates them back to the general argument of the dissertation.

4.1.- Implications from the Argument and Analytical Strategy

At the core of the argument developed in Chapter 2 lies the idea that precisely because actors have an expectation about the effects of any given institutional change, the design and evolution of institutions, in this case the *decentralization of redistribution*, is endogenous to the structure of inequality. The causal story would not be, as conventionally assumed in the literature, one about exogenous effects of intrinsically inegalitarian institutions but rather one in which, given a particular structure of inequality, a political process determines the selection of institutions according to (i) their expected distributive effects and (ii) the dominating preferences among the relevant actors. Hence if decentralization is endogenous to inequality it is precisely because it is expected to interact with those dimensions that make regions diverge in their preferences about redistribution. Such interaction in turn becomes, according to the model, a function of the specific territorial distribution of specialized economic sectors, the regional shares of dependent population and the extent to which there are region-specific shocks. As it stands, two major implications can be derived from this argument for the empirical analysis of the impact of decentralization on income inequality. Let me, in what follows, discuss them in detail.

As it was documented at length in Chapter 1, the dominant approach in the studies about the impact of decentralization on redistribution and inequality is to consider decentralization as exogenous to the dependent variable. If, according to the argument of the thesis, it is thought otherwise, it seems reasonable

to believe that the effect identified by previous approaches is due, in some proportion, to reverse causality. Indeed, if our theory is correct, the magnitude of the upward bias due to reverse causality should be large enough to alter the estimates assessing the impact of decentralization on inequality. This claim is itself a testable proposition in that if decentralization is indeed endogenous to inequality, it should be found that, once the relation is specified to take this possibility into account, the impact of decentralization on inequality is substantially reduced or even ceases to be significant. From now on I shall refer to this claim as the "endogeneity hypothesis" (H1).

In order to test this hypothesis, it is necessary to compare different sets of specifications on the same dataset and thereby check the extent to which previous conclusions about the inherently inegalitarian character of decentralization were nothing but an artifact of the lack of consideration of endogeneity. All the different specifications to be compared require the inclusion of decentralization within a more general model of the determinants of inequality of disposable income. In addition, as argued at length in Chapter 3, the specification of such models with aggregate data need to confront the problem of incidence. This requires the implementation of the partial solution proposed in section 3.4

Even though the detailed *methodological underpinnings* of the test of the endogeneity hypothesis are discussed in the next section, let me outline a summary of the results and their implications: the endogeneity hypothesis does receive support from the comparison between different regression models. While it clearly indicates that our account of the direction of causality seems to go in the right direction, it still tells us very little about the specific distributive consequences of the decentralization of fiscal redistributive policies.

This brings me to hypothesis 2, namely the claim that the impact of decentralization on inequality is decomposable into a *between units effect* and a *diversification effect* whose magnitude depends upon the pre-existing structure of inequality. In order to identify the role of the pre-existing structure of inequality, it is

useful to go back to some of the formal examples developed in Chapter 2. Recall that the most important parameters in the model are λ (share of dependent population in each region), σ (variance in income of the risky sector) and S (exposure to region-specific shocks). Suppose that S is constant for both regions. Let us compare, under these conditions, the following two unions. In union A the structure of inequality is such that inter-regional differences in terms of average income are small, but large in terms of other dimensions of the productive strategy and the functioning of the labor market. Moreover regions do not differ in their degree of specialization but in the sectors in which they are specialized. So, following the notation of the model, regions c and g can be characterized as

$$\lambda_g = \lambda_c \text{ but } \sigma_g \cong \sigma_c \text{ so that } (Y_{mc}/Y_c) \cong (Y_{mg}/Y_g) \cong (Y_{mn}/Y_n) \rightarrow t_c \cong t_g \cong t_n$$

Alternatively, in union B, regions differ both in their average income and in the degree of specialization. Hence, according to our model,

$$\lambda_g \neq \lambda_c \text{ and } \sigma_g \neq \sigma_c \text{ (} Y_{mc}/Y_c > Y_{mg}/Y_g > Y_{mn}/Y_n \text{)} \rightarrow (t_c + t_g)/2 < t_n$$

As a result, in the event of decentralization, union A would yield a change in redistribution such that $t_c \cong t_g \cong t_n$ where \cong indicates that precisely because the institutional choice is not mainly driven by regional differences in income but rather by efficiency related considerations (Alesina and Perotti 1998), decentralization appears to be compatible with redistribution and the political pursuit of equality. In this context the impact of decentralization leads more to the implementation of different strategies of redistribution (t), within a similar level, than to a change in the preferred levels of redistribution (t).

The picture looks rather different in union B. When regions differ both in their degree of average income, their degree of specialization and the median to average income ratio, decentralization triggers a much larger diversity of regional

preferences for redistribution. Thus, the distributive consequences for each of the units become a function of their internal political processes and their internal constraints in terms of available resources. Each region provides the level of redistribution preferred by its median voter. If the preferred level is not affordable, the level will be the closest one to that figure given the resources available. Conventionally, it is argued by the literature reviewed in Chapter 1 that under these conditions decentralization leads to more inequality because the political strength of potential beneficiaries (λ) is undermined by their fragmentation. Moreover, if decentralization is the result of substantial differences in average regional income levels, it is expected that for a number of regions a reduction in available resources will take place. This, in turn, will be reflected in a reduction in the level of redistribution (t) they would provide. Altogether it leads to the expectation that decentralization is associated to higher levels of inequality: in unions such as B it should be observed that $(t_c + t_g)/2 < t_n$, leading, *ceteris paribus*, to an increase in the overall union's levels of inequality. Our model qualifies the deterministic nature of this prediction by suggesting that there are additional effects to be considered which, in turn, are a function of both the number and the type of constituent units. Indeed, if there is a large enough number of regions whose preferred level of redistribution is higher than the union's one, decentralization may end up associated with lower levels of inequality. Hence there is no reason, according to our argument, to expect *a priori* that decentralization leads always and necessarily to an increase in inequality. It will or will not depending upon the underlying conditions.

What mainly distinguishes Union B from Union A types is the activation of both the "between units" effect, i.e., the effect due to differences in terms of average income between regions and the "diversification effect", i.e., the effect that, in addition to the differences in average income, captures the differences in all other dimensions affecting the preferences for redistribution. Because of this difference, the distributive effects of an institutional change

in Union B types are expected to be significantly larger than in Union A ones.

To summarize, two types of testable propositions have been drawn from the model: the first concerns whether or not there are differences between unions A and B in the scope of the distributive effects of a change in the territorial design of redistribution. The second one regards the role of the internal composition of the union (number and characteristics of the constituent units regarding the distribution of income and preferences for redistribution) as the key to establish the specific direction of the distributive consequences of any given institutional change. Whether either of them receives empirical support cannot be assessed by regression analysis. This task requires a rather different analytical strategy based on micro-simulation analysis, an option whose advantages have been highlighted above. Such a strategy basically involves a comparison between two simulated unions that have been constructed to match the restrictions/conditions imposed in our two hypothetical examples as closely as possible. A careful consideration of the steps undertaken to develop this comparison is provided in section 3 of the chapter. Before developing it in full, I turn first to present the specification and results of the analyses testing the "endogeneity hypothesis".

4.2.- A Preliminary Aggregate Analysis: results and limitations

For the endogeneity hypothesis to be supported by the facts, it should be observed that, once the specification takes into account the two-way causality, the impact of decentralization as an aggregate determinant of inequality should be reduced or even vanish. The test of this proposition is constructed as follows. Section 4.2.1 discusses measurement issues concerning both the

dependent and the independent variables of interest¹. Thereafter Section 4.2.2 presents a discussion of the econometric underpinnings of the different models reported. Finally the discussion of the results and their implications closes the section (4.2.3).

4.2.1.- Inequality and Decentralization: Measurement Issues

Inequality

The dependent variable used in this section is the Gini coefficient of household disposable income per equivalent adult.

Decentralization

A key issue for the whole empirical analysis of this dissertation is how to measure the territorial allocation of political capacities between among levels of government. This section is devoted to a discussion of the advantages and shortcomings of the different strategies available. There are basically two. The first one consists of taking the distinction between federal and non federal countries as a proxy for the different degrees of political decentralization. Federal nations would be defined in this sense as those with a high degree of political decentralization, i.e., the real capacity of the subnational political units to pursue different policy strategies. On the contrary, the absence of federalism is, within this approach, identified with political centralization. On this basis the variable is defined as a 0/1, or at best 0/1/2, dummy, where the difference between 1 and 2 depicts a distinction between "weak" and "strong" federal countries. Bearing in mind that this thesis is concerned with the degree of decentralization of

¹ Details about the sources and construction of all the variables used in the chapter are given in the Data Appendix.

redistribution, it is quite straightforward to see that there are a number of issues, both theoretical and methodological, that make this approach far from perfect.

First of all, in fairness, this indicator may not reflect exactly the same phenomenon as I do. By endorsing a "dummy approach", what many scholars are explicitly aiming at is a legal-formal conception of federalism according to which federalism is just a constitutional fixture, a given feature of the political system, defined by (1) a constitutional protection of the existence of subnational units, (2) the existence of a Second chamber where subnational units have a voice of their own and the capacity to veto/modify any legislation perceived against their interests and (3) the existence of a form of Constitutional Court of Justice as the ultimate arbiter between state- and unit-levels. These three features define a federation in this tradition and countries can indeed be counted as different values of a dummy so long as they fulfil these conditions.

Yet conceptually this is neither federalism itself (Rodden 2003) nor political decentralization. Both federalism and decentralization go beyond the incompleteness of any constitutional contract (Dixit:1996) and refer to the ongoing process of actual distribution of political capacities among different levels of government across different policy realms, beyond the degree of formal recognition and protection of such capacities in the original constitutional text. However, given that the correlation between federalism (in the formal sense) and decentralization (in the policy sense) tends to be reasonably high, the former is taken as a convenient proxy for the latter in comparative political economy studies (Lane and Ersson 2000: 77-102; Watts 1996; 1999: 47-61).

Nevertheless, there are additional problems that go beyond the conceptual distinction between federalism and decentralization to enter the realm of methodology. The adoption of a "dummy approach" constrains the analysis in a two-fold way. First, it ignores the variance in terms of the degree of fiscal decentralization between the units belonging to the federal family.

And secondly, and more importantly given the statistical techniques to be implemented, it imposes rather arbitrarily the assumption that the distribution of political capacities among levels of government does not vary over time.

Table 4.1. *Share of regional public expenditure as a percentage of total public expenditure: Decentralized Countries (1975-1997)*

Year	Australia	Austria	Canada	Belgium	Germany	USA	Spain
1975	35.6	13.0	39.8	0	26.1	22.8	0
1976	34.6	13.1	40.1	0	25.6	22.4	0
1977	35.2	17.3	40.2	0	25.2	22.7	0
1978	35.3	13.3	39.2	0	25.9	22.5	0
1979	35.2	13.3	41.0	0	26.0	23.3	0
1980	35.4	13.3	40.2	0	25.5	22.9	0.3
1981	35.5	13.2	40.5	0	25.0	22.6	1.8
1982	35.4	13.2	41.0	0	24.8	21.6	3.8
1983	34.7	13.3	40.6	0	24.9	21.2	6.0
1984	34.1	13.3	39.4	0	24.4	21.7	8.0
1985	33.9	13.6	40.8	0	24.5	21.9	9.6
1986	34.0	13.3	41.3	0	24.6	22.2	10.3
1987	34.4	13.3	41.2	0	24.5	22.9	11.6
1988	35.3	13.4	41.5	0	24.3	23.2	11.5
1989	36.4	13.6	41.3	0	24.6	23.5	12.8
1990	37.4	13.5	41.6	11.1	24.0	23.5	16.8
1991	37.0	13.6	42.0	10.9	22.9	23.5	18.3
1992	36.8	13.8	42.1	10.7	24.1	24.8	18.3
1993	36.2	13.8	42.7	10.9	24.5	25.2	18.2
1994	35.9	13.8	42.5	11.2	24.0	25.6	18.6
1995	36.1	13.7	42.4	11.2	24.0	26.0	18.5
1996	35.5	13.0	43.1	11.0	24.1	25.9	19.3
1997	34.3	15.4	44.0	10.9	24.1	26.1	20.9

Source: elaboration by the author on the basis of the IMF Government Financial Statistics. German data include Eastern Länder from 1990 onwards. See the Data Appendix for a full account of the sources and construction of this variable.

Table 4.1 helps support the point. It presents the values of the regional share of total public expenditure for the period 1975 to 1997 in Australia, Austria, Canada, Belgium, Germany, the United States and Spain. From Table 4.1 it can be seen that, over time, the regional share of total public expenditures remained constant in Australia, rose in Canada and Spain and fell slightly in Germany.

The allocation of expenditure powers across levels of government resembles anything but a stable equilibrium. For this reason, any measure of decentralization based on fiscal data is preferable to the "dummy approach" in that it captures the variance both within groups and over time. The full range of possible indicators constructed on the basis of the Government Financial Statistics (International Monetary Fund) is presented in the Data Appendix. The capacity of any of the indicators presented in the Data Appendix to capture both between groups and within group variance in the values of the independent variable makes them a more suitable tool for the type of statistical analysis to be undertaken. However, for the purposes of the estimation of the distributive consequences of the level of decentralization of redistribution, this section makes use of one specific operationalization, namely the regional share of total social expenditure, for it is the one tapping more directly the processes referred to in the independent variable.

4.2.2.- Econometric Specification: handling endogeneity

The model developed in Chapter 2 has highlighted a process by which any given institutional design is partly a function of its expected distributive consequences. To the extent that this is the case there are reasons to believe that decentralization is a function of inequality as much as inequality can be a function of decentralization. Previous contributions to the literature, in assuming that causality worked only from decentralization towards redistribution and inequality, have both excluded inequality as a determinant of decentralization (Garrett and

Rodden 2003; Panizza 1999: 97-139) and, more importantly, ignored the problem of endogeneity when analyzing the impact of decentralization on redistribution and inequality (Huber et al. 1993: 711-750; Huber and Stephens 2001).

By definition, the testing of the "endogeneity hypothesis" requires overcoming this two-fold gap by contrasting one-way against two way specifications. In order to do so, I first present several specifications in which a more conventional approach is followed. In a second step, I re-estimate the models implementing a particular technique designed to take into account the issue of endogeneity between the left and some of the right hand side variables. In what remains of this section I briefly introduce the more conventional approaches, discuss more carefully the problem of endogeneity and briefly present the features of the strategy adopted to overcome it.

By conventional approaches I refer to standard fixed and random effects estimations of the relations of interest (Greene 2000). A random effects model has the following form:

$$Y_{it} = \alpha + \beta_1 X_{it} + \beta_{2..n} \gamma_{it} + \varepsilon_{it}$$

where α represents the constant, X_{it} represents the independent variable of interest, in this case different indicators of the structure of inequality, γ_{it} depicts the control variables, and ε denotes the error term.

Alternatively, the fixed effect estimation as implemented here can be presented as follows:

$$Y_{it} = c_i + t_i + \beta_1 X_{it} + \beta_{2..n} \gamma_{it} + \varepsilon_{it}$$

where c_i depicts a dummy variable for the cross-sectional units, and t_i represents, when included, time periods dummies.

Comparative political economists disagree about the benefits of either strategy and are caught up in an ongoing lack of robustness dilemma. Random and fixed effects differ in their

assumptions about the share of the variance to be exploited in order to identify the models. While the former gets all the benefits from pooling by considering the within and the between unit components of the variance at once, the latter freezes the between unit component by introducing a unit dummy per cross-sectional unit. In so doing, it is concerned only with the within unit share of the variance, in our case, the over time behavior of the observations. Generally, fixed effects pose a harder test for any given hypothesis in that they impose strong restrictions that take away the unit specific variation and, therefore, require controls that vary over time (otherwise there is no variance left to be accounted for). On the contrary, random effects allow for controls that do not vary over time. The small n problem, endemic to analyses using country level observations, tends to favor the use of a random effect approach since the exclusion of country dummies increases the number of degrees of freedom. Table 4.2 includes the coefficients for the Random and the Fixed effects models in order to assess the extent to which the results are sensitive to different assumptions. In this sense it also includes two Tobit specifications, one with country dummies, the other without them. The inclusion of these two models addresses a potential problem of misspecification due to the fact that the dependent variable ranges between 0 and 1. In principle, Tobit models are a special case of lower truncation in which the censor limit is set to 0. More generally, the likelihood function can be rewritten to take into account an upper limit, in this case 1^2 (Greene 2000: ch.20).

² In real terms, however, taking the Gini coefficient as the dependent variable, the lower limit never equals 0 (a perfectly egalitarian society) nor does the upper one equals 1 (a perfectly inegalitarian society). A more realistic specification for the OECD would be to set the truncation points at 0.20 and 0.60. The existence of an upper and a lower limit could also suggest a third alternative approach other than Tobit. Let G represent the Gini Coefficient. By taking the $\log \{G/1-G\}$, the dependent variable would range between minus infinity and plus infinity,

In a second step (Table 4.3), the models are re-specified to cope with the problem of endogeneity inherent in the relation between decentralization and inequality. Plainly put, there is a problem of endogeneity when "the values of our explanatory variable are sometime the consequence, rather than the cause, of our dependent variable" (King, Keohane and Verba 1994: 185; Manski 1995: 127-129). More technically speaking, endogeneity refers to the fact that "an independent variable is potentially a choice variable, correlated with unobservables in the error term (Millimet 2001:2)³. There are several strategies to correct this problem.

The first available solution to correct this problem is the one proposed by Baltagi (1995, 2002: 130-155), namely a two-stage least squares approach with instrumental variables. In this context the key issue in order to overcome endogeneity and properly identify the relations of interest is to find adequate instruments, i.e., "a variable that is correlated with the endogenous variable, uncorrelated with the error term and does not affect the outcome of interest conditional on the included regressors" (Millimet 2001:4). However, this solution is no panacea, for the identification of simultaneous equation models is not straightforward. In Wlezien's words, "the assumption one makes about the underlying structural model and choice of instruments can powerfully tutor the results one gets" (2002:14). In this sense, the two stage least squares approach imposes the restriction that the error terms of the n-equations included in the system are

facilitating the implementation of the standard assumptions of the regression model.

³ In the real world this distinction is often subtle and complicated. Indeed the specialized literature seems to have taken a different path by establishing the conditions under which an independent variable x can be considered strictly exogenous in relation to y . These are mainly two: weak exogeneity and absence of Granger causality. For a discussion on these issues see Greene (2000: 656-657).

uncorrelated. Such an assumption is not necessarily reasonable⁴. Hence there is room to worry about the possibility of the findings obtained from the implementation of Baltagi's approach to being an artifact of a (potentially) implausible assumption.

In order to rule out this possibility, two alternative ways of estimating simultaneous equation models have been implemented. Both allow for the error terms of the equations in the system to be set at different values. The first one is a conventional OLS path analysis whose coefficients are expressed in structural form. The second one is Zellner's Seemingly Unrelated Approach, designed specifically, in the context of simultaneous equations models, to control for contemporaneous cross-equations error correlations. The main difference between the two is that the latter uses GLS. According to Greene (2000: 674-688), in presence of large cross-equation error correlations, GLS is a more efficient approach than OLS. Consequently, the larger the correlation, the larger the efficiency gains of using Zellner's approach as opposed to other approaches to simultaneous equations models.

Let me turn now to discuss another important aspect of the specification: the selection of the control variables, in turn related to the approach adopted to control for the existence of second order effects. The equation estimating the determinants of disposable income inequality should include controls for the following factors: (a) those other political and institutional factors that affect redistribution besides decentralization; (b) the variables conditioning the distribution of disposable income that relate to demographic processes, general economic conditions and the structure and organization of the labor market (which are known to be a major determinant of wage inequality: Rueda and Pontusson 2000: 350-383; Wallerstein 1999: 649-680); and (c) the

⁴ As Eriksson has argued (1987:863-881), the higher the cross-equation error correlation, the less likely to find a proper instrument to disentangle the two-way causality. Hence the importance of making the right assumptions about the structure of the error term and implementing the appropriate specification.

second order effects of redistributive policies. This last point brings us back to the problem of incidence and the strategies to approach it.

The inclusion as explanatory variables of the incumbent's ideology⁵ and the levels of union density, together with decentralization, satisfies the controls required in (a). The specialized literature has consistently proved these two variables as major determinants of redistribution. Union density (taken as a proxy for labor power) and the incumbent's ideology capture two different dimensions of the standard "power resources approach" to the development of the welfare state⁶. The remaining question is then how to control for the sets of factors (b) and (c), including the second order effects of redistributive policies. In line with the discussion developed in section 3.4 the introduction as control of an indicator of market income inequality (see section 3.2.2.2 for definition and measurement) provides a straightforward solution.

Inequalities of disposable income are a function of market income inequalities and the direct effect (first order incidence) of redistributive policies. Market and disposable income are not identical. Therefore, although a certain degree of caution is in order when interpreting the measurements of *goodness* of the fit (which are likely to be rather high), there is nothing fundamentally wrong in using market income inequality as a control. Moreover, the purposes of the analysis must be borne in mind. What is to be assessed in the different specifications is the impact of one variable that affects redistribution and, therefore, the distribution of disposable income. This goal makes the properties of an indicator of market income inequality a very useful tool. It aggregates the impact of economic, demographic and labor market related variables and, more importantly, also includes the feedback effects of previous redistributive policies on people's labor market

⁵ In this case, for the sake of comparability with previous contributions, the incumbent's ideology is measured by the share of right wing parties cabinet portfolios. See the Data Appendix for details.

⁶ See for all Huber and Stephens (2001).

behavior and subsequently on the distribution of wages and additional sources other than earnings and welfare state transfers. By using market income as a control, second order effects are held constant and therefore the estimated impact of the other variables is net of the disturbances discussed in the previous chapter (section 3.4). The more or less redistributive profile of different types of governments and institutions is then captured by a coefficient that is not susceptible to being biased by the recursive impact of previous redistributive policies. In all these features lies the usefulness of this variable, especially in the context of a rather strict limit in the number of observations.

4.2.3.- Results and Implications⁷

Table 4.2. The Impact of Decentralization on Inequality I

	MODELS ASSUMING AN EXOGENOUS EFFECT			
	Model A	Model B	Model C	Model D
Welfare Decentralization	0.1652*** (0.006)	0.1913*** (0.0113)	0.129*** (0.010)	0.191** (0.10)
Union Density	-0.0009*** (0.00004)	-0.0007611*** (0.000290)	-0.00094*** (0.000038)	-0.00076*** (0.00028)
Incumbent's Ideology	-0.00005* (0.00002)	-0.0000246 (0.0000191)	-0.000008 (0.0000186)	-0.000024 (0.000023)
Market Income Inequality	0.7534*** (0.0351)	0.441*** (0.042)	0.722*** (0.0103)	0.441*** (0.047)
R-Squared/Log Likelihood	0.796	0.964	457.779	509.864

Standard Errors in Parenthesis. Model A: Random Effects. Model B: Fixed Effects. Panel Corrected Standard Errors. Model C: Tobit estimation excluding country dummies. Model D: Tobit estimation including country dummies.

⁷ The Summary Statistics of all the variables used in the different models discussed in this section are available in the Data Appendix at the end of the thesis.

Tables 4.2 and 4.3 display the results of the different specifications. The inclusion of different models in each table allows us to check to what extent the results obtained are sensitive to the assumptions underpinning the different specifications adopted. In the case of the regressions in which the impact of decentralization on inequality is assumed to be exogenous (Table 4.2), the specifications included fixed and random effects as well as tobit models, added to take care of the issue that the dependent variable is censored at 0 (lower limit) and 1 (upper limit). In turn, in the case of the models in which the potential problem of endogeneity is taken care of (Table 4.3) the models do not include fixed effects because, for some of them, the decentralization of redistribution is instrumented by ethnic fractionalization, a variable that does not vary over time.

Table 4.3. The Impact of Decentralization on Inequality II

	MODELS CONTROLLING FOR ENDOGENEITY		
	Model A	Model B	Model C
Welfare	0.08177	0.0135	0.0298*
Decentralization	(0.0664)	(0.0182)	(0.0178)
Union	-0.00127	-0.000913	-0.00090***
Density	(0.00028)***	(0.000086)***	(0.00008)
Incumbent's	-0.000027	-0.0000793*	-0.000056
Ideology	(0.000026)	(0.0000474)	(0.00004)
Market Income	0.3835	0.7534	0.7415
Inequality	(0.0612)***	(0.0540)***	(0.052)***
R-Squared	0.6463	0.6138	0.795

Standard Errors in Parenthesis. Model A: Two-Stage least Square Instrumental Variable Estimation. Decentralization is instrumented by ethnic fractionalization, the only variable in our dataset that bears no direct relationship with the distribution of income but does so with the levels of decentralization, as proved by the results reported in Chapter 3. Model B: Path Analysis in Structural form. Model C: Seemingly Unrelated Regression (SUR) estimation. The estimates report the coefficients of the equation of interest. Estimates of the first equations are available upon request.

The control variables behave in the way that is expected, with the exception of the variable measuring the incumbent's ideology. Obviously, market income inequality is a strong and consistent positive predictor of disposable income inequality. In addition, the levels of union density are, *ceteris paribus*, negatively correlated with the levels of disposable income inequality. This is consistent with the literature. On the contrary, the estimates of the variable of the incumbent's ideology are not robust, being sensitive to different specifications. Nothing can be safely concluded about this variable except for the claim that the link between the incumbent's ideology and the final outcome in terms of the distribution of income is hard to tap in the context of a regression analysis. This is the case mainly because governments' policy choices potentially affecting the distribution of income are multidimensional (several effects may be working in opposite directions) and complex enough to escape a single scale (for instance, conservative central European governments put a lot more effort into transfers than into services, which in pure income terms may make them appear fairly redistributive). I shall close this section with the discussion of the implications of the results for the issue of interest, namely the test of the endogeneity hypothesis.

Recall that the test was set as a comparison of the role of the variable measuring the decentralization of redistribution under two types of econometric specifications, namely a group of models that assume the impact of decentralization to be exogenous and a second group in which the relation is specified controlling the bidirectional nature of the relation between decentralization and inequality. Indeed, we know from Chapter 3 that, consistently with the argument, inequality is a major determinant of decentralization. This finding indicated that our account of the causal relation was in the right direction, but in order to back it in full empirically it was necessary to look at the relation from the opposite perspective.

The results are straightforward. While decentralization appears to be a good predictor of inequality when it is taken as exogenous

in relation to the outcome of interest, in two out of the three approaches used to control for endogeneity decentralization is no longer a statistically significant predictor of the levels of disposable income inequality. Moreover, the estimates obtained in the seemingly unrelated regression are only significant at the 90% confidence level and, more importantly, substantially smaller than the ones produced by any of the models reported in Table 4.2⁸. Thus, the expectation according to which once the specification controls for endogeneity the impact of decentralization on inequality is reduced or even ceases to be statistically significant is clearly supported by the data. Briefly put, the findings confirm the endogeneity hypothesis.

So what does it really mean? Put differently, which are the substantive implications of these findings? These are mainly two: the first one regards the issue of the direction of causality in the relation between decentralization and inequality as theorized by the argument developed in Chapter 2; the second one concerns the scope of our understanding of the distributive consequences of decentralization themselves.

The confirmation of the endogeneity hypothesis sheds some light on the issue of the direction of causality. In addition, the confirmation of the endogeneity hypothesis makes clear that a large share of the inegalitarian effect conventionally attributed to decentralization is attributable, consistently with our argument, to a problem of reverse causality in the specifications. Yet new questions arise. Indeed, according to some of the models (in particular models A and B in Table 4.3), it could be argued that the relation between decentralization and inequality is not, as argued in this thesis, a bidirectional relation whose different

⁸ Note that for the purposes of this section I am not particularly interested in the specific magnitude of the effects of the independent variables, but only on whether the effect is there or not depending upon the way in which the model is specified. Thus, in this section, I shall not add a discussion on the predicted values of the independent variables of interest.

sequences are analyzable in their own right, but rather a one way relation that, in order to be understood, must be turned upside down. Taking the argument to the extreme, it could be argued on the basis of these two models that any association between decentralization and inequality is simply the result of the latter causing the former. Former contributions would have gotten the direction wrong, but the relation would still be mono-directional. There is no real basis to substantiate such a claim in the results presented in Tables 4.2 and 4.3. It would simply be an exercise of overinterpretation that could potentially mislead our understanding of the relation as much as the idea of decentralization being exogenous to inequality. This brings me to the issue of the real scope of the findings as an account of the distributive consequences of decentralization.

The scope is very limited. Indeed, there are good grounds for believing that some other analytical strategy must be adopted in order to assess the distributive consequences of decentralization and, therefore, establish whether causality is mono or bi-directional in the relation between decentralization and inequality. The first and most obvious reason is the lack of statistical consistency in Table 4.3 between models A and B, on the one hand, and model C on the other. The former indicate that controlling for endogeneity eliminates an independent effect of decentralization on inequality. The latter suggests that the effect, albeit significantly reduced, still exists. This fact itself imposes a good deal of caution on any statement to be made on the issue of the distributive impact of decentralization and, in turn, of mono versus bi-directional causality. But this is only part of the reason. Even if all three models were to indicate that controlling for endogeneity eliminates the effect of decentralization on inequality at the aggregate level, the findings reported in Table 4.3 would be far from sufficient to close the topic. In order to substantiate this statement, let me briefly refer to two interrelated issues: the limits inherent in an aggregate approach and the counterfactual nature of the study of the distributive effects of any given institutional change.

In the event of a change towards decentralization, a number of different political processes are activated in each of the units as well as in the union as a whole. Some regions, as argued above, may decide to increase redistribution while some others may choose otherwise. These choices are facilitated by decentralization itself and they channel its distributive effects. The problem is that these decisions may work in different ways; and depending upon how they get combined they may or may not be reflected by a regression coefficient. If all the units in one country follow a similar pattern (say reduction of redistribution, increase in inequality), it is likely that in this country the association between decentralization and inequality will gain in strength. As long as a similar process takes place in a large enough number of countries, a significant coefficient of regression will emerge even after the appropriate controls and specifications are adopted. If, on the contrary, decentralization makes units follow different strategies, the distributive effects of the unit's choices may cancel each other out. If this pattern is frequent enough, the coefficient in the regression is doomed to be insignificant. But this by no means implies that decentralization has no distributive consequences. The impossibility of capturing the internal processes taking place in the different units within the union is a major limitation of the conclusions obtained from an approach to the distributive effects of institutional changes based on country-level data. Institutional changes may generate multiple reactions and distributive effects that are worth being analyzed on their own, before they cancel each other out at a higher level of aggregation.

Secondly, the counterfactual nature of the study of the distributive consequences of institutional choices limits the implications of the findings reported in Tables 4.2 and 4.3. This refers back to the discussion developed in section 3.4. Let me briefly recall its bottom line: a regression analysis on observables does not satisfy the coterminability condition, i.e., the idea that the best way to capture the impact of an institutional change is to find a case in which only the factor of interest changes while the rest of the factors remain unaltered. Those cases are obviously missing in

any sample of observables like the one on which the analyses of Tables 4.2 and 4.3 have been performed. The use of a selected sample may, depending on the distribution of observables, bias the results by artificially strengthening the weight of particular associations. And this is so even if the second order effects of previous redistributive policies have been taken care of by controlling for an indicator of market income. As argued in detail in the previous chapter, the features of micro-simulation analysis provide the methodological alternative to both continuing dealing with second order effects and overcoming these two limitations. In the next section I resort to micro-simulations to analyze in detail the distributive consequences of a change in the territorial allocation of the capacity to perform redistribution. In so doing, I offer a test for the hypothesis that the distributive consequences of decentralization are a function of the pre-existing structure of inequality. This analysis will in turn help close the discussion on the number of directions in the relation between decentralization and income inequality.

4.3.- Comparing Distributive Outcomes: A micro-simulation analysis of an imaginary European Federation

This section is structured as follows. First I present the logic of the analysis and justify the selection of the alternative scenarios to be compared. These are the EU 3⁹ and EU13 federations. The empirical analysis and the comparison between the actual and the simulated scenarios follow.

⁹ EU3 includes Spain, Italy and France as constituent units. EU13 includes, in addition to these three countries, Denmark, The Netherlands, Belgium, Ireland, Greece, Portugal, Austria, Sweden, Germany and the UK.

4.3.1.- Simulating Institutional Changes: general logic and definition of alternative scenarios

In what follows I undertake an analysis aimed at making the most of the advantages of micro-simulations as tool to study the distributive effects of political and institutional changes. These were the possibility of disaggregating and studying the distributive effects for each of the units, the possibility of assuming away second order effects in that the direct effects of the simulated policies are the only alteration in place and, finally, the capacity to design a comparison that satisfies the cotenability condition as closely as possible. In order to exploit these advantages, it is necessary to have a dataset with representative samples for each of the territorial units belonging to the union. In addition, a number of variables measuring different sources of income for each household is necessary so that comparable measures of redistribution and inequality can be computed. This set of conditions limits considerably the number of alternative data sources. In this case, I will perform the analysis using the fifth wave of the European Community Household Panel (ECHP)¹⁰. Standard national datasets, with the exception of the GSOEP and the PSID, do not usually have "regionally" representative samples for the income variables. Moreover, the internal variation among the constituent units is not as large as the one to be found in the EU, a feature that is requested in order to grasp the "diversification" effect.

Given the data available the empirical analysis in this section is built around the following logic: a good way to capture the distributive effect due to a change in the institutional design is to invert the process and consider the actual scenario in the European Union a setting in which redistributive policies are decentralized, i.e., fully controlled by the unions. The scarce and very

¹⁰ A brief description of this database is provided in the Data Appendix at the end of the thesis.

programmatic developing of anything resembling a European Social Policy make this assumption hard to object to (Gomá 1996: 209-230; Majone 1993: 153-170; Streeck 1995: 389-431; Scharpf 1996; 1997a : 18-36; 1997b: 528-538). This provides the benchmark case to be compared against a number of simulated scenarios of different "centralized" redistributive policies at the EU level. The gap between the actual and the different simulated scenarios in terms of a number of indicators of inequality would tap the distributive impact attributable to the institutional difference between a centralized and a decentralized regime.

The definition of the simulated scenarios to be compared to the actual decentralized case is driven by the goal of testing, on real data, the extent to which the expectations derived from the hypothetical comparison between unions A and B receives empirical support. In order to do so, the rest of this section investigates the distance in terms of distributive outcomes between the status quo and different simulated scenarios in two hypothetical federations that have been designed to match unions A and B above as closely as possible.

From this perspective, the first union (A) is an imaginary European federation composed of three units, namely France, Spain and Italy. Consistently with the hypothetical characteristics of union A discussed above, the three units have been selected because in relation to the union their national incomes, demographic characteristics and welfare systems are relatively similar. Obviously, differences still remain in all these respects as well as in what regards the sectors of specialization of each of these three economies, but the combination of these three countries within a common hypothetical union is the design that, without matching it perfectly, most resembles the features of a union composed of similar units.

At this point, once the imaginary federation has been put together, a decision on the "centralized" level of expenditure needs to be made. A political decision about redistribution is a complex matter to simulate. In order to make things simple, and the comparison neat , by centralized redistribution it is meant a

political decision that consists of requesting each of the welfare systems in the units to converge to the Union's average level of generosity. In other words, the only dimension of redistribution that is centralized is the decision about the levels of generosity to be provided. Incidentally, in the context of the EU, this is likely to be the only type of politically feasible centralization of social policy. I shall come back to this point in the final section of the chapter.

The specific steps undertaken to simulate this policy are as follows:

- 1) First, the levels of generosity in each of the units as well as in the union as a whole are calculated: this is done by adding all welfare transfers together and dividing the result by the number of recipient households. So generosity is defined as average total transfers per recipient household.

- 2) In a second step, a union to unit generosity ratio is calculated, obtaining a scaling factor to be applied to each of the units by way of implementation of the centrally decided level of generosity.

- 3) The income variables are recalculated in order to incorporate the simulated scenario. This is done by multiplying the variables measuring the existing redistributive transfers by the unit's scaling factor. Thereafter, simulated income variables are obtained by replacing current transfers by simulated ones. Note that wages and market income variables remain unaltered (i.e. second order effects are *really* assumed away).

Once the policy has been implemented, two comparable EU3 unions are obtained: one in which redistribution is performed by the unit's welfare states and a simulated one, in which the levels of generosity of these welfare states have been forced, via centralized regulation, to provide the same level of generosity across the units. At this stage, the distributions of income are ready to be analyzed and compared. For this purpose, two conventional measurements are implemented. In order to capture the overall levels of

inequality at the different territorial levels, the Gini coefficient is calculated before and after the "centralization of redistribution". In addition, in order to overcome the lack of sensitiveness of the Gini coefficient to the different parts of the distribution, I analyze the distributive effects of the institutional change at the bottom of the distribution by calculating before and after the reform, and again for all territorial levels, the proportion of people below the poverty line [50% of the median income].

Finally, both indicators are calculated twice: once including pensions and pensioners respectively in the income definition and the sample, once excluding them. Having distinctive features when it comes to distributive processes, pensioners are usually (as in this very dissertation) separated from the share of the population whose distributive profiles are dominated by their relative position within the labor market. Because this may affect our conclusions about the distributive consequences of modifying the territorial allocation of the capacity to redistribute, replicating the calculations with and without pensioners provides us with a sensitivity check of the extent to which our results are affected by the presence/absence of this large share of the population.

Once the distributive consequences of the centralizing redistribution in the EU 3 have been analyzed, it is necessary for the purposes of the comparison between unions A and B to replicate the same analysis on the basis of an EU 13 imaginary European federation. The same analytical strategy is implemented. An assumed centralized political decision brings the levels of generosity in all 13 units to the EU13 average. The expectation in Union B is that the distributive effects will be much larger because of the larger distance between the units that characterizes the pre-existing structure of inequality. The steps and calculations performed in Union B are the same as the implemented in Union A with one qualification. In order to illustrate how "different" centralized redistributive policies would interact with the actually existing ones in each of the constituent units, I have included two additional comparisons in the empirical analysis.

The first one intends to grasp the distance between the actually decentralized EU13 and a potentially centralized one in which the generosity levels matched those achieved in Denmark. In this way, the status quo can be compared to a scenario in which the maximum levels of generosity are generalized throughout the whole union. Alternatively, at the other extreme, the status quo can be compared to the generalization of the minimum level of generosity. Hence the final analysis is a comparison between the status quo and a centralized federation whose redistributive policies would adopt either the Greek (if pensions/pensioners are excluded) or the Portuguese (if included) levels of generosity.

The comparative analysis of these diverging institutional scenarios provides empirical grounds for a sound analysis of the distributive effects of a change in the territorial allocation of redistributive responsibilities. I turn now to present the results of the analysis and discuss their implications.

4.3.2.- Comparing distributive outcomes: an empirical analysis of EU3 and EU13 federations

This section describes the results of the analysis whose logic has been outlined above. I present first the results for EU3. Thereafter I present the results for EU13. The generosity levels in all tables represent Euro per recipient household. All throughout this section tables report weighted and unweighted estimates.

Union A: EU 3

Tables 4.4 and 4.5 present the results obtained from the calculation of an EU3 centralized federation, composed of Spain, Italy and France as units, in which a centralized redistributive policy such that a common level of generosity equal to the union's average is implemented. Table 4.4 reports the distributive effects for the whole union. It compares the Gini Coefficient and the Poverty rate before and after the centralization of redistribution. Finally, figures are calculated twice, i.e., including/excluding

pensions and pensioners from the sample and the income calculations. In turn, Table 4.5, using the same calculations, reports the outcome of the institutional change from the perspective of the constituent units. All tables depict the magnitude of the distance (change) between the actual and the simulated scenarios in percentage points (pp).

Table 4.4. EU3. Overall distributive effects of a centralized level of generosity equal to the Union's Average

<i>Gini Coefficient. Pensions and Pensioners Excluded</i>			
	<i>Before</i>	<i>After</i>	<i>%Change</i>
Weighted	0.368	0.365	-0.3
Unweighted	0.363	0.361	-0.2
<i>Poverty Rate. Pensions and Pensioners Excluded.</i>			
	<i>Before</i>	<i>After</i>	<i>%Change</i>
Weighted	0.164	0.166	0.2
Unweighted	0.158	0.156	-0.2
<i>Gini Coefficient. Pensions and Pensioners Included.</i>			
	<i>Before</i>	<i>After</i>	<i>%Change</i>
Weighted	0.369	0.363	-0.6
Unweighted	0.366	0.360	-0.6
<i>Poverty Rate. Pensions and Pensioners Included.</i>			
	<i>Before</i>	<i>After</i>	<i>%Change</i>
Weighted	0.145	0.136	-0.9
Unweighted	0.144	0.138	-0.6

Income definitions: Equivalent Household Disposable Income = (Net Income from Work + Other Private Income + Unemployment Benefits + Family Allowances + Education Allowances + Housing Allowances + Sickness Benefits + Social Assistance + Any Other Personal Benefit)/OECD Equivalence Scale. When Pensioners/Pensions are included, net old age and survivors benefits are also included in the definition of disposable income.

Table 4.5. EU3: Distributive Effects on the constituent units of a centralized redistributive policy providing the Union's average level of Generosity

	Pensions and Pensioners excluded				Pensions and Pensioners Included					
	Gen. Level (*)	EU/C Generosity Ratio	Before	After	% Change	Gen. Level	EU/C Generosity Ratio	Before	After	% Change
Gini Coefficient										
	3628					8928				
France	4765	0.761	0.308	0.319	1.1	9969	0.895	0.298	0.304	0.6
Spain	3257	1.113	0.366	0.363	-0.3	7496	1.191	0.343	0.334	-0.9
Italy	2307	1.572	0.334	0.326	-0.8	9258	0.964	0.315	0.317	0.2
Poverty Rate										
	3628					8928				
France	4765	0.761	0.113	0.128	1.5	9969	0.895	0.094	0.099	0.5
Spain	3257	1.113	0.160	0.152	-0.8	7496	1.191	0.129	0.131	0.2
Italy	2307	1.572	0.134	0.115	-1.9	9258	0.964	0.125	0.126	0.1

(*) Figures represent Euro per recipient household. ECHP Weighted data.

The first point to be noted is that the centralization of redistribution in EU3 implies almost no change for the distribution of income in the overall union. Incidentally, the results do not seem to be dramatically affected by the weights except for the case of the poverty rate (when pensioners are excluded). In fact, changes appear to be only of relevant, albeit relatively small, magnitude at the bottom of the distribution and only if pensioners are included: the poverty rate drops by 0.6-0.9 percentage points. For all the other calculations the centralization of redistribution has a very small, almost negligible, impact on the union's distribution of income.

However, as is evident from Table 4.5, this does not mean that there are no distributive effects at all: the simulated institutional change provokes effects in each of the units that work in opposite directions. Bringing every unit to the average level of generosity makes inequality increase in those units above the average and viceversa. In general, for the EU 3, the magnitude of the distributive changes is rather small and follows the expected pattern. However, there are several aspects worth highlighting, especially in the context of an allegedly homogeneous EU 3. First, there is still variance in terms of the levels of generosity of the different welfare systems. The case is clearer in the absence of pensions and pensioners. Generosity in France is well above those of the other two units and the union's average. As a result, after centralization, income inequality increases in France by 1.1 percentage points, while in Spain and Italy it is reduced by 0.3 and 0.8 respectively. In turn the poverty rate in France increased by 1.5 while it again drops in Spain (0.8) and Italy (1.9). The importance of pensions is highlighted when comparing these figures to the ones on the right hand side columns in Table 4.5. The distributive impact is generally reduced because the differences between the units are reduced when pensions and pensioners are considered. Italy is an extreme example of the centrality of pensions. In the absence of pensions its levels of generosity are significantly below the EU average. Once pensions are considered, the Italian welfare state turns out to be slightly

more generous than the EU 3 average. In this context, centralizing redistribution would increase inequality in Italy whereas in a world without pensioners, centralization would reduce inequality by 0.8 percentage points.

To summarize, there are distributive consequences of centralizing redistribution in an EU 3 federation, mainly attributable to the difference in the levels of generosity between France and the other two units. However, these are, in absolute terms, rather small and, as a result, when the effects are aggregated at the level of the overall union the centralization of redistribution, in the context of union A (Eu 3), comes very close to being distributively neutral.

Union B: EU 13.

The presentation of the results for the EU 13 federation unfolds in a similar way to the one above: it presents the same indicators, both with and without pensions / pensioners, and organizes the tables in the same fashion, including the presentation of the before/after changes in percentage points. Table 4.6. reports the results for the whole union after centralizing redistribution by bringing every country's level of generosity up to the EU average. Tables 4.7.1 (GINI) and 4.7.2 (Poverty Rate) look at the changes from the perspective of the units. In addition, in this case, the same procedure has to be implemented twice in order to present the results of simulating two other centralized redistributive policies, namely bringing every unit up to the Danish levels of generosity (Table 4.8 for the overall union; Tables 4.9.1 (Gini) and 4.9.2 (Poverty rate) for the units) and, finally, bringing every unit down to the Greek/Portuguese ones (Table 4.10 for the union; Tables 4.11.1 (Gini) and 4.11.2 (Poverty Rate) for the units). The information contained in these tables is very rich, maybe too detailed. Thus, in order to make the most of it, I shall structure my comments in the following way. First, I will refer to the distributive effects at the union level of the three simulated centralized policies, namely the decision to impose respectively the union's average, maximum and minimum levels of generosity

(Tables 4.6, 4.8 and 4.10). Secondly, I will draw the main insights from the data reporting the effects of the three different strategies of centralization at the unit's levels. In both steps illustrative examples will be selectively extracted from Tables 4.6 to 4.11.2.

Table 4.6. EU13. Overall distributive effects of a centralized level of generosity equal to the Union's average

<i>Gini Coefficient. Pensions and Pensioners Excluded.</i>			
	<i>Before</i>	<i>After</i>	<i>% Change</i>
Weighted	0.369	0.363	-0.6
Unweighted	0.366	0.360	-0.6
<i>Poverty Rate. Pensions and Pensioners Excluded.</i>			
	<i>Before</i>	<i>After</i>	<i>% Change</i>
Weighted	0.195	0.177	-1.8
Unweighted	0.196	0.178	-1.8
<i>Gini Coefficient. Pensions and Pensioners Included.</i>			
	<i>Before</i>	<i>After</i>	<i>%Change</i>
Weighted	0.362	0.351	-1.1
Unweighted	0.362	0.350	-1.2
<i>Poverty Rate. Pensions and Pensioners Included.</i>			
	<i>Before</i>	<i>After</i>	<i>%Change</i>
Weighted	0.180	0.152	-2.8
Unweighted	0.188	0.156	-3.2

Income definitions: Equivalent Household Disposable Income = (Net Income from Work + Other Private Income + Unemployment Benefits + Family Allowances + Education Allowances + Housing Allowances + Sickness Benefits + Social Assistance + Any Other Personal Benefit)/OECD Equivalence Scale. When Pensioners/Pensions are included, net old age and survivors benefits are also included in the definition of disposable income.

If the units of an EU13 federation implemented the centralized policy of bringing everyone's level of generosity up to the union's average (Table 4.6), inequality in the whole union would drop by 0.6 percentage points (pensioners excluded)/1.2 (pensioners included). In the case of an EU3 the reduction ranged between 0.2(pensioners excluded) and 0.6 (pensioners included). The

Table 4.7.1. EU13: Distributive Effects on the constituent units of a centralized redistributive policy providing the Union's average level of Generosity. GINI COEFFICIENTS.

	Pensions and Pensioners excluded				Pensions and Pensioners Included					
	Gen. Level (*)	EU/C Generosity Ratio	Before	After	% Change	Gen. Level	EU/C Generosity Ratio	Before	After	% Change
	4281					8340				
Denmark	7110	0.602	0.227	0.261	3.4	9842	0.847	0.229	0.247	1.8
Netherlands	5754	0.744	0.306	0.314	0.8	9531	0.875	0.295	0.301	0.6
Belgium	5284	0.810	0.361	0.376	1.5	10078	0.827	0.351	0.369	1.8
France	4765	0.898	0.308	0.313	0.5	9969	0.836	0.298	0.308	1
Ireland	4096	1.04	0.349	0.345	-0.4	6805	1.225	0.337	0.315	-2.2
Italy	2307	1.85	0.334	0.324	-1	9258	0.900	0.315	0.321	0.6
Greece	996	4.29	0.355	0.347	-0.8	5435	1.534	0.359	0.350	-0.9
Spain	3257	1.31	0.366	0.358	-0.8	7496	1.112	0.343	0.337	-0.6
Portugal	1047	4.08	0.387	0.362	-2.5	3243	2.571	0.386	0.381	-0.5
Austria	4771	0.897	0.289	0.294	0.5	10435	0.799	0.274	0.291	1.7
Sweden	5659	0.756	0.261	0.280	1.9	10519	0.792	0.250	0.268	1.8
Germany	4487	0.954	0.291	0.294	0.3	8620 ¹	0.967	0.280	0.282	0.2
UK	5576	0.767	0.322	0.335	1.3	8509	0.980	0.329	0.331	0.2

(ECHP: Weighted data; 0 incomes included in the calculations) (*) Figures represent Euro per recipient household.

¹ The German levels of generosity go up to 9763 Euro per recipient household if Easter Länder are excluded from the calculations.

Table 4.7.2. EU13: Distributive Effects on the constituent units of a centralized redistributive policy providing the Union's average level of Generosity. POVERTY RATES.

	Pensions and Pensioners excluded			Pensions and Pensioners Included			% Change
	Gen. Level (*)	EU/C Generosity Ratio	Before After	Gen. Level (*)	EU/C Generosity Ratio	Before After	
	4281			8340			
Denmark	7110	0.602	0.057 0.112	9842	0.847	0.047 0.069	2.2
Netherlands	5754	0.744	0.086 0.103	9531	0.875	0.063 0.066	0.3
Belgium	5284	0.810	0.103 0.126	10078	0.827	0.081 0.114	3.3
France	4765	0.898	0.113 0.116	9969	0.836	0.094 0.108	1.4
Ireland	4096	1.04	0.145 0.132	6805	1.225	0.101 0.074	-2.7
Italy	2307	1.85	0.134 0.117	9258	0.900	0.125 0.126	0.1
Greece	996	4.29	0.134 0.111	5435	1.534	0.137 0.130	-0.7
Spain	3257	1.31	0.160 0.146	7496	1.112	0.129 0.132	0.3
Portugal	1047	4.08	0.124 0.096	3243	2.571	0.114 0.112	-0.2
Austria	4771	0.897	0.071 0.072	10435	0.799	0.057 0.070	1.3
Sweden	5659	0.756	0.093 0.120	10519	0.792	0.073 0.085	1.2
Germany	4487	0.954	0.089 0.092	8620 ²	0.967	0.082 0.083	0.1
UK	5576	0.767	0.138 0.163	8509	0.980	0.145 0.148	0.3

(ECHP: Weighted data; 0 incomes included in the calculations) (*) Figures represent Euros per recipient household.

² The German levels of generosity go up to 9763 Euro per recipient household if Easter Länder are excluded from the calculations.

distributive effects are larger, albeit not dramatically. However, if we concentrate on the poverty rate, which implies a closer focus on the bottom of the distribution, the differences are significantly larger. If pensioners are excluded, in the EU 3 the poverty rate fell by only 0.2 percentage points. With the same policy in an EU13 it would drop by 1.8. If, alternatively, pensioners and pensions are included in the calculations the magnitude of the reduction is 0.9 for the EU3 and 2.8 for the EU13. To put it briefly, the centralization of redistribution in an EU 13 context generates larger distributive effects than in an EU3 one, especially at the bottom of the distribution.

Table 4.8. EU13. Overall distributive effects of a centralized level of generosity equal to the Danish one

<i>Gini Coefficient. Pensions and Pensioners Excluded.</i>			
	<i>Before</i>	<i>After</i>	<i>%Change</i>
Weighted	0.369	0.347	-2.2
Unweighted	0.366	0.346	-2.0
<i>Poverty Rate. Pensions and Pensioners Excluded.</i>			
	<i>Before</i>	<i>After</i>	<i>%Change</i>
Weighted	0.196	0.172	-2.4
Unweighted	0.196	0.175	-2.1
<i>Gini Coefficient. Pensions and Pensioners Included.</i>			
	<i>Before</i>	<i>After</i>	<i>%Change</i>
Weighted	0.360	0.343	-1.7
Unweighted	0.362	0.342	-2.0
<i>Poverty Rate. Pensions and Pensioners Included.</i>			
	<i>Before</i>	<i>After</i>	<i>%Change</i>
Weighted	0.180	0.151	-2.9
Unweighted	0.188	0.155	-3.3

Income definitions: Equivalent Household Disposable Income = (Net Income from Work + Other Private Income + Unemployment Benefits + Family Allowances + Education Allowances + Housing Allowances + Sickness Benefits + Social Assistance + Any Other Personal Benefit)/OECD Equivalence Scale. When Pensioners/Pensions are included, net old age and survivors benefits are also included in the definition of disposable income.

Table 4.9.1. EU13: Distributive Effects on the constituent units of a centralized redistributive policy providing the Danish levels of Generosity. GINI COEFFICIENTS.

	Pensions and Pensioners Excluded				Pensions and Pensioners Included					
	Gen. Level (*)	DK/C Generosity Ratio	Before	After	% Change	Gen. Level (*)	DK/C Generosity Ratio	Before	After	% Change
	4281					8340				
Denmark	7110	1	0.227	0.227	0	9842	1	0.229	0.229	0
Netherlands	5754	1.235	0.306	0.303	-0.3	9531	1.032	0.295	0.294	-0.1
Belgium	5284	1.345	0.361	0.341	-2	10078	0.976	0.351	0.353	0.2
France	4765	1.491	0.308	0.291	-1.7	9969	0.987	0.298	0.299	0.1
Ireland	4096	1.735	0.349	0.297	-5.2	6805	1.446	0.337	0.298	-3.9
Italy	2307	3.081	0.334	0.325	-0.9	9258	1.063	0.315	0.313	-0.2
Greece	996	7.137	0.355	0.358	0.3	5435	1.810	0.359	0.352	-0.7
Spain	3257	2.182	0.366	0.348	-1.8	7496	1.312	0.343	0.331	-1.2
Portugal	1047	6.784	0.387	0.375	-1.2	3243	3.034	0.386	0.391	0.5
Austria	4771	1.490	0.289	0.275	-1.4	10435	0.943	0.274	0.277	0.3
Sweden	5659	1.256	0.261	0.247	-1.4	10519	0.935	0.250	0.254	0.4
Germany	4487	1.584	0.291	0.267	-2.4	8620 ³	1.141	0.280	0.274	-0.6
UK	5576	1.275	0.322	0.312	-1	8509	1.156	0.329	0.318	-1.1

(*) Figures represent Euro per recipient household. ECHP weighted data; 0 incomes included in the calculation.

³ The German levels of generosity go up to 9763 Euro per recipient household if Easter Länder are excluded from the calculations.

Table 4.9.2. EU13: Distributive Effects on the constituent units of a centralized redistributive policy providing the Danish level of Generosity. POVERTY RATES.

	Pensions and Pensioners Excluded				Pensions and Pensioners Included					
	Gen. Level (*)	DK/C Generosity Ratio	Before	After	% Change	Gen. Level (*)	DK/C Generosity Ratio	Before	After	% Change
EURO 13	4281					8340				
Denmark	7110	1	0.057	0.057	0	9842	1	0.047	0.047	0
Netherlands	5754	1.235	0.086	0.073	-1.3	9531	1.032	0.063	0.063	0
Belgium	5284	1.345	0.103	0.085	-1.8	10078	0.976	0.081	0.086	0.5
France	4765	1.491	0.113	0.096	-1.7	9969	0.987	0.094	0.093	-0.1
Ireland	4096	1.735	0.145	0.052	-9.3	6805	1.446	0.101	0.053	-4.8
Italy	2307	3.081	0.134	0.119	-1.5	9258	1.063	0.125	0.127	0.2
Greece	996	7.137	0.134	0.113	-2.1	5435	1.810	0.137	0.136	-0.1
Spain	3257	2.182	0.160	0.138	-2.2	7496	1.312	0.129	0.131	0.2
Portugal	1047	6.784	0.124	0.089	-3.5	3243	3.034	0.114	0.116	0.2
Austria	4771	1.490	0.071	0.062	-0.9	10435	0.943	0.057	0.058	0.1
Sweden	5659	1.256	0.093	0.078	-1.5	10519	0.935	0.073	0.075	0.2
Germany	4487	1.584	0.089	0.049	-4	8620 ⁴	1.141	0.082	0.075	-0.7
UK	5576	1.275	0.138	0.118	-2	8509	1.156	0.145	0.130	-1.5

(ECHP: Weighted data; 0 incomes included in the calculations) (*) Figures represent Euros per recipient household.

⁴ The German levels of generosity go up to 9763 Euro per recipient household if Easter Länder are excluded from the calculations.

Table 4.10. EU13. Overall distributive effects of a centralized level of generosity equal to the Greek/Portuguese one.

<i>Gini Coefficient. Pensions and Pensioners Excluded</i>			
	<i>Before</i>	<i>After</i>	<i>%Change</i>
Weighted	0.369	0.406	3.7
Unweighted	0.360	0.40	4.0
<i>Poverty Rate. Pensions and Pensioners Excluded.</i>			
	<i>Before</i>	<i>After</i>	<i>%Change</i>
Weighted	0.195	0.231	3.6
Unweighted	0.196	0.225	2.9
<i>Gini Coefficient. Pensions and Pensioners Included.</i>			
	<i>Before</i>	<i>After</i>	<i>%Change</i>
Weighted	0.360	0.426	6.6
Unweighted	0.362	0.419	5.7
<i>Poverty Rate. Pensions and Pensioners Included.</i>			
	<i>Before</i>	<i>After</i>	<i>%Change</i>
Weighted	0.180	0.24	6.0
Unweighted	0.188	0.231	4.3

Income definitions: Equivalent Household Disposable Income = (Net Income from Work + Other Private Income + Unemployment Benefits + Family Allowances + Education Allowances + Housing Allowances + Sickness Benefits + Social Assistance + Any Other Personal Benefit)/OECD Equivalence Scale. When Pensioners/Pensions are included, net old age and survivors benefits are also included in the definition of disposable income.

Not surprisingly the magnitude of the distributive effects increases even more when, in the context of an EU13 federation, the status quo is compared to the other two scenarios. If all the units are requested by law to provide benefits whose generosity matches the Danish level, total inequality decreases by about 2 percentage points, while the poverty rate does so by about 2.4- 3.0. The drop is not as dramatic as is the increase in both figures if the centralized policy at work happened to bring the units' welfare states down to the Greek/Portuguese levels of generosity. Under such conditions, the Union's Gini coefficient would rise between 3.7 percentage points (pensioners excluded) and 6.6 (pensioners included). Likewise, the poverty rate would increase by 3.6

Table 4.11.1. EUI3: Distributive Effects on the constituent units of a centralized redistributive policy providing the Greek (excluding pensions and pensioners) /Portuguese (including pensions and pensioners) levels of Generosity. GINI COEFFICIENTS.

	Excluding Pensions and Pensioners				Including Pensions and Pensioners					
	Gen. Level (*)	PO/C Generosity Ratio	Before	After	% Change	Gen. Level (*)	PO/C Generosity Ratio	Before	After	% Change
EURO 13	4281					8340				
Denmark	7110	0.140	0.227	0.320	9.3	9842	0.329	0.229	0.350	12.1
Netherlands	5754	0.173	0.306	0.349	4.3	9531	0.340	0.295	0.379	8.4
Belgium	5284	0.188	0.361	0.437	7.6	10078	0.321	0.351	0.471	12
France	4765	0.209	0.308	0.354	4.6	9969	0.325	0.298	0.386	8.8
Ireland	4096	0.243	0.349	0.428	7.9	6805	0.476	0.337	0.416	7.9
Italy	2307	0.431	0.334	0.348	1.4	9258	0.350	0.315	0.406	9.1
Greece	996	1	0.355	0.355	0	5435	0.596	0.359	0.390	3.1
Spain	3257	0.305	0.366	0.396	3	7496	0.432	0.343	0.405	6.2
Portugal	1047	0.950	0.387	0.388	0.1	3243	1	0.386	0.386	0
Austria	4771	0.208	0.289	0.337	4.8	10435	0.310	0.274	0.385	11.1
Sweden	5659	0.176	0.261	0.344	8.3	10519	0.308	0.250	0.370	12
Germany	4487	0.221	0.291	0.342	5.1	8620 ⁵	0.376	0.280	0.369	8.9
UK	5576	0.178	0.322	0.386	6.4	8509	0.381	0.329	0.415	8.6

(ECHIP: Weighted data; 0 incomes included in the calculations) (*) Figures represent Euro per recipient household.

⁵ The German levels of generosity go up to 9763 Euro per recipient household if Easter Länder are excluded from the calculations.

Table 4.11.2. EU13: Distributive Effects on the constituent units of a centralized redistributive policy providing the Greek (excluding pensions and pensioners)/Portuguese (including pensions and pensioners) levels of Generosity. POVERTY RATES.

	Excluding Pensions and Pensioners			Including Pensions and Pensioners		
	Gen. Level (*)	PO/C Ratio	% Change	Gen. Level (*)	PO/C Ratio	% Change
	4281			8340		
Denmark	7110	0.140	12.3	9842	0.329	23.3
Netherlands	5754	0.173	8.7	9531	0.340	16.6
Belgium	5284	0.188	9	10078	0.321	22.8
France	4765	0.209	8.4	9969	0.325	12.2
Ireland	4096	0.243	12.3	6805	0.476	17.5
Italy	2307	0.431	2.4	9258	0.350	13
Greece	996	1	0	5435	0.596	3.2
Spain	3257	0.305	3.1	7496	0.432	7.8
Portugal	1047	0.950	0	3243	1	0
Austria	4771	0.208	5.9	10435	0.310	15.4
Sweden	5659	0.176	10.6	10519	0.308	19.8
Germany	4487	0.221	6.5	8620 ⁶	0.376	13.8
UK	5576	0.178	7.3	8509	0.381	13.7

(ECHP: Weighted data; 0 incomes included in the calculations) (*) Figures represent Euro per recipient household.

⁶ The German levels of generosity go up to 9763 Euro per recipient household if Easter Länder are excluded from the calculations.

(pensioners excluded) and 6 (pensioners included) percentage points.

In general terms, if the level of generosity adopted at the central level is above the average, inequality and poverty are reduced, and viceversa. If the level of inequality is around the average the two processes work out at once, canceling each other out to a large extent. Put differently, what is gained from increasing generosity in the least egalitarian societies is, so to speak, lost by bringing the most redistributive down to the average. This may strike one as a rather obvious point. Far less obvious, however, is the difference in the magnitude of the distributive effects between the two alternative departures from the average: a centralized switch towards the Danish model (in terms of generosity) implies a reduction in inequality that is much smaller than the increase that would take place in the event of an alternative switch towards the Greek and Portuguese models. This points to the existence of a differential pattern of interaction between the centralized redistributive strategies and the systems actually working in the units. In order to achieve a better understanding of these processes, I shall take advantage of the possibility of isolating the distributive effects of each policy at the unit's level. In so doing, I shall see how the distributive impact of a change in the institutional design of redistribution is far from being self evident, however simple and limited in scope it might be.

Even at first sight, it is quite clear that inequality and poverty do not get reduced to the same extent across units. Let us consider Tables 4.7.1 and 4.7.2, the ones reporting the effects of generalizing the union's average level of generosity to all the constituent units. Under these conditions, inequality drops in Portugal by 2.5 percentage points while it increases in Denmark by 3.4. It could be argued that this and many other gaps simply reflect the differences among units in terms of the scaling factor, which is to say the ratio between the Union's and the Unit's levels of generosity. But, in fact, a more careful scrutiny of the results for the units show that this is not the whole story. Greece and

Portugal, excluding pensioners, present very similar union/unit generosity ratios: 4.29 for the former, 4.08 for the latter . Despite this fact, the Gini coefficient drops in Greece only by 0.8 pp while in Portugal it does by 2.5 pp. The most egalitarian societies provide additional examples showing that something other than the scaling factor accounts for the differences in distributive outcomes across the units. With the same centralized policy in place and still in a world without pensions and pensioners it is very illustrative to compare the results for Denmark and the Netherlands. With a Union to unit scaling factor of 0.74 poverty increases in the Netherlands by 1.7 percentage points. However, a slight decrease in the ratio (from 0.74 to 0.60) boosted the Danish poverty levels by 5.5 percentage points. A similar gap is found if the policy implemented consists of bringing the generosity levels down to the Greek levels. A Union/unit generosity ratio of 0.140 in Denmark implies that poverty rises by 12.3 percentage points. In turn, in the Netherlands a ratio of 0.173 increases poverty only by 8.7 points. And so on and so forth. A final comparison between Ireland and Portugal offers an additional, extreme, example.

Consider the case in which the central government imposes on every unit the Danish levels of generosity: the union to unit generosity ratio in Ireland is 1.735, managing to reduce poverty by 9.3 (pensioners excluded) percentage points (Table 4.9.2). The same ratio in Portugal is 6.784 and poverty only drops by 3.5 (pensioners excluded). These differences in outcomes are accounted for by the relative position of recipients within the distribution of income, the distance in terms of structure and coverage among the unit's welfare systems and their interaction with the different centralized policies. These three factors make the distributive impact of centralizing the decision about the levels of generosity far less obvious than it may in principle appear. Our results further reinforce this point in a two-fold way.

The complex nature of the interaction between the specificities of the distribution of income of the units and the different centralized policies is illustrated by the Greek case. The results for Greece (and to a lesser extent the Portuguese ones) show very

clearly that the distributive effects of different centralized policies in the same units are neither monotonic nor proportional. An increase in generosity from the average to the maximum union's level of generosity does not necessarily generate an attendant reduction in inequality. Indeed, depending upon the relative position of the recipients within the units distribution of income the outcome can be very different in the following sense: an increase by a small amount in the level of generosity may generate a reduction in inequality; but if generosity grows by a very large amount the structure of the income distribution may be affected in more complex ways. At one extreme, a very large increase in generosity could generate two different effects, namely a reduction of inequality at the bottom of the distribution (i.e. fewer people are below the poverty rate) coexisting, paradoxically, with an increase in the overall levels of inequality (i.e. the total relative distance among households increases). This is precisely what can be observed in the Greek case. If its levels of generosity are brought up to the union's average (Tables 4.7.1-4.7.2), the levels of inequality and poverty fall respectively by 2.5 and 2.8 percentage points. On the contrary, if its levels of generosity levels are increased even further, up to the Danish levels (Tables 4.9.1-4.9.2), the level of inequality remains almost unaltered (0.3 increase) while poverty is reduced by a lower amount (2.1).

Yet another example of the interaction between the centralized policies, the structure and coverage of the units systems and the relative position of recipients within their units' distribution of income is obtained from the differences across systems in the relative weight of pensions and pensioners¹¹. In fact, the inclusion/exclusion of pensions makes a huge difference for the distributive impact on the units of the regulations about the union's level of generosity. Let us consider the cases of Belgium,

¹¹ This comparison is based on the rather unrealistic assumption that the exclusion of pensioners does not modify the levels of generosity in other welfare state policies.

Sweden, Portugal and Ireland in the simulated union with average generosity levels (Table 4.7.1). In Belgium and Sweden inequality increases by a similar amount regardless of the inclusion/exclusion of pensions and pensioners (1.5-1.8; 1.9-1.8 respectively). In turn, in Portugal inequality is reduced by 2.5 percentage points if pensioners are excluded and only by 0.5 if otherwise. Furthermore, Ireland reverses the picture: inequality drops only by 0.4 percentage points in the absence of pensioners, while it does so by 2.2 if they are part of the sample. Similar differences are also found if alternative centralized policies are implemented. Consider Table 4.11.2, namely the one reporting the change in poverty rates if the levels of generosity are reduced to the minimum in the whole union. In such scenario, poverty in Italy would rise by 2.4 percentage points if pensions are not considered. Alternatively, should pensioners be part of the analysis, 13 % more households would end up below the poverty line. In France, on the contrary, the distance between these two figures would be much smaller. In conclusion, depending upon the relative position of pensioners, the same centralized policies generate rather different distributive outcomes across units.

To summarize, in the context of an EU 13 federation, the distributive consequences of centralizing redistribution are much larger than in an EU 3 one, regardless of the specific nature of the political decision adopted at the central level. The advantages of micro-simulations have paid off. Through them, I have been able to generate a sounder basis than a regression analysis for the purposes of analyzing the distributive consequences of an institutional change in the allocation of the territorial capacity to set the levels of generosity of the welfare state. The analysis of the units' responses to the different policies has also shown that even when the only dimension being centralized is the setting of the level of generosity, the distributive consequences of an institutional change are multidimensional and indeed far from evident. The results obtained, both the obvious and the not so obvious, have a number of implications for the specific purposes of hypothesis testing, as well as , for the general argument put

forward in this dissertation. The next section is devoted to discussing them in detail.

4.4.- Back to Politics: Implications of the Results

First, micro-simulations solve the issue, unclear after the regression analysis, of the number of directions in the relation between decentralization and inequality. Institutional changes in the design of redistribution do indeed matter for distributive outcomes, even if the only modified dimension of the design is the capacity to set the levels of generosity of the welfare state. And they do so consistently with the theoretical expectations derived from the argument of the thesis. In this sense, the analysis has shown very clearly that the actual distributive effects of a change from decentralization towards centralization (or viceversa) depend upon (a) the nature of the centralized welfare policy, (b) the distance between the specific centralized policy in place and the design and coverage of the unit's redistributive systems and, last but not least, (c) the features of the pre-existing distribution of income in each of the units. To put it more precisely, the specific distributive consequences of decentralization depend upon how these three factors are combined. This is confirmed by the fact that the expected differences between our hypothetical unions A and B, unions whose constituent units differ in number and relative distance in terms of income distribution and welfare systems, have been supported by the empirical analysis of the EU3 and EU13 imaginary federations. In other words, both the "between units" and the "diversification" effects are much stronger in the latter than in the former. However, an important qualification is in order.

In our hypothetical union A neither the "between units" nor the "diversification" effects were at work. Unions were supposed to be equivalent in their average income and diverge on other dimensions of their productive structure. Our empirical analysis of EU3 proves that this case is just an ideal type. In other words, even in a union whose constituent units are selected to be as

similar as possible, there are effects associated to the relatively small differences they present regarding average income and redistributive systems (the magnitude of the union to unit ratio in Table 6.4 provides a measurement of these differences). This does not rule out our hypothesis about the differences between unions A and B. It simply locates the key for testing it in a slightly different place, namely in a comparison of the magnitude of the between units and the diversification effects across the two unions. If what matters is the interaction between the centralized policy and the pre-existing structure of inequality, these effects and, therefore, the overall change in the income distribution should be larger in Union B (EU13) than they are in our imperfect proxy for Union A (EU3). And they should be so regardless of their specific direction. Our results show clearly that this is the case. Thus hypothesis 2, namely the claim that the impact of decentralization on inequality is decomposable into a *between units effect* and a *diversification effect* whose magnitude depends upon the pre-existing structure of inequality, can be said to be consistent with the empirical evidence.

In addition, the contingency of the distributive consequences of decentralization upon the three factors mentioned above implies that, in principle, by itself, decentralization does not necessarily generate more inequality. Assuming that as a result of centralization the union decides to bring the levels of generosity down to the Greek/Portuguese levels, it is quite clear that reverting back to the status quo, i.e. decentralizing redistribution again, would have a strong egalitarian effect. Nonetheless, an EU13 imposing the Greek levels of generosity is a scenario very hard to imagine. This brings us back to politics, to the fact that some scenarios are more likely to emerge than others. To put it more technically, this brings us back to the issue of the endogeneity of the institutional design, the locus where, according to the argument developed in this thesis, lies the key of the relation between decentralization and inequality.

There is a cumulating body of literature trying to explain why the role of the European Union executive and parliamentary

institutions is more developed in some policy areas than others (for all see, Seabright et al. 1993; Majone 1996; Scharpf 1998). It is well known that, despite the achievements of the Maastrich and Amsterdam Treaties,¹² redistributive policies are clearly kept in national states hands through the requirement of unanimity to reach EU wide decisions in fields such as worker's representation, social security, unemployment protection, taxation and industrial policy (Streeck 1995: 389-431; Pierson and Leibfried 1995: 432-465). Only initiatives affecting worker's consultation, working conditions, occupational training and health, gender equality and social exclusion are allowed to be decided by qualified majority

¹² On this point the political negotiations underpinning these two Treaties offer interesting examples and pose some questions of central interest to this dissertation. Peter Lange (1993:5-36) and Fritz Scharpf (1997 b: 520-538) have shown how the approval of the Social Protocol was only possible because the fears of the Southern European economies as to how the regulations under discussion were going to affect their economies were compensated by a large increase in the participation of Spain, Greece, Italy and Ireland in the benefits of the interregional redistributive programs (Structural Funds). To put in terms of our model, the Social Protocol was approved because the other European nations agreed to pay to reduce the value of $\delta\sigma$ in the Southern European countries. In so doing, they also raised the opportunity cost of rejecting the Social Protocol (increasing the value of S in those same countries). Likewise the UK, who had opted out in Maastrich, only accepted in Amsterdam the full incorporation of the Social Protocol into the Treaty after Blair's government was sure that the unanimity requirement was maintained for issues about "protection of workers in the event of termination of their employment contract and representation and collective defense of workers' and employers' interests, where many other delegations would have preferred a qualified majority decision making procedure" (Petite 1998:15). In other words, the UK signed the Amsterdam Treaty only after ensuring that the model of decentralized collective bargaining around which its economic strategy was built (Soskice 1990: 36-61) would remain unchanged. Both examples come to further illustrate the political logic unpacked in this thesis. Unfortunately, there is not enough room to treat them all with the deserved detail.

(Gorná 1996: 209-230; Cram 1997: 2-69). As yet, there is almost no direct link between the EU institutions and European citizenry. Existing EU legislation presents a strong regulatory bias. These developments are consistent with Majone's characterizations of regulatory versus redistributive policies as cheaper and less disruptive of existing national interests (1993: 153-170) as well as with Scharpf's (1996; 1997 b: 520-538) distinction between negative integration, namely the adoption of decisions aimed at constructing a common economic space, and positive integration, the much more difficult development of a common policy in realms traditionally in the hands of the welfare state. The former would be driven by product regulations, i.e., regulations aimed at ensuring a minimum of quality in the products offered to all EU consumers, while the latter would entail, especially in the case of social policy and redistribution, process regulations, i.e. regulations that end up increasing the costs of the final product without increasing its quality. Hence the much less limited scope of anything resembling a European social policy, as acknowledged by the European Council in March 2000 (Lisbon). There it was agreed that the social dimension of Europe deserved greater priority. During the subsequent French Presidency, "it was agreed to advance social policy on the basis of an open method of coordination, an approach that recognizes that, under the principle of subsidiarity, social policy remains the responsibility of the Member States. It was agreed that each Member State should implement a national two-year action plan for combating poverty and social exclusion, setting specific targets. [...]The open method of coordination involves using a management by objectives approach, whereby EU institutions draw up guidelines and monitor their implementation" (Atkinson 2002: 628). To summarize, one major conclusion stands out from the evolution of social policy at the EU level: the only feasible EU wide policy would be a regulation such that a set of common standards is agreed upon by the EU executive powers and the member states are left with the freedom to choose the ways and means to achieve

it (Scharpf 2002: 645-670). prospects of such a policy are far from clear (Atkinson 1995:277-290).

Herein our results, especially the ones from the comparison between the status quo and a simulated EU13 where the levels of generosity are set at the Union's average, may contribute to this discussion, albeit from a different perspective. Indeed, they do in the sense of joining previous contributions in their doubts about the political feasibility of an EU wide social security regulation.

Even the case of a regulation aiming to achieve a standardized level of generosity (while allowing the use of different means of redistribution) has been proved to be highly disruptive of the preferences about redistribution and inequality currently at work. Assuming that the percentage points differences between the status quo and the simulated scenarios partly reflects differences between the unit's first choice (the status quo) and the union's choice, standardizing the levels of generosity at the union level may indeed create disutilities for both the potential contributors and the would be recipients. According to the argument of the thesis, as long as the units have the capacity to accept or reject a change in the institutional design of the EU, such a prospect makes the standardization of the levels of generosity very unlikely.

The implications of our results for the discussion about the EU development are tangential to our interests here. More central to our concerns are their implications for the theoretical issue of the relation between decentralization and inequality. As expected, the micro-simulation analyses show that, a priori, the distributive consequences of decentralization are open, contingent upon a number of factors. But they also show that only those scenarios whose designs are least disruptive of the optimal preferences of a majority (or even all the units) are politically feasible. There is a sharp contrast between what the theory in principle suggests and the fact that only a set of specific designs has a prospect to emerge and consolidate. This fact not only comes to reinforce, even if indirectly, the "endogeneity hypothesis" (H1). It also points out that, according to the model, the driving engine of the two way

relation between decentralization and inequality seems to be a process of reproduction of inequality via the politics of institutional choice. In order to carefully elaborate this idea, and provide a comprehensive account, I turn now to analyze in detail this hidden dimension of the relation between decentralization and inequality.

PART III:

THE HIDDEN DIMENSION: THE STRUCTURE OF INEQUALITY AND THE TERRITORIAL DESIGN OF REDISTRIBUTION.

Introduction

The thrust of the model is that relevant policymakers choose institutions based on their expected payoffs. Such an argument generates implications concerning both the distributive consequences of decentralization and, subsequently, the impact of the structure of inequality on the design of redistributive institutions and policies. To put it with Weingast (2002: 661), "the first level of analysis is clearly antecedent to the second: A choice theoretic approach to institutions requires that individuals have expectations about the effects of institutions". The analysis of the distributive consequences of decentralization developed in Part II of the dissertation reveals the expectations of policymakers as rational. In turn, Part III is devoted to the empirical study of the *hidden* sequence of the relation, namely the impact of the structure of inequality on the territorial design of redistribution. In doing so it aims to clarify the processes by which some combinations of

distributive outcomes and institutional designs are more likely to emerge than others.

From this perspective this part of the dissertation contains two chapters. The first one (Chapter 5) tests to what extent it is true that decentralization is a function of inequality, as predicted by the model. The second one (Chapter 6) deals with a more specific claim, namely that the territorial design of redistribution is a function of the scope of risk sharing between regions. Both chapters have a similar structure in that the test of the claims is carried out through a combination of quantitative and case-study oriented approaches. In what follows, before turning to the chapters themselves, I discuss the reasons underpinning such a strategy.

The analyses included in both chapters are based on a data set that combines time series and cross sectional information for 14 to 16 OECD countries during the period 1980 to 1997. On this basis, a series of tests is performed in ways that address a number of methodological issues to be discussed below. For all the different specifications included in both chapters there is a common underlying goal: to establish the extent to which the relations actually found in the data are consistent with our theoretical expectations. In this sense, these analyses can be taken as a potential basis for claims of generality about the nature of the relations that link, both ways, decentralization to income inequality.

However informative and reliable it may be, what the quantitative analysis actually does is to pool a set of countries over a period within which each of them may suffer specific historical inertias, countries whose institutions evolve according to different *historical timings*. In this context, the selection of observations is imposed by data availability and comparability. Such selection is indeed everything but random, and yet there is the need to assume randomness in order to specify the models. Our information is partial by definition, even if we buy the heroic assumption that every country-period observation is the result of an unobserved stochastic process.

Moreover, the estimates derived from the statistical analysis tap correlations that may or may not be consistent with the expectations generated from the model. However, even if they are consistent with our theoretical expectations, they are unable to fully grasp the complexity involved in any given causal process. A coefficient is, in this sense, nothing but an aggregate summary of the net result of a causal process. Due to the imperfect nature of the data and the limitations of our estimation techniques, it would be quite daring to consider the statistical results the ultimate proof of the specific causal processes that these chapters are concerned about. There are always black boxes in the relations identified, as, inevitably, there is noise around them. For all these reasons, a combination of methodologies is in order. King, Keohane and Verba (1994) are very clear when explaining why small n case studies are not a good basis for general inference, but they are equally clear about their usefulness in a more comprehensive research program such as the one envisioned in the coming chapters. While the quantitative analyses support more general claims, small n case studies provide additional, albeit partial, evidence and, more importantly, shed light on the details of the dynamics of the causal process. In conclusion, they complement each other.

A key issue regarding the claims to be made on small n case studies concerns the criteria adopted to select them. For them to be a relevant part of an empirical test of the implications of any given theoretical model, case studies must fulfil three major conditions. First, the process under observation must take place under a set of conditions that resembles as closely as possible the settings and conditions assumed in the theoretical model. The farther from this condition the specific experiences selected are, the less relevant for the problem of interest will be the conclusions derived from it. Secondly, the cases must entail a puzzle potentially solvable by the theoretical model whose insights are under consideration. Finally, there must be some specific methodological added value in bringing them into the picture to complement the quantitative analysis.

Two small case studies are included in Chapters 5 and 6. In the case of Chapter 5, which is concerned with the extent to which the decentralization of redistribution is a function of inequality, I complement the statistical analysis by taking a closer look at the way in which the German fiscal equalization system (*Länderfinanzausgleich*) fared after the six former communist Länder were brought into the federation. As to Chapter 6, which deals with the extent to which the territorial design of redistribution is a function of the scope of risk sharing between regions, I put forward a comparative analysis of the way Canada and the USA designed their unemployment insurance systems in the context of the Great Depression (1925-1935). Both case studies fulfil the above mentioned conditions. While I shall address both their relation with the setting of the theoretical model and the sense in which they pose a puzzle potentially solvable by the approach herein developed, let me close this section by highlighting their added value from a methodological point of view, a common feature of both experiences for the purposes of this dissertation.

A central claim of the model is that the relation between decentralization and inequality works both ways. This brings endogeneity to the center of the methodological stage. There are several ways to handle this problem (King, Keohane and Verba: 1994). The first and most obvious one is to apply the appropriate statistical techniques, as discussed in the coming section, and see if the expected results hold. The second, complementary, one is to look for cases in which it can be reasonably assumed that there is no problem of endogeneity, which in our case implies looking for cases in which a (sudden) change in the structure of inequality is unrelated to the existing territorial design of redistribution. A situation in which such an exogenous shock takes place will allow us to analyze in detail one of the sequences of the relation net of the feedback processes inherent in endogeneity. Indeed, it is clear to see that the increases in inequality at work in Germany 1989 and North America between 1925 and 1935 can be considered the results of many other social, political and economic factors that

are independent of the existing design of redistribution. In the former case, the incorporation of six new partners was a political decision in the context of the (at the time rather unexpected) collapse of Soviet rule in Eastern Europe. In the latter, as we shall see in more detail below, the changes in the levels and shape of inequality were more related to massive structural economic transformations than to political institutions themselves. Herein lies the main reason to incorporate these two cases into the research strategy of the dissertation: they provide a second way around the challenges posed by endogeneity to the endeavor of isolating and analyzing each of the sequences of the relation.

Moreover, there is yet another reason supporting such a choice. There are two features of the quantitative analysis that make it far from perfect. For a start, they do not capture the role of existing institutional equilibria. As mentioned above, the existing institutions of any given country remain, in their specificities, part of a black box when performing the type of statistical analysis developed in these chapters. However, they are indeed important in that they are likely to filter the way in which, for each particular nation, a change in the structure of inequality is translated into a change in the territorial design of redistribution. In this sense, the benefit of generality inherent in quantitatively oriented comparative analysis comes at the price of an *excessive endogenization* of institutions with regard to the evolution of inequality. This is so much so when the data have an annual time frequency and lags are never higher than order 1 due to the limits imposed by the scarce number of observations. Institutions do not necessarily respond to stimuli within the next year. By implicitly assuming so, our setting may be endogenizing them far too much. The case studies allow us to pay due attention to the existing institutional equilibria and, thus, help overcome the potential problem of excessive endogenization. All these positive features, however, only make sense in the context of the expected impact of inequality on decentralization having been established as an empirical regularity. Therefore, the coming chapters have a similar structure: I first aim at establishing, with the help of quantitative

analysis, the existence of an empirical regularity consistent with the model. Thereafter, I turn to the details of the causal process via the two above mentioned case studies.

**APPENDIX 5.1: INCOME DECOMPOSITION ANALYSIS.
LIS DATABASE. SELECTED OECD COUNTRIES**

AUSTRALIA (1985-1994)

Regional Decomposition of Market and Disposable Income

	1985		1989		1994	
	MLD	THEIL	MLD	THEIL	MLD	THEIL
Market Income						
Total Inequality	0.61550	0.33344	0.63097	0.34179	0.79955	0.38474
Within Regions	0.61241	0.33022	0.62860	0.33945	0.79744	0.38262
%	99.4979	99.0343	99.6243	99.3153	99.7361	99.4489
Between Regions	0.00308	0.00322	0.00237	0.00233	0.00211	0.00212
%	0.5021	0.9657	0.3756	0.6846	0.2638	0.5510
Disposable Income						
Total Inequality	0.16565	0.14308	0.17480	0.15524	0.21953	0.16587
Within Regions	0.16431	0.14169	0.17385	0.15430	0.21862	0.16495
%	99.1910	99.0285	99.4565	99.294	99.5854	99.4553
Between Regions	0.00134	0.00139	0.00095	0.00094	0.00091	0.00092
%	0.8089	0.9715	0.5434	0.7078	0.4145	0.5546

Source: Author's calculation on the LIS data-set.

BELGIUM (1985-1996)

Regional Decomposition of Market and Disposable Income

	1985		1988		1992		1996	
	MLD	THEIL	MLD	THEIL	MLD	THEIL	MLD	THEIL
Market Income								
Total Inequality	0.87982	0.34268	0.91429	0.36289	0.98539	0.39288	0.93021	0.39068
Within Regions	0.87699	0.33990	0.90838	0.35709	0.97867	0.38638	0.92578	0.38633
%	99.6783	98.1887	99.3535	98.4017	99.3180	98.3455	99.5237	98.8865
Between Regions	0.00283	0.00277	0.00592	0.00581	0.00671	0.00649	0.00443	0.00435
%	0.3216	0.8112	0.6464	1.5982	0.6819	1.6544	0.4762	1.1134
Disposable Income								
Total Inequality	0.09450	0.08728	0.10875	0.09855	0.11284	0.08773	0.17368	0.12851
Within Regions	0.09433	0.08711	0.10808	0.09788	0.11183	0.08673	0.17251	0.12734
%	99.8201	99.8052	99.3839	99.3201	99.1049	98.8601	99.3263	99.0895
Between Regions	0.00017	0.00017	0.00067	0.00067	0.00101	0.00100	0.00118	0.00117
%	0.1798	0.1947	0.6160	0.6798	0.8950	1.1398	0.6736	0.9104

Source: Author's calculation on the LIS data-set.

DENMARK (1987-1992)**Regional Decomposition of Market and Income Inequality**

	1987		1992	
	MLD	THEIL	MLD	THEIL
Market Income				
Total Inequality	0.64315	0.30616	0.14664	0.11674
Within Regions	0.63133	0.29581	0.14260	0.11266
(%)	98.1621	96.6194	97.2449	96.5050
Between Regions	0.01002	0.01035	0.00404	0.00408
(%)	1.8378	3.3805	2.7550	3.4949
Disposable Income				
Total Inequality	0.73360	0.34893	0.12920	0.10790
Within Regions	0.72137	0.33606	0.12513	0.10371
(%)	98.3328	96.3115	96.8498	96.1167
Between Regions	0.01224	0.01287	0.00407	0.00419
(%)	1.6671	3.6884	3.1501	3.8833

Source: Author's calculations on the LIS data-set.

FINLAND (1987-1991)**Regional Decomposition of Market and Disposable Income**

	1987		1991	
	MLD	THEIL	MLD	THEIL
Market Income				
Total Inequality	0.27748	0.19628	0.27331	0.19453
Within Regions	0.26721	0.18571	0.26366	0.18459
%	96.2988	94.6148	96.4692	94.8902
Between Regions	0.01028	0.0156	0.00964	0.00994
%	3.7011	5.3851	3.5307	5.1097
Disposable Income				
Total Inequality	0.07690	0.07324	0.07949	0.07391
Within Regions	0.7355	0.06983	0.07612	0.07047
%	95.6436	95.3440	95.7604	95.3456
Between Regions	0.00335	0.00341	0.00338	0.00345
%	4.3563	4.6559	4.2395	4.6543

Source: Author's calculation on the LIS data-set.

FRANCE (1984-1994)**Regional Decomposition of Market and Disposable Income**

	1984		1989		1994	
	MLD	THEIL	MLD	THEIL	MLD	THEIL
Market Income						
Total Inequality	0.9434	0.42590	0.94015	0.44758	0.81110	0.45379
Within Regions	0.92583	0.40867	0.91845	0.42505	0.78849	0.42999
%	98.1375	95.9544	97.6918	94.9662	96.7698	94.7552
Between Regions	0.01651	0.01723	0.02170	0.02253	0.02261	0.02380
%	1.8624	4.0455	2.3081	5.0337	3.2301	5.2447
Disposable Income						
Total Inequality	0.24677	0.16877	0.19856	0.15886	0.14517	0.15447
Within Regions	0.23932	0.16109	0.18903	0.14908	0.13589	0.14480
%	96.9809	95.4494	95.2004	93.8436	93.6074	93.7398
Between Regions	0.00745	0.00769	0.00953	0.00978	0.00928	0.00967
%	3.0190	4.5505	4.7995	6.1563	6.3925	6.2601

Source: Author's calculation on the LIS data-set.

GERMANY (1989-1994)**Regional Decomposition of Market and Disposable Income**

	1989		1994	
	MLD	THEIL	MLD	THEIL
Market Income				
Total Inequality	0.69575	0.34858	0.78695	0.41880
Within Regions	0.69305	0.34590	0.77170	0.40436
%	99.912	99.2311	98.0621	96.5520
Between Regions	0.00270	0.00268	0.01525	0.01443
%	0.0880	0.7688	1.9378	3.4479
Disposable Income				
Total Inequality	0.11090	0.11148	0.13202	0.13489
Within Regions	0.10969	0.11026	0.12617	0.12913
%	98.9089	98.9056	95.5688	95.7298
Between Regions	0.00121	0.00121	0.00585	0.00576
%	1.0910	1.0943	4.4311	4.2701

Source: Author's calculations on the LIS data-set.

NORWAY (1986-1995)**Regional Decomposition Of Market And Disposable Income**

	1986		1991		1995	
	MLD	THEIL	MLD	THEIL	MLD	THEIL
Market Income						
Total Inequality	0.45767	0.23177	0.45493	0.26059	0.54953	0.31240
Within Regions	0.45376	0.22790	0.45192	0.25755	0.54657	0.30946
%	99.1456	98.3302	99.3383	98.8334	99.4613	99.0588
Between Regions	0.00391	0.00388	0.00300	0.00304	0.00296	0.00294
%	0.8543	1.6697	0.6616	1.1665	0.5386	0.9410
Disposable Income						
Total Inequality	0.09629	0.08877	0.10228	0.09610	0.11645	0.11829
Within Regions	0.09584	0.08831	0.10111	0.09492	0.11528	0.11712
%	99.5326	99.4818	98.8560	98.7721	98.9952	99.0109
Between Regions	0.00046	0.00046	0.00117	0.00118	0.00117	0.00117
%	0.4673	0.5181	1.1439	1.2278	1.0047	0.9890

Source: Author's calculation on the LIS data-set.

SPAIN (1980-1990)**Regional Decomposition Of Market And Disposable Income**

	1980		1990	
	MLD	THEIL	MLD	THEIL
Market Income				
Total Inequality	0.64222	0.33564	0.68456	0.34538
Within Regions	0.61498	0.30901	0.66732	0.32831
%	95.7584	92.0659	97.4815	95.0576
Between Regions	0.02724	0.02663	0.01724	0.01707
%	4.2415	7.9340	2.5184	4.9423
Disposable Income				
Total Inequality	0.18931	0.18567	0.16173	0.16523
Within Regions	0.16347	0.16564	0.15645	0.15464
%	86.3504	89.2120	96.7352	93.5907
Between Regions	0.02044	0.02003	0.01068	0.01056
%	13.6495	10.7879	3.2647	6.4092

Source: Author's calculation on the LIS data-set.

ITALY (1991-1995)

Regional Decomposition Of Market And Disposable Income

	1991		1995	
	MLD	THEIL	MLD	THEIL
Market Income				
Total Inequality	0.60738	0.31027	0.76225	0.40934
Within Regions	0.58924	0.29283	0.73721	0.38546
%	97.0134	94.3790	96.7149	94.1662
Between Regions	0.01814	0.01744	0.02504	0.02388
%	2.9865	5.6209	3.2850	5.8337
Disposable Income				
Total Inequality	0.15239	0.14220	0.23987	0.21060
Within Regions	0.13458	0.12509	0.21516	0.18698
%	88.3128	87.9676	89.6985	88.7844
Between Regions	0.01781	0.01711	0.02471	0.02362
%	11.6871	12.0323	10.3014	11.2100

Source: Author's calculation on the LIS data-set.

SWEDEN (1981-1995)

Regional Decomposition Of Market And Disposable Income

	1981		1992		1995	
	MLD	THEIL	MLD	THEIL	MLD	THEIL
Market Income:						
Total Inequality	0.60615	0.31019	0.75988	0.39345	0.70615	0.39190
Within Regions	0.60342	0.30742	0.75338	0.39678	0.70099	0.38668
%	99.5496	99.1069	99.1315	98.3047	99.2692	98.66
Between Regions	0.00273	0.00277	0.00650	0.00667	0.00515	0.00522
%	0.4503	0.8930	0.8684	1.6952	0.7307	1.3319
Disposable Income:						
Total Inequality	0.08268	0.06767	0.10894	0.09295	0.11159	0.09311
Within Regions	0.08153	0.06650	0.10679	0.09077	0.11011	0.09162
%	98.6090	98.2710	98.02	97.6546	98.6737	98.3997
Between Regions	0.00116	0.00117	0.00215	0.00218	0.00148	0.00149
%	1.3909	1.7289	1.8	2.3453	1.3262	1.6002

Source: Author's calculations on the LIS data-set.

UNITED KINGDOM (1969-1995)**Regional Decomposition Of Market And Disposable Income**

	1969		1986		1991		1995	
	MLD	THEIL	MLD	THEIL	MLD	THEIL	MLD	THEIL
Market Income								
Total Inequality	0.40016	0.25411	0.88416	0.42293	0.83104	0.44020	0.95473	0.47780
Within Regions	0.39284	0.24682	0.87193	0.41035	0.81515	0.42415	0.94139	0.46451
(%)	98.1707	97.1311	98.6056	97.0255	98.0879	96.3539	98.6027	97.2185
Between Regions	0.00732	0.00728	0.01233	0.01258	0.01589	0.01605	0.01335	0.01329
(%)	1.8292	2.8688	1.3943	2.9744	1.9120	3.6460	1.3972	2.7814
Disposable Income								
Total Inequality	0.12556	0.13334	0.19655	0.15750	0.20866	0.21184	0.22905	0.21199
Within Regions	0.12131	0.12908	0.19183	0.15271	0.20018	0.20325	0.22297	0.20588
(%)	96.6151	96.8051	97.5985	96.9587	95.9359	95.9450	97.3455	97.1177
Between Regions	0.00424	0.00426	0.00472	0.00480	0.00848	0.00859	0.00608	0.00612
(%)	3.3848	3.1948	2.4014	3.0412	4.0640	4.0550	2.6544	2.8822

Source: Author's calculations on the LIS data-set.

USA (1987-1997)**Regional Decomposition Of Market And Disposable Income**

	1987		1991		1994		1997	
	MLD	THEIL	MLD	THEIL	MLD	THEIL	MLD	THEIL
Market Income:								
Total Inequality	0.58347	0.33794	0.58900	0.34465	0.65244	0.39541	0.64251	0.43185
Within Regions	0.57249	0.32835	0.58058	0.33632	0.64600	0.38893	0.63565	0.42507
(%)	98.1181	97.1626	98.5704	97.5830	99.0129	98.3611	98.9323	98.4300
Between Regions	0.00998	0.00958	0.00842	0.00833	0.00644	0.00648	0.00686	0.00678
(%)	1.8818	2.8377	1.4295	2.4169	0.9870	1.6388	1.0676	1.5699
Disposable Income:								
Total Inequality	0.21583	0.18773	0.22442	0.18821	0.25112	0.21683	0.27328	0.25807
Within Regions	0.21980	0.18185	0.21886	0.18270	0.24727	0.21296	0.26912	0.25394
(%)	97.3298	96.8678	97.5225	97.0724	98.4668	98.2151	98.4777	98.3996
Between Regions	0.00602	0.00587	0.00556	0.00551	0.00385	0.00387	0.00416	0.00413
(%)	2.6701	3.1321	2.4774	2.9275	1.5331	1.7848	1.5222	1.6003

Source: Author's calculations on the LIS data-set.

CANADA (1971-1994)
Regional Decomposition Of Market And Disposable Income

	1971		1975		1987		1991		1994	
	MLD	THEIL	MLD	THEIL	MLD	THEIL	MLD	THEIL	MLD	THEIL
Market Income										
Total Inequality	0.55039	0.30015	0.47526	0.26329	0.46168	0.26930	0.52774	0.30975	0.58946	0.32500
Within Regions	0.53673	0.28739	0.46622	0.25476	0.45320	0.26129	0.51143	0.29015	0.57805	0.31224
%	97.5181	95.7487	98.0978	96.7602	98.1632	97.0256	96.9094	93.6723	98.0643	96.0738
Between Regions	0.01366	0.01276	0.00904	0.00853	0.00848	0.00801	0.01631	0.01960	0.01141	0.01276
%	2.4818	4.2512	1.9021	3.2397	1.8367	2.9744	3.0905	6.3276	1.9356	3.9261 *
Disposable Income										
Total Inequality	0.24484	0.18290	0.18435	0.14582	0.14633	0.13223	0.15039	0.13634	0.14771	0.13473
Within Regions	0.23634	0.17483	0.17935	0.14099	0.14212	0.12812	0.14226	0.12712	0.14156	0.12816
%	96.5283	95.5877	97.2877	96.6876	97.1229	96.8917	94.5940	93.2228	95.8364	95.1235
Between Regions	0.00850	0.00807	0.00500	0.00483	0.00422	0.00411	0.00812	0.00922	0.00615	0.00657
%	3.4716	4.4122	2.7122	3.3124	2.8770	3.1082	5.4059	6.7772	4.1635	4.8764

Source: Author's calculation on the LIS data-set.

**APPENDIX 5.2.A: THE STRUCTURE OF INEQUALITY
AND THE TERRITORIAL DESIGN OF
REDISTRIBUTION: TOBIT MODELS**

	Model A	Model B	Model C
Income Inequality	0.428*** (0.0973)	0.561*** (0.057)	0.0990*** (0.0027)
Unemployment Regional Disparities	0.0018 (0.207)	0.0074 (0.0178)	-----
Between Groups Share of the Theil Index.	-----	-----	-----
Ethnic Fractionalization	-----	0.235*** (0.005)	0.099*** (0.028)
Openness	0.0074*** (0.0014)	0.0054*** (0.0012)	0.00066 (0.00086)
Log-Likelihood	1198.3	1219.4	2011.4

Model A.- TOBIT FIXED EFFECTS. Ethnic Fractionalization is not included because it does not vary over time. The Structure of Inequality is measured by the overall *Gini Coefficient* and the *Coefficient of Variation* in Regional Unemployment Rates.

Model B.- TOBIT RANDOM EFFECTS. The Structure of Inequality is measured by the overall *Gini Coefficient* and the *Coefficient of Variation* in Regional Unemployment Rates.

Model C.- TOBIT RANDOM EFFECTS. The Territorial Structure of Inequality is measured by the *Between Groups Share of the Theil Index*.

APPENDIX 5.2.B:
SELECTION OF MODELS CONTROLLING FOR
GROSS DOMESTIC PRODUCT.

The Structure of Inequality and the Institutional Design of Redistribution: Fixed and Random Effects estimations.

	WELFARE DECENTRALIZATION (1980-1997)		
	Model A	Model B	Model C
Income Inequality	0.241***	-----	-----
Unemployment Regional Disparities	0.019**	-----	-----
Between Group Share of the Theil Index	-----	0.042***	0.035***
Ethnic Fractionalization	-----	0.0719**	0.192***
GDP	-9.78e-09	-2.88e-08	-9.33e-09
Openness	0.0028**	0.0012	0.003**
R-Squared (N)	0.995 (129)	0.527 (121)	0.552 (121)

Model A: Fixed Effects. Panel Corrected Standard Errors.

Model B: Random Effects Two-Stage least squares instrumental variables estimation. Details about the instruments are provided in the description of Tables 5.4 and 5.5.

Model C: Simultaneous Equations Models. Seemingly Unrelated Regressions. Random Effects.

**APPENDIX 5.2.C:
ONE WAY FIXED AND RANDOM EFFECTS
ESTIMATIONS ASSUMING AN AR1 PROCESS
IN THE ERROR TERM.**

	WELFARE DECENTRALIZATION (1980-1997)			
	FIXED EFFECTS		RANDOM EFFECTS	
	FE.1	FE.2	RE.1	RE.2
Income Inequality	0.31715 (0.0311)	0.5042 (0.0431)	0.11589 (0.0508)	0.11812 (0.0614)
Unemployment Regional Disparities	0.02903 (0.0083)	0.0212 (0.0126)	0.01267 (0.0098)	0.000701 (0.0111)
Ethnic Fractionalization	-----	-----	0.26664 (0.0499)	0.35921 (0.1041)
Openness	0.00466 (0.0006)	0.00445 (0.00091)	0.00245 (0.00081)	0.00198 (0.00080)
R-Squared (N)	0.9828 (143)	0.9785 (158)	0.5689 (143)	0.3768 (158)

For both fixed and random effects estimations version 1 takes as dependent variable WELFDEC (share of regional social expenditure over total social expenditure) while version 2 estimates the determinants of REGTOTRE (share of regional revenues over total).

CHAPTER 6

DECENTRALIZATION AND REDISTRIBUTION: DOES THE TERRITORIAL DESIGN OF REDISTRIBUTION DEPEND UPON THE SCOPE OF RISK SHARING?

The previous chapter has made the empirical case that the institutional design of redistribution is endogenous to inequality. Herein I try to take one step forward in the analysis of how the mechanisms identified in the model shape the relation between decentralization and redistribution. More specifically, the main goal of this chapter is to provide empirical evidence to test whether our understanding of the main mechanism linking decentralization and inequality, namely the relation between the scope of risk sharing between regions and the territorial design of redistribution policies, is consistent with the facts.

The chapter starts by elaborating in more detail the implications drawn from the model as to the impact of the scope of risk sharing on the territorial design of redistribution (H4 and H5). Meanwhile, I also present the rationale underlying the methodological strategy adopted to test these implications. Thereafter, I discuss the econometric specification, present the variables included in the different models and interpret the

statistical results, including a careful consideration of the limits of the conclusions to be grounded on them (6.2). Subsequently, section 6.3 develops a small case study of the how the scope of risk sharing affects the territorial design of redistribution by comparing the ways Canada and the USA designed their Unemployment Insurance policies in response to the sudden increase of inequality during the Great Depression. The case study helps to show the relation between risk sharing and the design of redistribution and, more importantly, illustrates the importance of the dynamic component of the model, namely the role of selective inter-regional mobility. The logic underlying this exercise, despite having been outlined in previous chapters, is expanded below. Finally section 6.4 concludes.

6.1.- Implications from the Argument and Rationale for the Analysis

The bottom line of the model developed in the previous chapter is that a major determinant (albeit not the only one!) of the territorial design of redistribution is the scope of risk sharing between regions. The model showed how the incentives underlying any given design are a function of the territorial distribution of different types of risks. These are in turn driven by the structure of the dependent population, the profile of the different regions in terms of the incidence of individual specific risks and the probability of region-specific risks being increased by external shocks. These three factors define the preferences about the territorial design of redistribution, i.e., establish a link between the structure of inequality and the allocation of the capacity to perform redistribution across levels of government.

From this perspective it is straightforward to see that different policies cope with risks that vary in the way they are territorially distributed. In this sense pensions provide an example of policies coping with risks that belong to any individual in that they are age related. Thus such risk can be considered territorially uniform,

even if the form and the time at which these risks become real experiences may well vary across nations and regions. At the other end of the spectrum, social assistance policies deal with dependent populations and risks that are local in nature, contingent upon very specific factors that make the need for such policies vary across regions, urban areas, cities and even neighborhoods (Eardley et al. 1996; OECD 1998). Between the two lie the branches of the welfare state devoted to cope with labor market related risks, namely the unemployment benefits, the income tax and minimum wages regulations. Under these circumstances the dependent populations and the nature of the risks to be handled are likely to respond to region-specific factors of the economic structure²⁶.

This variance sets the floor for testing the implications of the model regarding the relation between decentralization and redistribution. If the territorial design of redistribution is a function of the scope of risk sharing between regions, and welfare policies cope with risks that vary in their territorial distribution, then, *at the aggregate level it should be observed that the impact of decentralization varies by welfare policy, depending upon the scope of risk sharing that characterizes each policy. For those policies covering universal risks (pensions), we should observe that decentralization has no effect when comparing all OECD nations. The opposite should be the case the more the populations and risks covered by the program are targeted and regionally specific.*²⁷

The test of the idea that the territorial design of redistribution is a function of the scope of risk sharing between regions (H4) is carried out in two steps. First, I develop a quantitative analysis of

²⁶ The persistence over time of divergent regional profiles of production as a source of regional income and labor market disparities is well documented by economic geographers. For evidence on this point for the USA see Kim(1999:1-32). For evidence for the EU see Dunford (1993: 727-743; 1996: 339-357) and Magrini (1999:257-281).

²⁷ From now on I shall occasionally refer to this expectation as "*the policy differential hypothesis*".

the relation between decentralization and different redistributive policies in OECD countries during the period 1980-1997.

Theoretically, the specific effects of decentralization on different redistributive policy realms cannot be established a priori since they are the net result, according to the model, of the combination of different regional preferences, which are in turn dependent upon the regional specific structure of inequality. Besides, this very combination itself is subject to country-specific institutional contingencies that cannot be fully controlled for in a deductive model. Hence, at this stage, the only clear prediction that can be tested is whether or not decentralization is only relevant for policies coping with risks that are bounded to regional/local specific characteristics. If decentralization matters only for those policies coping with territorially bounded risks (which is to say if decentralization does no matter for pensions but matters for the rest), it can be said that H2 receives empirical support.

Nevertheless, attempts to be more precise can be made. There is a good deal of both cumulated and potential knowledge about the structure of inequality in OECD countries, as well as about their specific institutional conditions, that can be exploited in order to specify the expected direction of the impact of decentralization in those policy realms where such an impact is expected to actually take place. I shall refer to two policy areas: (i) Labor Market related welfare state programs and (ii) Social Assistance Policies.

i) OECD labor markets are characterized by a good deal of economic specialization. Sectors and productive activities are not evenly distributed across regions. These are often heavily specialized. Inevitably under these circumstances there are cases of regional disparities in terms of income per capita, unemployment incidence and income inequality to emerge. Table 6.1 illustrates this rather obvious point. In other words the structure of inequality differs and hence, according to our model, so do the preferences for redistribution. Table 6.1 and Tables

6.2.1 to 6.2.4 present indicators of the existing structure of inequality in a small selection of OECD countries.

Tables 6.2.1 to 6.2.4 in turn provide more solid ground for the expectation that decentralization is likely to reduce the overall levels of welfare effort in labor market related programs. Following the logic that underpins the theoretical model developed in Chapter 2, Tables 6.2.1 to 6.2.4 carry out the following exercise. On the previously calculated measurement of pretax /transfers market income inequality for the working age population, the median to mean ratio for the whole nation (centralization) is calculated; on a second step, the calculation is repeated for each region and the unweighted average (Avregrat) of the ratio for all regions is taken. Recall from Chapter 2 that, according to the simplest median voter of redistribution, as the median to mean ratio goes to 1, the preference for redistribution declines and so too, it is expected, should levels of welfare effort. And viceversa, as the ratio goes to 0, the larger the distance between the income of the median voter and the mean income of the society, which should lead to higher levels of welfare effort. From this perspective, if the AVREGRAT is lower than the median to mean ratio as calculated for the entire nation, decentralization should lead to higher levels of welfare effort. Since we are looking only at the working age population, this should be reflected in a positive association between decentralization and welfare effort in labor market related programs. On the contrary, if the AVREGRAT is closer to 1 than the median to mean ratio as calculated for the entire nation, decentralization should lead to lower levels of welfare effort. These tables reinforce nicely the above mentioned idea that the distributive consequences of decentralization depend upon the previous structure of inequality.

Under these circumstances the following expectation can be derived. So long as the number of regions with a lower ratio between the median and the average income with respect to the national ratio is less than the number of regions in which the ratio is larger than the national one, the overall net effect to be expected

Table 6.1. Coefficient of Variation in Regional Unemployment Rates. Selected OECD countries (1980-1997)

	Australia	Austria	Belgium	Canada	Denmark	UK	Germany	USA	Spain	Italy
80	0.19			0.39	0.25		0.28	0.30		
81	0.16			0.39	0.23		0.24	0.33		
82	0.14			0.28	0.22		0.21	0.30		
83	0.16		0.20	0.24	0.20	0.34	0.28	0.33	0.25	0.41
84	0.18		0.18	0.29	0.21	0.36	0.33	0.37	0.32	0.40
85	0.19		0.26	0.32	0.22	0.35	0.35	0.37	0.28	0.45
86	0.19		0.37	0.32	0.24	0.37	0.39	0.38	0.29	0.52
87	0.18		0.35	0.33	0.25	0.40	0.41	0.39	0.33	0.56
88	0.19		0.38	0.32	0.23	0.48	0.40	0.40	0.41	0.65
89	0.21		0.45	0.34	0.21	0.57	0.42	0.34	0.47	0.73
90	0.15		0.44	0.36	0.20	0.54	0.44	0.29	0.46	0.75
91	0.14		0.42	0.31	0.19	0.36	0.46	0.30	0.46	0.75
92	0.15		0.43	0.32	0.19	0.27	0.52	0.30	0.38	0.62
93	0.18	0.29	0.39	0.31	0.17	0.23	0.39	0.32	0.31	0.60
94	0.16	0.31	0.38	0.36	0.19	0.26	0.31	0.31	0.27	0.62
95	0.14	0.34	0.44	0.35	0.23	0.27	0.31	0.32	0.32	0.74
96	0.15	0.30	0.44	0.37	0.23	0.29	0.32	0.32	0.32	0.73
97	0.20	0.30	0.47	0.41	0.24	0.30	0.32	0.36	0.33	0.73

Sources: See the Data Appendix for details.

from decentralization on labor market related programs is negative. Tables 6.2.1 to 6.2.4 appear to reinforce this expectation. The analysis of the structure of inequality in Germany, Canada and the USA points to this direction, with Belgium being an outlier in which decentralization would be, if the median voter model is to be bought, distributively neutral. Given the median/mean ratio in terms of pretax market income for the population between 16-59 found for the different regions in the sample of federal OECD countries considered in Tables 6.2.1 to 6.2.4, decentralization is expected to have an overall negative impact on the labor market related welfare state effort²⁸.

ii) Regarding Social assistance policies the effects of decentralization are expected to work in the opposite direction. As mentioned above, social assistance policies cope with risks and dependent populations that are local by nature. From their very origin they are designed to tackle problems characterized by very fragmented and diverse informational issues. Indeed, even in the most egalitarian societies and welfare states local authorities play a very important role in the development of these programs (footnote comparing Sweden/Norway/Finland and Denmark). Allegedly, a decentralized allocation of political authority is more able to match policy choices to the diverging tastes, preferences and needs of its regional sub-populations. In other words, it is able to handle better the important informational asymmetries that characterize many of the low income maintenance policies and, therefore, allows for a better targeting of benefits (OECD 1998). In this sense, social assistance policies, due to their flexible and adaptable character, seem to be a suitable tool for the development of redistribution in decentralized scenarios. Thus it is expectable that decentralized nations, in relative terms, allocate a larger share of their resources to welfare efforts channeled through these types of programs than centralized ones.

²⁸ Hence for this particular set of countries and policies, the argument put forward by Persson and Tabellini (1994: 765-773; 1996a :979-1009), according to which decentralization reduces the equilibrium level of redistribution, is expected to hold.

Table 6.2.1. *The Structure of Inequality in Selected OECD Countries: Belgium 1997. Median to Average Incomes ratio. Household Market Income per equivalent adult. Working Age Population. The AVREGRAT is the unweighted average of the regional ratios*

	MEDIAN	MEAN	RATIO
BELGIUM	1334578.00	1423376.00	0.938
Flanders	1439519.00	1508410.00	0.954
Wallonia	1162285.00	1253842.00	0.927
Brussels	1283747.00	1462439.00	0.878
AVREGRAT			0.920

Table 6.2.2. *The Structure of Inequality in Selected OECD Countries: Canada 1994. Median to Average Incomes ratio. Household Market Income per equivalent adult. Working Age Population. . The AVREGRAT is the unweighted average of the regional ratios*

	MEDIAN	MEAN	RATIO
CANADA	40652.00	49812.75	0.816
NF	28518.44	33945.31	0.840
PEI	31230.70	36686.43	0.851
NS	32443.15	36899.48	0.879
NB	34754.49	39107.17	0.889
QBC	35998.35	39722.51	0.906
ONT	46385.71	50387.36	0.921
MANIT	41365.25	44572.41	0.928
SASKT	37400.00	41738.77	0.896
ALBER	43979.00	49616.42	0.886
BC	48109.71	51910.94	0.927
AVREGRAT			0.892

Table 6.2.3. *The Structure of Inequality in Selected OECD Countries: Germany 1994. Median to Average Incomes ratio. Household Market Income per equivalent adult. Working Age Population. . The AVREGRAT is the unweighted average of the regional ratios*

	MEDIAN	MEAN	RATIO
GERMANY	61838.75	67555.95	0.915
BERLINW	59160.00	63771.88	0.928
SCHL	61563.18	68722.21	0.896
HAMB	79900.00	77499.26	1.031
LOWE	64184.45	70612.55	0.909
BREM	53092.31	60891.44	0.872
NRW	63488.93	72593.38	0.875
HESSE	68014.78	81164.04	0.838
RHEINP	65427.50	65017.94	1.006
BADENW	66300.00	70463.70	0.941
BAVARIA	71336.25	76776.92	0.929
BERLINE	63300.00	66460.56	0.952
MECK-POM	48538.00	49496.41	0.981
BRANDEN	53085.83	59409.34	0.894
SAXO-AN	53221.90	57920.52	0.919
THUERINGEN	49406.25	49450.14	0.999
SAXONY	49719.87	51725.06	0.961
AVREGRAT			0.933

To sum up, for the purposes of the quantitative analysis, the "policy differential hypothesis" (H4) can be decomposed into three testable propositions:

- 1) Decentralization is expected NOT to bear any relation to the levels of welfare effort on pensions in OECD countries.
- 2) Given the status quo in terms of the structure of inequality (Tables 6.2.1 to 6.2.4), decentralization is expected to have a negative impact on the levels of welfare effort on labor market related welfare state programs, i.e., income tax, unemployment benefits (also operationalized as

unemployment replacement rates) and minimum wages regulations.

3) Finally, decentralization is expected to have a positive impact on the share of GDP OECD nations devote to low income/ Social assistance programs.

The quantitative study of the relation between the scope of risk sharing and the design of redistribution is complemented by a case study of the way Canada and the USA design their systems of income protection for the unemployed in the broad context of the Great Depression (1920s-1940s). The model does not only predict differences across policies. If the major linking mechanism between the territorial structure of inequality and the design of redistribution is the scope of risk sharing between regions, i.e., if what matters are the horizontal differences across regions in terms of economic specialization, dependent population and regional specific risks, then it is also reasonable to expect differences across countries and within policies. If the same risk, say unemployment, happens to be distributed differently across the regions of two countries, then, according the model, there should also be differences in the territorial design of the appropriate policy instrument.

The case study allows us to analyze in closer detail the specific role played by each of the mechanisms identified in the model. In this sense, by facilitating the observation of two experiences over time, the case study offers the opportunity to test the extent to which the differences between the two can be accounted for, event if only partially, by the differences in their patterns of inter-regional mobility. This way a direct contrast of H5 can be carried out, i.e., a direct contrast of the claim that the larger the patterns of inter-regional mobility, the larger the scope of risk sharing and, eventually, the more likely for centralization to become the chosen design.

As briefly outlined in the introduction to part II, the selection of the case to study has depended upon the satisfaction of a number of conditions. First of all, in order to test the argument, a

Table 6.2.4. The Structure of Inequality in Selected OECD Countries: USA 1997. Median to Average Incomes ratio. Household Market Income per equivalent adult. Working Age Population. . The AVREGRAT is the unweighted average of the regional ratios

	MEDIAN	MEAN	RATIO
USA	41726.00	53716.00	0.770
Maine	36292.85	46332.04	0.783
new hamp	46961.11	59985.74	0.783
Vermont	40613.00	47307.27	0.858
Massatch	51003.48	64750.19	0.788
rhode isl	48571.43	63424.92	0.766
Connect	57061.71	63522.35	0.898
new york	39296.15	54814.11	0.717
new jers	55367.30	68707.53	0.806
Pennsylv	45873.55	57048.03	0.804
Ohio	45920.86	55791.85	0.823
Indiana	44200.00	50465.96	0.876
Illinois	48664.07	60886.44	0.799
Michigan	47617.00	55088.87	0.864
Wisconsin	47909.40	56897.20	0.842
Minnesot	51088.82	57960.40	0.881
Iowa	40759.26	50736.17	0.803
Missouri	42755.00	49888.77	0.857
north dak	35543.60	43325.39	0.820
south dak	37400.00	46997.04	0.796
Nebraska	42092.85	49846.88	0.844
Kansas	41310.00	54072.36	0.764
Delaware	48002.00	66016.06	0.727
Maryland	52500.00	65233.30	0.805
Dc	43129.00	65123.31	0.662
Virginia	49719.77	64078.55	0.776
West vir	32354.40	41476.47	0.780
north ca	42027.78	54775.15	0.767
south ca	39275.10	48171.76	0.815
Georgia	41988.77	51459.26	0.816
Florida	40800.00	52080.41	0.783
Kentucky	39342.86	50499.23	0.779
Tennesse	35119.29	46104.32	0.762
Alabama	38802.00	48780.31	0.795
Mississippi	32300.00	41080.00	0.786

Arkansas	28462.00	35895.23	0.793
Louisiana	39950.00	51743.21	0.772
Oklahoma	35981.71	47198.53	0.762
Texas	35860.71	49252.16	0.728
Montana	32489.52	40904.09	0.794
Idaho	36749.62	44410.89	0.827
Wyoming	35000.00	43840.70	0.798
Colorado	47801.00	60995.76	0.784
New Mexico	30702.34	39938.91	0.769
Arizona	32556.87	48835.09	0.667
Utah	41403.00	53169.23	0.779
Nevada	44414.13	57485.75	0.773
Washington	49422.86	60730.07	0.814
Oregon	41686.00	55910.48	0.746
California	38832.25	53968.49	0.720
Alaska	48555.18	61319.80	0.792
Hawaii	40704.07	52268.31	0.779
AVREGAT			0.791

case where the design of the policies is actually expected to change is required. In addition, the selection must be the result of a theoretically grounded hypothesis. Secondly, the setting must resemble as closely as possible the assumptions adopted to construct the model. The Canadian and American responses to the increase in inequality experienced in the Great Depression fulfil these two conditions. And this is so for three reasons.

First of all, both countries experienced during the 1920s and 1930s a sharp worsening in terms of the social conditions of large shares of their populations. That forced them to redefine, if not invent, their systems of income protection for the skyrocketing number of unemployed people. The Great Depression highlights a shock, an increase in inequality that demands a response from their political economies. For that matter the first condition mentioned above can be taken as fulfilled. Both countries also share a number of other features that allows for the case study to provide grounds for some inferences of a more general nature. These regard not only a number of similarities in terms of

geographical, economic and labor market aspects, but also the structure of their political institutions. Among these their federal condition stands out, which as we shall see rules out a purely institutionalist explanation. In both countries, the status quo is one in which regions have a say in the political process of redistribution. And even more important for the purposes of the analysis, in both cases regions were in charge of the preliminary income protection systems for the unemployed before the shock actually took place. In this sense the conditions of departure resemble the initial conditions imposed for the development of our theoretical model and thus set the floor for an in-depth test of some of its major implications. The final outcomes in terms of the territorial design of redistribution do indeed differ: while Canadian provinces agreed to amend the Constitution and transfer the full responsibility of the program to the Federal Government in the late 1930s and early 1940s, in the event of a similar increase of inequality, American states refused to do so and imposed their own criteria during the elaboration of the 1935 Social Security Act. The goal of the case study is to show that the origins of these differences lie in a political process driven by the fact that the two countries had fairly different profiles in terms of the distances among their respective regions in terms of risk sharing and preferences regarding the levels and design of an income protection program for the unemployed.

Via this comparison, I shall be able to analyze in closer detail the driving mechanism by which the territorial structure of inequality shapes the territorial design of redistribution, which is to say the dynamics of the relation between inequality, decentralization and redistribution. And I shall be able to do so without being concerned about endogeneity: as argued above, it seems reasonable to assume that the shock posed by the Great Depression was fairly independent of the existing territorial design of redistribution. Secondly, this is so much the case because, as far as unemployment insurance in USA and CANADA is concerned, I am analyzing the founding moments of the policies, a feature that matches even further the case study to the initial assumptions of

the model. By looking at the early moments of the policy the impact of inequality on the process is not affected by potential feedback effects at work. For all these reasons the case study not only provides an opportunity to test H5, but also a necessary back up to the quantitative test of H4.

6.2.- The scope of risk sharing and the design of redistribution: quantitative evidence

The next three sections develop a quantitative test of the *policy differential hypothesis (H4)*. More specifically, this section discusses both the specification of the model as well as the rationale underpinning the selection of the variables included in the models.

6.2.1.- Econometric Specification

As in the previous chapter, the analysis is performed on the basis of pooled time series data for 15 OECD countries during 1980-1997. The time periods as well as the cross-sectional units included are merely a function of the limits encountered in the process of constructing/collecting both the dependent and the independent variables. The model has the following form:

$$Y_{it} = \alpha + \beta_1 X_{it} + \beta_{2...n} \gamma_{it} + \varepsilon(\text{pc}) ,$$

where α represents the constant, X_{it} represents the independent variable of interest, in this case decentralization, and γ_{it} depicts the control variables. $\varepsilon(\text{pc})$ depicts panel corrected standard errors.

There are three features of this specification on which it is worthwhile to expand a little further: (1) first, why are country dummies excluded from the specification? (2) Secondly, why do we depart from a standard random effects model and do panel

corrected standard errors? And (3), finally, how has the possibility of having serial correlation in the error term been dealt with?

The exclusion of country dummies makes the model closer to a random effects specification. Very often comparative political economists do not follow this approach and routinely incorporate country dummies in their specifications. However, as discussed previously, this is not necessarily a guarantee for accuracy. If the processes we are after concern changes over time (a situation for which it is required that the structure of the variance (and/or the relations of interest) is dominated by the time component), then inserting country dummies adds relevant controls for those country-specific features that may be disturbing the medium/long term behavior of the variables of interest. Yet this is not always the case.

The opposite scenario is also feasible: the structure of the variance may be dominated by the cross-sectional component. This being the case, the introduction of country dummies, while boosting up the goodness of the fit (R-squared and similars), takes away most of the variation to be accounted for by the models. In so doing it does take down (or even away) the effects of the variables of interest and violates the ultimate purpose of a *variable oriented* approach in comparative politics: to transform countries into variables (Przeworski and Teune: 1970). Since the relations of interest in this chapter resemble the *second scenario*, country dummies are excluded from the specification.

Despite this feature, the models estimated are not the result of a pure random-effects estimation. And this is so because it seems reasonable to assume that in the typical pool of data from OECD countries there exists *panel heterokedasticity*, which is to say that the errors for one or more panel units are related to the errors of at least some of the other units (Beck and Katz: 1995: 636-637). Following these author's solution to correct for these problems, the models are estimated using OLS with panel corrected standard errors.

A second potential violation of the assumption of homoscedasticity in the error term lies in the extent to which there may be a problem of *serial correlation* within panels, which is to say the error for one unit is related to the error of that same unit in a previous time period. After performing the standard tests on some of the models (Breusch and Godfrey, Durbin-Watson), the results were not conclusive in either direction. Hence I have decided to estimate the models imposing all possible assumptions about serial correlation in the error term. These are three: independence, i.e., absence of serial correlation, serial correlation of order one common across panels and, finally, serial correlation of a similar order but specific to each panel unit. The results of all these estimations are included in Appendix 6.1. Generally, they are not sensitive to the underlying assumption regarding serial correlation. Our conclusions then can be said to be consistent across the different specifications. Let me turn now to present and justify both the dependent and the control variables included in the model.

6.2.2.- Measurement Issues: dependent, control and independent variables

In order to test the policy differential hypothesis, I have taken as *dependent variables* for the quantitative analyses the following variables:

OVERALL SOCIAL SPENDING (included in order to compare the results between an aggregate and a disaggregated of the impact of decentralization on welfare redistributive policies), PENSIONS, UNEMPLOYMENT BENEFITS, UNEMPLOYMENT REPLACEMENT RATES, (LABOR) INCOME TAXATION, LOW INCOME (social assistance) and, finally,

CAPITAL TAXATION²⁹. These variables include all the relevant dimensions of the fiscal redistributive activity of OECD countries.

The assessment of the policy differential hypothesis consists precisely in establishing whether or not the impact of decentralization on these different policy domains reveals the expected differences. Obviously, the chief independent variable of interest is, for that matter, the level of decentralization of redistribution, which for the purposes of this chapter is operationalized as the regional share in total social expenditure. For the impact of decentralization to be comparable across estimations these must incorporate a common set of controls. The limited number of country/time periods available again invites us to be as restrictive as possible in regards to the number of controls included. In what remains of this section I define and provide a brief justification of those finally incorporated into the test of the policy differential hypothesis.

WELFARE DEPENDENCY: This variable is meant to control for those socio-demographic and structural economic transformations that, if in place, imply an increase in the demand for welfare effort. Hence the expected relation is positive. It is measured via two indicators, depending upon the specific program being analyzed. In the case of pensions dependency is measured by the old age dependency ratio. Alternatively, in those models dealing with labor market related policies, welfare dependency is measured simply via the unemployment rate.

GOVERNMENT IDEOLOGY: As a result of several decades of comparative welfare state research (Huber and Stephens: 2001), a large body of evidence shows that partisan effects may lead to governments to deviate from the preferences of the median voter (Iversen 2001: 57). The specialized literature (Castles and Mair 1984: 73-88; Castles 1982: 21-97; Esping-Andersen 1990)

²⁹ Details about the sources and construction of all the variables used in this chapter are given in the Data Appendix.

suggests that the largest divide in relation to welfare expenditures is the one that separates right wing conservative from center and left wing parties. Because of the way the variable is measured (see Data Appendix), the expected relation is therefore a negative one. The larger the share of conservative portfolios, the lower the levels of welfare effort.

TURNOUT: A large body of research (see for a summary Iversen 2001: 55-58) shows that higher levels of turnout shift the position of the median voter to the left (Meltzer and Richard 1981: 914-927; Lijphart 1997:1-14), thus leading to an increase in the levels of welfare effort. This is so mainly due to the fact that abstention is unevenly distributed and indeed poorer and less educated people tend to vote less relative to wealthier, highly educated people. If the trend is reversed and some of these people do actually vote, the expected outcome is an increase in the levels of welfare effort.

MARKET INCOME INEQUALITY: As recalled in the theoretical chapter, the conventional median voter model establishes that the ratio between the income of the median voter and the average level of redistribution determines the preferred level of redistribution. A mean preserving increase in inequality thus leads to higher levels of redistribution. Wallerstein and Moene (2001:859-875) have argued that this is the case only if we do not consider insurance as a motive underlying the welfare state. Once the insurance motive is incorporated, for levels of Relative Risk Aversion > 1 , these authors find that the relation between pre-tax transfers inequality and welfare effort is actually reversed. And indeed these same authors have more recently shown that for those programs in which the insurance motive is likely to be at work, higher levels of wage inequality are negatively associated with the levels of welfare effort. Regardless of what theory is actually bought, the need to control for pre-tax inequality as a determinant of welfare effort is well grounded. If the underlying process resembles more a purely redistributive oriented median voter model the relation ought to be positive. If, on the contrary, insurance purposes of the welfare state are at work, the relation

should be negative in those fields more likely to be affected by insurance considerations.

Contrary to Wallerstein and Moene (2001:859-875), I do not take wage inequality as control for pretax/transfer inequality. Alternatively, I include in the models a measurement of Household Market income per equivalent adult (see Data Appendix for details about the actual calculation). I do so because I think that measuring pre tax inequality exclusively in terms of wages biases the analysis to facilitate the dominance of the insurance motive. This is the case mainly because in such a measure those who are the net beneficiaries of the welfare state, and therefore more likely to count redistribution among their political motives, are excluded. Alternatively, the use of household market income per equivalent adult avoids this bias³⁰. Finally, no control for national GDP is included for similar reasons to the ones argued for in the previous chapter. I turn now to discuss the results of the quantitative analysis.

6.2.3. - Results and Implications³¹

Table 6.3 presents a summary of the results obtained after implementing all the different estimations discussed in section 6.2.1. It includes the models that assume no serial autocorrelation in the error term and measure decentralization as the regional share of total social expenditure. Appendix 6.1 contains all the different specifications for each policy, including all possible combinations between the different assumptions in the error term and two different measurements of decentralization. In general,

³⁰ The inclusion of this variable makes unnecessary to control for union density or wage bargaining centralization since they are known to be a major determinant of wage and market income inequality (Wallerstein 1999: 679-680; Rueda and Pontusson 2000; Iversen 1999).

³¹ The Summary Statistics of all the variables used in the different models discussed in this section are available in the Data Appendix at the end of the thesis.

Table 6.3. The Policy Differential Hypothesis

	SOCIAL SPENDING (1980-97)	PENSIONS (1980-97)	UNEMP. % GDP (1980-97)	UNEMP. REPLAC. RATES (1980-97)	LOW INCOME (1980-97)	INCOME TAXATION (1980-97)	CAPITAL TAXATION (1980-97)
Old Age Dependency Ratio	30.6275*** (4.5053)	33.874 *** (2.5835)	---	---	---	59.5042*** (165175)	-24.842 (17.228)
Unemployment	0.28504 *** (0.1022)	---	0.235435*** (0.01675)	0.0088429 *** (0.0028048)	---	0.26202 (0.19524)	-0.8812 *** (0.2490)
Decentralization (WELFDEC)	-4.19555 *** (1.25874)	0.8262 (1.1402)	-1.517074*** (0.314427)	-0.238042*** (0.05867)	5.406044 *** (0.55993)	-1.8762 *** (0.59855)	-7.38008 (8.4568)
Government Ideology	-0.0435074*** (0.008508)	-0.0113618*** (0.003482)	-0.00094358 (0.0013473)	-0.00164 (0.001563)	0.0007895 (0.001008)	-0.057412*** (0.01454)	0.04933 *** (0.01925)
Turnout	0.2069808*** (0.05486)	-0.01703 ** (0.00838)	0.027913 ** (0.0063081)	0.022149 ** (0.008795)	0.0245704*** (0.004011)	0.34603*** (0.07031)	0.0966 (0.07471)
Market Income Inequality	3.6816 (4.234)	-4.98748 (3.77229)	-3.404938** (1.6605)	-0.994598 *** (0.231754)	-0.5125607 (1.012266)	9.332468 (8.56596)	6.202 *** (2.5214)
R-Squared (N)	0.5367 (172)	0.6093 (188)	0.5002 (172)	0.2318 (172)	0.5260 (156)	0.5037 (183)	0.1309 (183)

Reported estimates: OLS with Panel Corrected Standard Errors. All models include a constant. Serial Correlation (̂).

the results are very consistent, with one minor exception in the case of the models predicting the determinants of social assistance that assume a panel specific AR1 process of serial correlation in the error term. In principle there is no reason to believe that serial correlation should behave differently across OECD nations. Hence I lean more to take the other two assumptions as the more realistic ones. Generally, the results are not sensitive to the type of specification nor to the way decentralization is measured.

Regarding the control variables the estimates are consistent with the ones reported by previous contributions. Larger levels of dependency generate more welfare effort in all the policies considered. A similar pattern is found for political turnout, consistent with the predictions derived from the median voter model. The association between partisan effects and welfare effort appears to confirm previous analyses, especially in what regards the analysis of total welfare effort (see for all Iversen and Cusack 2000: 313-349). Finally, as to the effect of pretax inequality on welfare effort, the results obtained are very similar to the ones reported in Wallerstein and Moene (2001:859-875), even using an alternative measurement of inequality: for those programs in which the insurance motive is likely to dominate, mostly the labor market related ones, the relation is negative. In all the others but capital taxation, the relation is not significant.

I turn now to discuss the implications of the results regarding the policy differential hypothesis. The pattern identified seems to be consistent with the implications derived from the theoretical argument in section 4.1: the only policy included in the analysis that copes with universal risks, pensions, is precisely the one in which decentralization does not have a significant impact. The impact of decentralization is, on the contrary, statistically significant at 0.01 level in all the other policies except for capital taxation. In what follows I elaborate briefly on each of them.

The lack of a significant association between decentralization and pensions is consistent with the expectation that decentralization is not the preferred design when the risks to be faced by the policy are universal among individuals and thus more

likely to be shared across regions. In this particular case the pattern is enhanced by the fact that, in the absence of strong ties to regional labor markets, this sector of the population (especially the one with medium to high income) is likely to be more responsive mobility wise to the differences in fiscal treatment across regions. Pensioners may or may not broaden the tax base but they surely add to the proportion of the dependent population. By being mobile they increase the levels of risk sharing between regions, as it has been argued in detail in Chapter 2. Because of these two reasons, it was argued, decentralization should not matter as a determinant of the overall welfare effort on pensions. And so it has been found. In fact, consistent with the results, it is worth noting that in the most decentralized welfare state, the USA, pensions and public health services for the elderly (Medicare) are the only two fully federal (i.e. centralized) welfare policies. In this sense the coefficient reported in Table 4.3 simply summarizes one revealing fact: public pensions do not vary across regions within OECD countries³².

The case is very different when it comes to policies dealing with risks whose profile and intensity diverge across regions or even locally. The effect of decentralization on the level of effort and generosity put on welfare state programs related to labor market risks, mainly the unemployment benefits, the unemployment replacement rates³³ and the average levels of labor

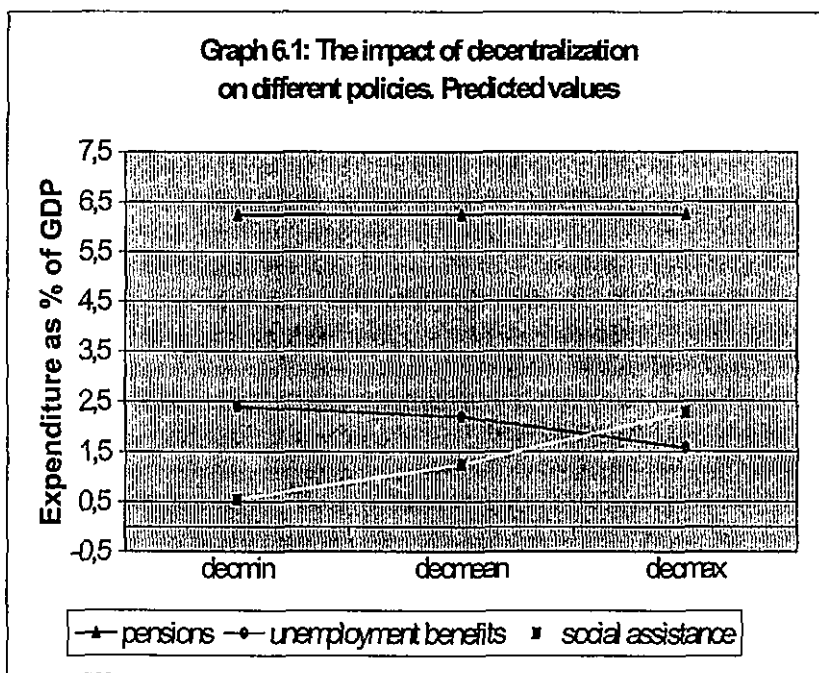
³² Indeed the very discussions about the elaboration of the Social Security Act are very revealing to this respect (Orloff 1993). Quoting Altmeyer (1968), Orloff (1988:73) reports the concerns of the Committee on Economic Security (in charge of drafting the law) in the following way: "The staff members in charge of developing the old-age security portions of the program were strongly in favor of establishing a national old age insurance system; they and the CES actuaries were unanimous in advising that, given extensive labor mobility, a federal state scheme involving contributions over worker's lifetimes would be unworkable from a technical point of view".

³³ Because of the existence of second order effects (Chapter 3), two-way causation (simultaneity) could be an issue regarding these two

income taxation, is found to be negative, as predicted by the model after exploring the specific structure of inequality in OECD countries (Tables 6.2.1 to 6.2.4). Finally, the expectation according to which, given the local nature of the issues to be handled, decentralized nations are likely to put more effort on social assistance policies is clearly confirmed by the statistical analysis. At this point it is worth noting that two additional models have been included in Table 6.3: the first column shows that, other things being equal, decentralization reduces the overall levels of social spending. In turn the last column appears to reveal that decentralization has no impact whatsoever on the levels of capital taxation across OECD nations.

In order to assess the magnitude of the impact of a change in the levels of decentralization on different policy realms, Graph 6.1 presents the predicted values of the levels of expenditure on pensions, unemployment benefits and social assistance expressed as a percentage of GDP. For each of these three policies the graph reports the predicted values when all the other variables included in Table 6.3 are kept constant at their means whilst decentralization changes from its minimum to its mean and maximum values. As it was already clear in Table 6.3, the predicted value of the share of the GDP devoted to pensions remains constant regardless of the change in the levels of decentralization. On the contrary the share of the GDP devoted to unemployment benefits would be reduced by almost 1 percent if decentralization increased up to its maximum value. Under similar conditions the percentage devoted to social assistance policies would be, according to the predictions of the model, 1.7% higher.

policies. In these two models, expenditure on unemployment benefits and replacement rates are regressed on unemployment. In turn, Nickell (1997) regresses unemployment on replacement rates. In order to address this issue, Appendix 6.2 includes a re-specification of the model using both OLS Path Analysis and Zellner's Seemingly Unrelated Regressions approach. Details about these two specifications were presented in Chapter 4. Appendix 6.2 clearly indicates that the findings regarding these two policies are not an artifact of reversed causality.



To sum up all the information contained in these models, two major conclusions are to be drawn regarding the relation between decentralization and redistribution. First, the conventional approach to the relation (discussed in Chapter 1), based on the existence of constraining effects on redistribution from a race to the bottom between regions in order to attract perfectly mobile factors, does not seem to work. At first sight it is indeed true that decentralization reduces the overall levels of welfare effort. But this by no means implies that the causal process at work has necessarily to be one of downward competition in which regions and firms exchange investments for low taxes and transfers. The fact that decentralization has no effect on the levels of average

capital taxation (as neither does capital mobility itself³⁴) questions this mechanism directly. Moreover, when the welfare state is broken down into its different components, the analysis indicates that decentralization does not bear an effect when the targeted population is more likely to be mobile (pensioners) and, alternatively, it does so on policy domains in which, as argued in Chapter 2, the targeted population is less mobile due to its attachment to regional labor market conditions (especially in the case of skilled labor). To be sure, there must be an alternative causal process accounting for this pattern.

Herein comes the second major implication of the quantitative comparative analysis carried out in this section. The data analysis does indeed confirm the policy differential hypothesis, which reaffirms the idea that the association between decentralization and redistribution is in itself the result of a process that links directly the scope of risk sharing between regions to the preferences of the key political actors regarding the territorial design of redistribution. That is, briefly put, the main reason why decentralization works differently across policy domains. Its negative effect on total welfare effort is only due to some of its components and therefore entails a misleading appearance. If pensions are not decentralized it is because the risks they cope with are universal and, in addition, a good share of the risks bearers is fairly mobile across regions. The levels of risks sharing across region increase because of these two factors and hence so do the incentives by all regions to bound to a centralized design. Here lies the core of the argument. The process has been shown to work differently in other domains depending upon how the structure of inequality and its attendant profile of risks are territorially distributed. Altogether this seems to make the argument developed in this dissertation a suitable alternative to the

³⁴ In Swank and Steinmo's words "Capital Mobility has not lead-and is not likely to lead- to a "race to the bottom" or the evisceration of the revenue raising capacity of the state: governments can (and do) pursue moderately extensive social protection and public good provision when they and their electorates so choose" (p.651).

conventional understanding of the relation between decentralization and redistribution.

However, before such a claim can be made on solid grounds it must be recalled that the test of the model I have just put forward in this section is at best indirect. I have been looking at a series of snapshots collected over twenty years that summarize the end of a long term process. The final picture seems to be consistent with the argument. But the intermediate steps are necessarily left out and hence so is the chance to test whether or not the causal dynamics that underpin the data points included in the sample is also consistent with the model. In order to overcome this limitation the final section of the chapter develops a comparative case study of the responses in Canada and the USA to the massive upsurge in unemployment during the years of the Great Depression.

6.3.- The scope of risk sharing and the design of redistribution: Unemployment Insurance and the Response to the Great Depression in Canada and the USA

Put differently, the goal of this study is to shed light from a different perspective on those many aspects of the link between the scope of risk sharing between regions and the territorial design of redistribution that remain beneath the statistical analyses. In this sense it aims both at complementing the testing of H4 and, more specifically, analyzing the extent to which inter-regional mobility matters in the sense of facilitating centralization (H5). The section is structured in two parts. First, I present a concise summary of the Canadian and USA responses to the worsening of social and economic conditions between the 1920s and the 1940s. Thereafter I address the reasons why they pose a puzzle that can be accounted for by the model presented in the thesis. The interpretation of the differences between the two experiences is developed in the second half of the section. Finally, I discuss the inferences that can be made on the basis of this comparison about the plausibility of

our understanding of the relation between the structure of inequality, the scope of risk sharing and the allocation of redistributive capacities across levels of government.

6.3.1.- A stylized history of the two experiences

During the first three decades of the XXth century Canadian and American social welfare systems shared many features. Among all of them two stand out: their endorsement of the British Poor Laws system and its underlying philosophy and their political and organizational fragmentation. In both countries, with some remarkable exceptions, the worse off were left to be taken care of by way of charity, either organized by the local administration or directly dispensed by private philanthropic organizations. Put it simply, the ruling approach to the indigents was that they did not constitute a public policy issue. For instance, those who were laid off were expected to fend for themselves and search for whatever jobs were available. Only those lacking any possible opportunity (because of illness or age) were considered the target of the relief provided normally by locally organized voluntary associations and only exceptionally (civil war pensions) by the federal government (Skocpol 1992). In general during the first fifteen years of the century public authorities were not directly concerned with social issues. State/provincial and federal governments refrained from direct intervention and only in exceptional circumstances did they launch one-off programs of emergency assistance.

Political fragmentation was an attendant feature to the absence of involvement of public authorities in poor relief and redistribution. In the United States the use of local poor relief was heavily linked to the organizational features of the patronage democracy. Regarding Canada, as Pal puts it, "the British North America Act had little to say about those activities that now comprise the welfare state[...]By tradition the municipalities were responsible for relief, or aid to the poor and the unemployed"

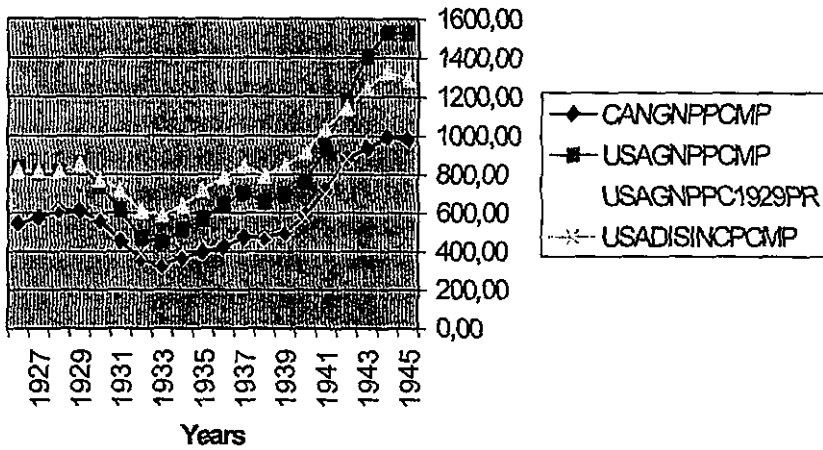
(Orloff 1988:33). The point to note here is that before the decades preceding the Great Depression none of the federal governments of these two countries had full control or responsibility over any of the policy realms that are conventionally considered part of the welfare state.

A third and major similarity between the two experiences lies in the scope of the sequence of economic downturns that reached its peak during the late 1920s and early 1930s. Because Canada and the USA are economically interdependent, both countries were hit similarly by the processes underlying the Great Depression. Briefly mentioned, these were four: an ongoing process of deruralization that created a massive surplus in the Canadian and American labor forces, the European monetary crisis (1930-31), relatedly an insufficient and late reaction in terms of macroeconomic policy and finally and most visibly, the collapse of financial and stock markets. Together these four factors provoked a long lasting reduction in both wealth and consumption, themselves affecting the expectations about recovery and thus making the Depression longer (Temin 1976: 62-96:138-179). The social consequences the Depression were dramatic on both sides of the frontier. Despite the general lack of good quality data, historical statistics are available to illustrate the scope of the Depression in both countries.

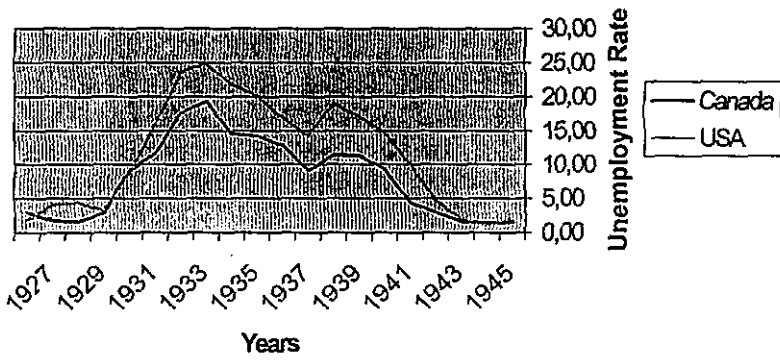
Graphs 6.2 and 6.3 present the times series of two indicators that, albeit very aggregate, capture both the magnitude as well as the timing of the Depression. These are the percentage of the total civilian labor force that is "not working and seeking for a job", as defined by the Canadian historical statistics (Graph 6.2)³⁵ and the

³⁵ The sources for the calculus of the ratio between those non working and looking for a job and the total civilian labor force in Canada are Statistics Canada. Historical Statistics. Newfoundland and the Yukon Territories are not included. In the case of the USA, the unemployment rate is defined as one minus the proportion of the civilian labor force that is actually employed (See Historical Statistics of the United States. Colonial Times to 1957, U.S. Department of Commerce, Bureau of the Census, 1961, pp 68-69).

Graph 6.2: CANADA-USA: EVOLUTION OF GDP PER CAPITA (1926-1945)



Graph 6.3: CANADA-USA: Evolution of the Unemployment Rate (1926-1945)



GNP per capita (Graph 6.3), which for the USA includes different operationalizations³⁶.

Due to the nature of the data the time series are not strictly comparable across the two countries. Nonetheless, the point to notice is that the trend shown by the indicators is similar in both countries. So, even if the actual magnitudes are not strictly comparable, it is possible to state that Canada and the USA also shared a deep Depression during the late 1920s and early 1930s. The peak in the unemployment rate is 1931, with 19.32% of the civilian labor force in Canada³⁷ and around 24% in the USA. Likewise, the GNP per capita also hit the floor during the period 1930-1931 in both nations. Historically oriented analyses offer further insights about what the Depression really meant for the living conditions of a large share of the population in these two countries. Talking about the USA, Achembaum (1986: 16-17) offers the following picture of the Depression :

"The nation had endured severe economic downturns before. But this time the extent, intensity, and duration of the upheaval were unprecedented. Between October 1929 and June 1932, the common stock price index dropped from 260 to 90. The nation's real GNP, which had risen 22 per cent between 1923 and 1929, fell 30.4 percent over the next four years. Nearly 5000 banks, with deposits exceeding \$3.2 billion, became insolvent; 90000 businesses failed. Aggregate wages and salaries totaled in 1993 only 57.5% of their

³⁶ These are the Gross National Product per capita at market prices, the Gross National Product at 1929 prices and the Disposable Income per capita at market prices. Source: Historical Statistics of the United States. Colonial Times to 1957, U.S. Department of Commerce, Bureau of the Census, 1961, pp.1-17; 131-145. The Canadian data come from Statistics Canada. Historical Statistics and represent Gross National Product at Market Prices.

³⁷ D.Guest (1997:83) offers slightly different estimates that put Canada much closer to the USA: "At the bottom of the Depression in 1933 nearly one quarter of the labor force was out of work and seeking jobs and an estimated 15 per cent of the population was in receipt of relief".

1929 value. The gross income realized by farmers was cut nearly in half.[...] More than one thousand local governments defaulted on their bonds; the rest managed to stay afloat only by firing staff and slashing social services.[...] Breadlines formed; shanties were erected on vacant lots.[...] Bankrupt firms could not honor their pensions obligations to superannuated workers. [...] Misery was a threat to everyone"

The picture looked no better in Canada (Struthers 1983: 44-104). The Royal Commission on *Dominion-Provincial Relations* put it blatantly when stating that "the livelihood for hundreds of thousands of citizens seemed to be entirely dependent upon public charity" (1940: 162).

A final (shared) feature of the Depression is worth noticing: both in Canada and the USA the regional incidence of the crisis was not balanced. As Banting puts it, "inevitably the depression hit some regions much harder than others, with the result that those with the worst problems had the least resources with which to respond" (1987: 62). Those states/provinces whose economies were of an agrarian basis were especially damaged by the fall in consumption and the attendant drop in agricultural prices. In Canada these were the western, prairie provinces, where Guest (1997:83-135) reports , for instance, a fall in the price of wheat from \$1.60 in 1929 to 38 cents in 1931. In turn in the United States, in the context of a general economic backlash, these were the Southern States, where a lot of planters were unable to keep their labor force. Moreover, charitable institutions had very little, if none, presence in rural and agricultural dependent areas (Patterson 1986). As a result, during these years chronic, long-term poverty is to be seen as particularly acute in the South (Alston and Ferrie 1999: 49-50).

Faced with such a worsening of social conditions the existing welfare institutions were powerless. They were doomed to bankruptcy and failure from the very beginning of the process. In Guest's words the Depression "cracked the residual mold"(Guest: 1997: 83). An alternative was in order in both countries. Before the mid-late 1930s, Canada and the USA witnessed several

attempts to launch *modern* social programs. They either failed or just worked during short periods of time, mainly linked to the special circumstances created by the First World War. Indeed, the nature and fate of these attempts are by themselves very illustrative of the dominating approach to redistribution and social insurance in these two nations before the Great Depression. In what follows I present a stylized account of what it took to handle the unemployment problem in both countries. More specifically, I concentrate on the political process beneath the adoption of their very first unemployment insurance legislations.

The Canadian Response: the centralization of Unemployment Insurance.

The Unemployment Insurance Act (1940) is the result of a political process that reverted the existing territorial design of welfare provision since the origins of the country. Its approval took a major constitutional amendment that spanned between 1936, a year in which the provisions regarding unemployment of the Bennett's New Deal (1935) were declared unconstitutional by the Supreme Court of Canada and the Privy Council of Great Britain, and 1940, a year in which the Federal Government and the provinces agreed to reform the British-North American Act so that the former could, among other things, take full control of the emerging national program of Unemployment Insurance. However, the struggles about unemployment started in Canada much earlier than 1935. In what follows I present a succinct summary of the political process underlying the adoption of a national Unemployment Insurance system by the Canadian federation.

To a large extent the history of the emergence of the Unemployment Insurance Act (1940) is the history of a failure, namely the failure in a long during struggle by Canadian political elites to preserve the guidelines of the institutional design of welfare established under the British North America Act (1867). These were, as summed up above, its resort to local and provincial relief and charities as the optimal layer to deal with a problem,

unemployment, that was understood at the time mainly as an individual issue. In other words those people who were unemployed were so because of "some fault of their own" and hence society should apply the criteria of "less eligibility", which implies caring, to the least possible extent, for those few cases which obviously could not fend for themselves (war disabled, elderly widows...). Such a view was basically shared by both Liberals and Conservatives during the 20s and 30s. However, as the different dimensions of the unemployment problem got worse and worse, governments muddled through ongoing downturns, under conditions of growing demands by the provinces and municipalities on the one hand and the stringency of public finances on the other. Along the way (1920-1940), a large number of short term solutions were unsuccessfully implemented. Unemployment became central to the political agenda, conditioning both the electoral outcomes of the competition between the Liberals (1921-1930; 1935-1941) and the Conservatives (1930-1935) and the dynamics of the Dominion-Provincial relations. Indeed, the allocation of the capacity to react politically against the different dimensions of the unemployment problem was a central issue throughout these two decades. As the Provinces and the Municipalities were overloaded, Ottawa tried to keep its financial and administrative involvement to a minimum and hence insisted on the fact that, constitutionally, taking care of the unemployed was their task. A large share of the contention was about passing the buck. And Ottawa remained committed to this view and succeeded until the second half of the 1930s. By 1940 the roles were exchanged: unemployment insurance was designed as a fully federal program, national in scope. The institutional design of unemployment policies had changed dramatically. In what follows I present a concise summary of the different stages in this process³⁸. The summary is broken down in

³⁸ This summary is built upon the contributions by Guest (1997), Pal (1988) and, for the most part, Struthers (1983). The latter provides the richest historical account of the unemployment problem in Canada between 1914 and 1941.

three periods: the 1920s, especially the second half, with the first Liberal Government of Mackenzie King; the first half of the 1930s (1930-35), with the Bennett's Conservative Government and, finally, the period 1935-1940, when the Liberals of Mackenzie King return to power.

During the early 1920s the prospects for the development of an Unemployment Insurance policy looked promising. In 1919 the Royal Commission on Industrial Relations had recommended, in line with the 1911 British one, that there be a national insurance schema to deal with the temporarily unemployed (McIntosh and Boychack 2001:81-82). In order to cope with the demobilization after World War I an Employment Service had been established, collecting for the first time systematic information about the labor force and re-allocating workers throughout the country. Moreover, the officials of the Department of Labor recommended the adoption of a system of unemployment insurance. The context changed rapidly half way through the decade: a slight economic recovery put the issue aside in the political agenda. More importantly, the Liberals were in power in coalition with the Progressive Party, an organization created to promote the interests of farmers. During the post WWI years farmers were short of labor force. The Progressive Party led the government to pursue a two-fold policy on the issue, namely to relocate the unemployed to work in farms as a way to deal with the problem of unemployment ("*back to the land*" strategy) and to facilitate the immigration of unskilled workers to be incorporated both to the farms and to the industries extractive of natural resources. Due to the specific conditions of the Canadian Winter and the nature of these industries, such strategies created a huge group of seasonal, highly mobile, workers. Depending upon the time of the year, they would be hired in different provinces across the country to perform tasks that demanded nothing but physical effort. When in 1929-30 the Depression hit harder, the Liberal-Progressive strategy was proved to be insufficient, if not a failure. The Conservatives gain office with the promise to end unemployment.

When Bennett took office the demand for relief was constantly increasing across the country (many different kinds of people were forced to resort to relief) and so is the one for a national, non-contributory, unemployment insurance systems. Municipalities, the unemployed, organized labor as well as an important share of Canadian businessmen supported the claim, as illustrated by the fact that in 1932 Bennett was presented with a petition in this direction signed by 94169 people. Moreover the transients issue was growing in importance: according to Whitton's estimates (1933) there were up to 100,000 seasonal workers in the West on whom unemployment was (and would continue to be) especially concentrated. These workers, not being residents, posed the issue of which layer of government should take care of them. Municipalities and Provinces looked at Ottawa and demanded a response to the added relief burden of the transients. Bennett's response consisted basically in sticking to the traditional approach. His strategy was composed of the following items: (1) Establishment of a clear distinction between relief and insurance, putting aside the latter on the grounds of that it would require a constitutional reform of the BNA. (2) Payment for the cost of the transients relief until July 1933. (3) At the same time he adopted a strict policy of "provincial self-reliance" in what concerned Dominion-Provincial financial relations. Among other measurements he limited the provinces capacity to take debt to 1\$ M a year. (4) Finally he not only maintained but also expanded the "back to the land" strategy by launching the National Defence Relief Camps, a system of concentration camps for "single unskilled men and recent immigrants" in which these would work for the government in exchange for the meals, shelter and money received as relief. These were aimed at preventing social unrest and the "rise of socialism" by drawing transients out of the cities.

These measures were not enough. By 1934 the failure of this strategy to guarantee prosperity, the proximity of the elections (1935) and the achievements of F.D. Roosevelt's policies made Bennett change his approach in a two-fold way. First he proposed to progressively abandon relief and substitute it with a program of

Public Works able to generate employment; at the same time he equally proposed to design an unemployment insurance system for the bad times to come. In fact the two measurements were interconnected, part of a strategy to overcome the expectable resistance from the Provinces against Ottawa's withdraw from unemployment relief. As Rogers puts it, "the insurance bill was intended to make the withdraw palatable". However, it failed "Instead the attempt to withdraw from relief wrecked any chance of constitutional agreement on the Insurance bill" (recall that Provinces needed to agree to amend the BNA so that the capacity to deal with the unemployed could be transferred to Ottawa). The proximity of the elections made Bennett pursue a unilateral and rather rushed course of action. He presented his own New Deal in a series of radio speeches to the nation in which he presented a number of initiatives to overcome the social and economic crisis of the country, namely a national minimum wage, working-hours legislation, a more progressive tax system and, among others, a contributory old-pensions and health and unemployment insurance. The Liberals highlighted that most of these initiatives would require a reallocation of political capacities from the Provinces to Ottawa but did not oppose the Employment and Social Insurance Act, passed by the Parliament in March 1935. The proposal contained an Unemployment Insurance system whose major features resembled the 1911 British System, albeit with some important differences: benefits were stricter, in accordance to the less eligibility doctrine, and coverage was more limited in that a large number of workers and occupations (mainly belonging to the primary sector) were excluded. Moreover, the Government would only cover 1/5 of the total cost of the program (the British one covered 1/3) and neither sickness nor transitional benefits were considered. In general federal involvement would remain to a minimum in that the Unemployment Insurance would be neither financed nor administered by the Dominion. In many ways Bennett's proposal was a mirror image of the relief system. It never came to be implemented. The Supreme Court (1936) and the Privy Council in London (1937) declared it ultra-vires. As the

Liberals had warned, they made even clearer the need of a constitutional amendment if Ottawa was to implement any Unemployment insurance program.

However, a set of *programmatic* measurements at the end of term were not enough. The transients issue re-emerged badly with the strikes in the relief camps of British Columbia, the organization of the On to Ottawa Trek and the Regina riots. Social unrest kept increasing while the financial relations between the Provinces and the Dominion were broken (the four Western provinces owed Ottawa 117\$M.). Not surprisingly, in the 1935 elections Bennett was badly defeated and, with him, "the idea that the care of the unemployed was a local responsibility". (Struthers 1983: 137). The Liberals, led by Mackenzie King, were back in power.

King's initial moves were rather continuist. Indeed, he became even tighter regarding public finances by trying to force the provinces to have a balance budget and aiming at a progressive reduction in the federal share of relief expenditures (mainly via a program of progressive decrease in Grants in aid to the Provinces)³⁹. He also kept as an important part of his unemployment policies the "back to the land" approach.

However, King also introduced three important innovations: first, he closed the relief concentration camps and substituted them for a land settlement program (1936)⁴⁰. Secondly, he appointed a

³⁹ Even as late as 1937, when the crisis had fully exploded, the Western provinces had been hit by a severe draught (thus increasing the provinces relief burden) and very few people believed in the virtues of a balance budget, King proposed (1) to freeze Grants in Aid to the previous year level, (2) to limit up to 30% Ottawa's share of total relief costs and (3) to set a maximum level of relief to be provided by the provinces. The proposal created a serious crisis both with the Provinces and within his own government. Although it was finally withdrawn, it is very illustrative of King's approach to public finances.

⁴⁰ The conditions under the new program were much better than in Bennett's concentration camps. Now workers would get a proper salary ("a 5\$ monthly stipend to both the farmer and person he hired plus a

National Employment Commission to study alternative courses of action to deal with the problem of unemployment. The 1936 NEC's report included a number of recommendations that would have meant a path-breaking involvement of the federal government in the unemployment problem. In addition to the land settlement program (the only implemented at the time), the NEC proposed also the creation of an Employment Service that helped coordinate employers and employees, the launching of an ambitious Public Housing program able to both create employment and lighten the shortages in the housing supply as well as the creation of a National Volunteer Conservation System along the lines of the one developed by Roosevelt in the USA (CCC). None but the land settlement program⁴¹ were implemented.

Finally, after the Privy Council declared unconstitutional the Bennett's New Deal, King started exploring the position of the provinces regarding the amendment of the Constitution, necessary to develop a centralized unemployment insurance program. To this end he appointed in August 1937 the Rowell-Siros Commission on Dominion-Provincial financial relations. At this point six provinces agreed to transfer the capacity to deal with unemployment to the federal government. New Brunswick decided to wait for the conclusions of the Commission before making a decision. Quebec, at the moment ruled by the Conservatives (M. Duplessis, Premier), refused to transfer its powers, for it saw the Constitutional reform as an attack against

2.50\$deferred bonus for each month worked to be received during the winter months "(Struthers 1983: 159-160)) and the program would be much broader in coverage (targeted at the estimated 100000 transients, it ended up taking care of 37000 homeless men and 5000 women, which were excluded from Bennett's camps.

⁴¹ Indeed this particular policy solved several problems at once: it solved temporarily the transients issue; it continued to provide cheap labor to the farmers and, last but not least, it reduced significantly the cost of relief expenditures to the provinces. British Columbia and Ontario refused to take part in this program.

its provincial autonomy. Ontario (Mike Hepburn, Premier) was also concerned about its autonomy and joined Quebec in refusing the amendment. Incidentally, both provinces would have been net contributors in any national insurance system to be implemented. Finally, Alberta's Premier (Aberhart), whose attempt to develop a system of Social Credit in the province had been overruled by Ottawa, rejected any constitutional amendment unless he could see the specific legislation first. Under these circumstances, the doctrine of seeking unanimous agreement for the reform delayed even further the adoption of unemployment insurance; for the moment King decided to postpone the issue until the Rowell and Siros report was published.

By the end of 1937 a heavy drought increased the magnitude of the Depression in the West. This created yet another conflict between British Columbia and Ottawa about the transients. By closing the camps six weeks earlier and cutting off relief for these workers, the BC premier successfully forced Ottawa to pay for the relief expenditures generated by all these non-resident workers. Transients became once again the most visible symbol of the shared, non-local, nature of the unemployment problem. Action was needed sooner rather than later. In December 1937 the NEC issued another report that openly demanded a policy change. It pictured as a failure the existing relief policy, especially the administration of the Grants in Aid approach by the federal government. It also criticized the balance budget principle and called for a significant increase in the fight against unemployment. It proposed the professionalization of the Civil Service and, most importantly, it made a plea for a national approach, led by the federal Government, that combined both assistance and insurance. Finally, they argued that the Constitution could not be an obstacle to courses of action that could no longer wait. In response to these demands, King's government put aside the balance budget and agreed to spend \$40M on unemployment relief expenditures. It also rescued some of the previous NECs proposals by passing the National Housing Act and the Municipal Improvements

Assistance Act. However, no Unemployment Insurance Act was proposed. The Rowell-Siros report was not yet concluded.

In this context the beginning of the Second World War came to overcome the impasse, forcing the Government to seek the constitutional reform even before the publication of the Rowell-Siros report. The concerns about the future demobilization and the problem of unemployment increased further, if possible, the need for unemployment insurance. More importantly, it got into line all provinces that previously either doubted or openly opposed the amendment. M. Duplessis, Quebec's conservative premier had been replaced by a Liberal, A. Godbout, who quickly switched positions. Ontario's premier understood that the War demanded union and cooperation and did likewise. New Brunswick also agreed immediately. Alberta's premier, according to Struthers (1983), did not want to stand alone as the only opponent to an amendment presented at the end as a national need for the difficult days ahead. At last, the Rowell-Siros report came to back up all the non war related arguments in favor of Unemployment Insurance, namely administrative efficiency, inter-provincial equity and especially the fact that all provinces were affected by the problem, i.e., the fact that unemployment "was no longer seen as the result of local conditions".

In July 1940 the Unemployment Insurance Act was approved. A fully centralized program was finally at work. It was heavily based upon Bennett's legislation, with three important qualifications⁴²: (1) Benefits were no longer at a flat rate, but graded according to previous earnings. (2) A bigger effort was made in terms of coverage (75% of the labor force), eligibility (the qualifying period is reduced from 40 to 30 weeks) and duration. However, seasonal agriculture, forestry and fishing workers were still excluded, left to be dealt with by assistance policies. Following the Rowell and Siros report, the full cost of the latter was finally assumed by Ottawa, albeit keeping the "less

⁴² A fully detailed account of the different provisions of the 1940 Unemployment Insurance Act can be found in Dingleline (1981: 5-15).

eligibility" principle. No national relief individual minimum was recommended by the report. The report, however, did suggest a centralization of taxation and the design of an inter-provincial system of revenue sharing so that the average provincial cost of relief would end up being equalized.

The American Response: creating incentives for the States to pursue their preferred System of Unemployment Insurance

The relation between the social consequences of the Depression and the design of an Unemployment Insurance system is also very clear in the case of the United States (Webber and Wildavsky 1986: 453-464). As in the case of Canada, discussions about Unemployment Insurance date back as far as 1916, when a resolution was introduced in Congress to create a commission to draft legislation on the matter. The proposal did not go forward and the issue died until the 1928-1931 period. As the depth and duration of the Depression were increasing, the Senate Committee on education and labor held hearings "on the national problem of unemployment" (McGowan 1999:3). In 1931 and 1934 Senator Robert Wagner introduced proposals for a federal-states Unemployment Insurance system. Although the bills were not even voted on, the 1934 proposal became a very important precedent of the institutional design finally adopted for unemployment insurance in the United States.

During the 1920s and 1930s the conventional approach to unemployment relief was not challenged⁴³. Indeed, some features of the traditional view of relief were also present in Roosevelt's approach to it. In his own words, "the federal government, of course, does have to prevent anyone from starving, but the federal government should not be called upon to exercise the duty until all other agencies fail. The primary duty is that of the locality, the city, county, town. If they should fail and cannot raise enough to

⁴³ Stewart (1930) offers a review of the alternatives available at the time. No major challenge to the conventional approach was on the agenda. A detailed historical account of the evolution of unemployment relief during the Depression decades is offered by Singleton (2000).

meet the needs the next responsibility is on the states and they have to do all they can. If it is still proven that they cannot do any more and the funds are still insufficient, it is the duty of the federal government to step in" (New York Times, May 23rd, 1933; cfrd. Singleton 2000: 108). The latter was indeed the case. Roosevelt's action on this matter was much quicker and less reluctant than the one of his Canadian counter parts. Right after taking office he introduced the Federal Relief Emergency Act, "appropriating \$500 M to the States" (Singleton 2000:102-110). In so doing he responded "to the plight of the unemployed and to the non inconsiderable protests of state and local welfare officials, whose agencies were overwhelmed financially by the proportion of the need produced by the crisis"(Orloff 1988:69).

The United States presents yet another difference in comparison to Canada. During the 1920s and early 1930s there had been early developments in unemployment insurance both at the industry and the state levels. According to the estimates of the Department of Labor of the State of New York, "in 1934 trade unions plans covered about 100.000 workers; joint unions-management plans covered about 65000 and voluntary company plans covered another 70000" (McGowan 1999:5). In addition some states managed to react to the Depression earlier than the federal government and introduced their own unemployment insurance legislations, most prominently the Wisconsin (Nelson 1969) and the Ohio laws (1932). By 1935 six other states (New York, California, Massachusetts, New Hampshire, Utah, Washington) passed their own legislations in anticipation of the Social Security Act.

In spite of these early risers, by 1934-35 unemployment insurance was a privilege reduced to a minority of the American labor force. At the same time, the Depression had just reached its peak: the unemployment rate was 25%. A proportional policy response was demanded from the federal government (Weir 1988: 149-199; Skocpol and Ikenberry 1983:87-148). Furthermore the need to face the Depression in a convincing way was urged even more strongly by the emergence at the left of the political

spectrum of a number of much more radical proposals. If the federal government failed to do something, such proposals would have had a chance to gain enough support⁴⁴.

The big effort made on behalf of unemployment and old age relief bought Roosevelt some time to carefully design a set of longer term policies to handle the different dimensions of "economic instability". In 1934 he appointed a Committee on Economic Security to study, among other social security related matters, the problem of unemployment. From this point onwards the history of the shape of the American response to unemployment can be traced back through the different stages that go from the production of the report of the Committee to the final approval of the Social Security Act. Along the way the contentions about the approach to be taken as well as the different influences received by the drafts of the legislation reflect clearly the reasons why, facing an equally "national" problem, it is finally the states, and not the federal government, that retain full political control of unemployment insurance.

Fortunately, a number of direct participants in the process wrote a number of books to recollect their experiences. These books provide us with a detailed account of the different stages in the process of elaborating the CES report and passing the SSA and some of them display analytical approaches that are really ahead of the time. The remainder of this section is built upon several of

⁴⁴ Among these proposals were the Long's plan for a flat universal pension to be given to anyone over 60 or the Townsend's plan to issue a sales tax to pay 200\$ a month to every American Citizen except convicted felons (Berkowitz 1991: 1-39). In what regards the unemployed, an example of more radical proposals is offered by the Lundeen Bill, submitted to (and defeated in) Congress by Representative Lundeen from Minnesota in 1934 and 1935. Basically, the bill provided "for the payment of unemployment compensation out of the funds of the national government to all unemployed persons over the age of eighteen years for as long as they were out of work through no fault of their own" (Douglas 1936: 74).

these contributions, namely E. Witte's⁴⁵ *The Development of the Social Security Act* (1962), Arthur Altmeyer's⁴⁶ *The Formative Years of Social Security* (1968) and Paul H. Douglas'⁴⁷ *Social Security in the United States. An Analysis and Appraisal of the Federal Social Security Act* (1936). The material is organized as follows. I first focus on the discussions within the CES. Specifically, I present the different alternatives as to the institutional design of unemployment insurance and discuss the reasons underlying the final choice. Secondly, I analyze the political influences in the re-drafting of the Titles devoted to unemployment insurance of the Social Security Act during its legislative process. This includes the inputs in both the House of Representatives and the Senate as well as the Conference Committee to conciliate the disagreements between both Cameras. Finally, I present a succinct summary of the final outcome.

Both Douglas (1936:28-69) and Witte (1962: 111-143) agree to report that there were basically three alternative institutional designs on the table of the Committee on Economic Security. These were: (1) a national system in which the federal government would collect contributions from workers and employers and make transfers directly to the unemployed; (2) what Witte calls a "subsidy plan", i.e., a system that "was, in essence, that the amount

⁴⁵ Executive Director of the Committee on Economic Security (1934-1935). This book is based on a diary kept by the author during the entire process.

⁴⁶ Second Assistance Secretary of the Department of Labor and Head of the Technical Board of the Committee on Economic Security.

⁴⁷ Professor of Economics at the University of Chicago. He served throughout the years as external assessor as well as discussion leader in the National Conference on Economic Security, a convention held in Washington (1934) where initial discussions on the different types of institutional designs to be implemented were held. Thereafter, he served as close collaborator of Bryce Stewart, Head of the Committee's Area of Study on Unemployment Insurance and former Director of the Employment Service (1919) in Canada. The sharpness of his analysis is even more striking if the fact that he wrote his book almost upon the passing of the Social Security Act is taken into account.

of revenues collected through the federal tax from employers in each state be returned to that state to be used for unemployment compensation purposes, subject to the state's compliance with standards to be prescribed by the federal government" (Witte 1962: 115)⁴⁸; and finally, (3) a tax-offset system along the lines of the Wager-Lewis Bill (1934) discussed above. Since the latter was the option finally recommended by the Committee and eventually the institutional design for the provisions on unemployment insurance under the Social Security Act a word on the Wager-Lewis Bill(1934) is in order.

The Wagner-Lewis bill on unemployment insurance was designed to motivate the states to enact unemployment insurance laws. As Douglas (1936:21) notes, "it drew its inspiration from the Federal Inheritance Tax Act". Such legislation was the response by the administration of President Coolidge to the attempt by Florida to attract the revenues of the wealthy by excluding from the State's Constitution the possibility of taxing inheritances. The response from Washington was innovative from an institutional point of view. The federal government's response consisted in passing the above mentioned Act. It introduced an inheritance tax with the provision that "80 % of the sums thus collected would be returned to those states which had state inheritance tax laws. If a state did not have such a law, however, the federal government retained all the amounts paid in from the states residents" (Douglas 1936: 22). Florida presented a case for the autonomy of the states before the Supreme Court and lost it. The Federal Inheritance Tax Act was declared to be constitutional. This was probably the most important reason why Wagner and Lewis adopted it as the basis for a proposal that, as we shall see below,

⁴⁸ Douglas (1936:29) distinguishes two types within the "subsidy plan" approach (also called tax remission system), namely a block grants model, where the federal governments in the only one raising revenues and transferring them for the specific purpose of unemployment compensation, and a matching grants model, where the federal government provides funds to match states revenues according to their needs.

shares many features with the final provisions of the Social Security Act. These were basically three: (1) a payroll tax upon employers equal to 5% of what they pay in wages. If a state passed a law and met the federal standards, "then the contributions paid by employers under such an act would be credited as an offset against the federal tax"(Douglas 1936: 23). This creates an incentive for states to pass the law in that there is no added cost for employers and there is also a penalty for those who do not in that they still pay the 5% payroll tax to Washington. (2) There is a set of standards to be met by the states, indeed of a rather moderate nature, namely state laws ought to be mandatory; union membership does not disqualify the worker from benefits; and workers cannot be forced to work for "substantially less" than the ongoing wage rate. (3) Otherwise, states are free to choose whatever system or institutional design for the provision of unemployment insurance. The project did not pass through Congress.

Despite the final outcome the proposal to adopt a national system of unemployment insurance was seriously considered by the Committee. Indeed, it lacked neither support (the trade unions among others) nor an articulate defense (Douglas 1934: 215-216). Bryce Stewart was the most salient proponent of a centralized solution. In Stewart's and his followers view a national system would be administratively more efficient both in the collection of information and in the implementation of the program; its staff would be easier to professionalize; it would also make benefits more equitable in that it would prevent a wide variety across states from emerging; and, finally, it would make it easier to assess the magnitude of the costs of the program as well as allocate the burden of its cost. This was an especially important issue since, at the time, most of states lacked effective income taxes. Briefly put, they were proposing to treat what they understood as a "national problem" with a "national solution", following a route similar to the one the Canadian provinces would take in 1940. Indeed, a recommendation for a national system was officially made in October 1st 1934 as part of the first report

presented by the Unit of Study on Unemployment to the board of the CES: "*if constitutional, a nationally administered system of unemployment insurance is to be preferred to a state system, but the Committee should be satisfied that the nationally administered system is constitutional before commitments in favor of such a system are made to the public*".

The paragraph also reflects how the supporters of the tax offset system made out of the issue of constitutionality⁴⁹ the axis of their eventually successful position. In general while the endorsers of a national system built their case around technical, administrative and economic arguments, the proponents of the tax offset system along the lines of the Wagner and Lewis Bill built theirs on purely political and constitutional reasons. And in doing so they were much closer to Roosevelt's own view of the issue. Indeed, Roosevelt himself made very clear what the political context was in relation to the institutional design. In his Declaration of Policy on June 8th 1934, when he announced the appointment of CES, he indicated that "he favored a plan providing for a maximum of cooperation between the states and the federal government, leaving to the states a portion of the cost of management and to the federal government the responsibility of investing, maintaining and safeguarding the funds constituting the necessary insurance reserves".

Roosevelt's administration was concerned with Social Insurance being potentially turned down by the Supreme Court (Douglas 1936:33). However, this fear did not stop him in the case of old-age insurance. As I shall elaborate further below it seems more plausible that it was Roosevelt's concerns about the likely opposition of the Southern States to any system disrupting their specific system of labor relations is what mainly underpinned these words. By making these statements the President encouraged

⁴⁹ By the issue of constitutionality I refer to the need, existing in any federal polity, not to overrule the "state rights" to develop alternative policies on those matters, like Social Security, in which the Constitution does not guarantee the Federal Government an exclusive political capacity.

the Committee to anticipate as much as possible those political and constitutional issues that could slow down or even prevent the passing of the Social Security Act (Noble 1997; Berkowitz 1991). Francis Perkins, Labor Secretary, and Witte understood this encouragement as a precise instruction and hence put all his efforts to prevent the final Report by CED from recommending a national unemployment insurance system. In addition to the need to satisfy the political concerns of the President, some of the defenders of the tax offset system saw a national system as the end of the very few existing experiences at the state level. Witte himself was a member of the Commons School and had been very involved in the development of the Wisconsin model of unemployment insurance (Nelson 1969). The early risers of unemployment insurance (including Witte from Wisconsin and Wagner from New York themselves) had also good reasons to oppose a national system (Altmeyer 1968: 18-24; Orloff 1988: 69-75). The combination of these two factors determined the results of the internal deliberations of the CES. On November 9th a motion according to which "all the thought of an exclusively federal system be abandoned" (Witte 1962:118) received approval. By November 14th Roosevelt announced that unemployment insurance would be a "federal-state undertaking". From this point onwards, the issue was partially settled: there would no national unemployment insurance system in the United States. The question had been narrowed down to a choice between the "subsidy plan" and the tax offset system.

After several rounds of consultation between CES and the Advisory Committee of the Department of Labor (initially in favor of the subsidy plan for 9 to 7 votes), it was decided to draft the Unemployment insurance provisions along the lines of the Wagner-Lewis Bill, not only because it guaranteed to each state the possibility of pursuing its own strategy, but also for reasons of constitutional pragmatism. According to Douglas (1936: 48), "the one major argument that came to be urged for the offset plan as opposed to the tax remission system was that, if the latter were later to be declared unconstitutional, the whole system of

unemployment insurance would necessarily collapse, whereas, even if the tax offset method were finally rejected by the Supreme Court, the states would in the meantime have passed acts that would continue".

In August 18th 1935 Roosevelt signed the Social Security Act. Let me, at this stage, take a few steps forward and summarize its final provisions on unemployment insurance:

1.- A cooperative system between the federal government and the states for the purposes of unemployment insurance. This system takes the form of a tax offset system in which the participation of the states is voluntary.

2.- The federal government levies a payroll tax on employment that would be equal to 1% of total payroll in 1936, 2% in 1937 and finally equal to 3% from 1938 onwards. This tax is deposited in a federal unemployment trust fund under the control of the Secretary of the Treasury. 90% of the revenues are devoted to transfers to the states that effectively develop their own unemployment insurance system. The remaining 10% is devoted to cover administrative costs.

3.- States are free to choose the specific institutional form of their unemployment insurance system (plant reserves, industry reserves *et caetera*). They are also left free to adopt any scale of benefits they wish. Furthermore they have full control on waiting periods and duration of benefits.

4.- State's Unemployment insurance systems must none the less conform to a number of standards established in the law, most of which come directly from the Wagner- Lewis Bill. These are:

4.1.- The payment of benefits must be made through the public employment offices of the state or in any other form "approved by the Social Security Board".

4.2.- No state system can disqualify a recipient if he refuses to take up a job vacant due to any kind of labor dispute.

4.3.- The same applies to the unemployed who refuse work which pays "substantially less" than the ongoing wage rate and/or

has "substantially worse working conditions" attached to it. The specific meaning of "substantially less" and "substantially worse" is left to be decided by the states within a range (or zone of tolerance) established by the Social Security Board.

4.4.-The same applies if the worker refuses to sign a "yellow-dog" contract. By "yellow dog" contract it is meant a contract that requires the worker to join the company union and/or refrain from joining "bona fide labor organizations" (Douglas 1936: 137).

5.- Finally, the Social Security Act excludes from the unemployment insurance system a number of specific occupational categories and businesses. These are: agriculture (including croppers and tenants), domestic service, shipping, public employees (federal, state and local), non-profitable organizations and the self-employed. In fact every firm with 7 or less workers is exempted from paying the federal payroll tax.

However, there is a significant distance between these and the provisions of the original bill as drafted by the Committee on Economic Security. A very illustrative political process took place in the interim, where conflicts about the details concentrated the bulk of political contention. These conflicts were to take place in the Ways and Means Committee of the House of Representatives as well as in the Finance Committee in the Senate. Table 6.4 presents the diachronic sequence of the legislative process by comparing its four main stages, namely the original draft, the changes introduced in the House and the Senate and, finally, the agreements achieved in the Conference Committee⁵⁰. The comparison is structured around four aspects of the law: the revenues to pay the unemployment funds, the institutional design of the states systems, the coverage of the program and the provisions for the administration of the system.

⁵⁰ The Conference Committee is a joint Committee where conferees from both Houses meet in order to reach a consensus on those specific points of the legislation where the decisions of the House and the Senate have previously differed.

TABLE 6.4. USA: Legislative Evolution of the Provisions for Unemployment Insurance in the Social Security Act (1935). Titles III and IX

	ORIGINAL BILL	HOUSE OF REPRESENTATIVES (Ways and Means Committee)	SENATE (Finance Committee)	CONFERENCE COMMITTEE
REVENUES (Federal Payroll Taxes)	The rate of the federal payroll tax is related to previous years' levels of production. ¹ The normal level is thought to be 3%.	The rate is to be established following an annual scale. 1935: 1%; 1936: 2%; 1937: 3%. It ceases to be related to previous years' levels of production.	Remains	Remains.
INSTITUTIONAL DESIGN	Freedom to adopt any type of unemployment insurance system. ²	The options are limited on grounds of accounting efficiency. States are no longer permitted to adopt systems of industry or plant reserves ³ . Plant reserves were also said to be too inequitarian.	Lafayette amendment passes. Previous freedom is restored	The Senate position prevails. States are fully free to choose their system of unemployment insurance.
COVERAGE	Wide Coverage. No specific exclusions beyond public agencies. Only those firms with less than 4 workers are exempted from the federal payroll tax.	Specific occupations (mainly agricultural workers, including croppers and tenants) are excluded. The threshold of exemption is increased up to firms with 10 workers.	Remains	Compromise: The threshold for a firm to be exempted from the federal payroll tax is 8 workers.
ADMINISTRATION	Federal Standards of Personnel are required to all States systems. Benefits are to be paid only by the Public Employment offices of the States.	Abolishment of Federal Standards of Personnel. Remains	The threshold of exemption is set back to 4 workers. Remains. The requirement of paying only via Public Employment offices is eliminated	Compromise: Benefits will be paid in any form "approved by the Social Security Board". A minimum control is established.

Sources: Data collected from Douglas (1936), Witte (1962) and Altmeyer (1968).

¹ If the index of production of the Federal Reserve Board was by September 1935 less than 84% if its 1923-25 average, the payroll rate would be 1%. If the Index was between 84 and 95%, the rate would be 2%. If the Index was above 95% of the 1923-25 average, the rate would be 3%.

² In the case of the states willing to go for an industry or plant systems, it was provided that they should contribute 1% of their payroll to a pooled state fund in order to generate a reserve for other industries.

³ Note that under these conditions the existing Wisconsin system would be doomed to change or disappear.

From Table 6.4 it is clear that the modifications introduced in the legislative process work in the direction of either protecting the existing states systems or ensuring as much freedom as possible in the design of the ones to be created. The successful survival of the Wisconsin system illustrates the former. The flexibilization in the form of paying benefits exemplifies the latter. However, the most illustrative aspect of Table 6.4 is the one on coverage. The introduction of specific provisions excluding agricultural workers of the system of unemployment insurance highlights the weight of the South as the political engine underneath the process. Alston and Ferrie (1999: 49-75) argue that Roosevelt and CES were aware of this and managed to anticipate potential objections when they decided (1) to exclude firms with less than 4 workers and (2) re-classify croppers and tenants as agricultural workers. They thought both measures would be enough to keep the system of labor relations in the South unaffected by the new unemployment insurance system. Southern Democrats wanted more guarantees (Brinkely 1984; Whatley 1983: 905-930); hence the specific changes on the threshold of exclusion on the one hand and, more directly, on the occupational categories left out of the program. If it were to pass, the Social Security Act should be no threat⁵¹.

To summarize, the American response to unemployment was, in terms of the institutional design, at the extreme of the Canadian one. In front of a similar shock states managed to keep full control of the program. This remains today one of the "small differences that matter" (Card and Freeman 1996), for the territorial structure

⁵¹ An even more straightforward example is offered by the change in the legislation about old-age insurance. Southern Democrats managed to erase from the Social Security Act any paragraph that potentially could lead to the inclusion of "negroes" in the program. So for instance they erased from the SSA an special Old Age insurance program recommended by CES. They also eliminated a general requirement in the law according to which "assistance could not be denied to any US citizen". See for details Alston and Ferrie (1999: 49-75) and Orloff (1993:269-299).

of the two programs has remained basically unaltered over time (Banting 1987; Banting 1997: 267-309; Myles 1998:341-364; Boychuck and Banting 2001) . The next section elaborates on the implications of the contrast between the Canadian and the American responses for the two hypothesis of interest in this chapter, namely the ideas that the territorial design of redistribution is a function of the scope of risk sharing (H4) and, more specifically as to the mechanisms, that interregional mobility increases the scope of risk sharing and hence makes centralization the preferred design (H5).

6.3.2.- Making sense of the differences: interpretation and inferences

Despite regional imbalances in the incidence of unemployment it seems hardly deniable that unemployment was a national problem in both countries⁵². Why is it then that, when confronted with similar shock and departing from similar economic and institutional settings, the final outcomes diverge? More specifically, why is it that the Southern American states, badly hit by the Depression and thus potentially net recipients within any centralized solution, opposed it so strongly? Why did Ontario and Quebec finally agree to a national formula within which they were called to be net contributors?

The very existence of two different outcomes poses a puzzle for single factor explanations based either on the existence of institutional veto points or on the need to pool resources to face a structural economic shock. The American experience is consistent with the former as it has been shown by a large number of contributions that explain why the United States is a welfare

⁵² See Douglas (1936:41) and Historical Statistics (Statistics Canada) for estimates/proxies of the incidence of unemployment at the state/provincial level in both countries.

laggard⁵³. But the Canadian experience points to the existence of other factors that may lead the units of a federation to alter the institutional design and renounce, through an amendment, their constitutional veto capacity on a national program for unemployment insurance. On the other hand, given the magnitude of the Depression, one could see the Canadian response as the natural one: such a shock must necessarily lead to pooling resources. Then why did the United States take a different route?

The argument developed in this dissertation points to a number of factors that determine the scope of risk sharing between regions and eventually condition the institutional design of redistribution. If indeed the scope of risk sharing between regions determines the institutional design of redistribution (H4) these factors should play an important role in explaining the differences between the US and the Canadian experience. Among them, according to H5, interregional mobility is said to provoke an increase in the levels of risk sharing and hence make a centralized system preferable. Again, if the argument holds, this factor should also account, if only partially, for the fact that unemployment insurance is a federal program in Canada and a state level one in the USA. The remainder of this section assesses to what extent our model helps accounting for the differences between the two North-American experiences.

The key elements identified in the theoretical model were λ , i.e., the share of dependent population of each territorial unit, σ , i.e., the incidence of individual labor market related risks and, finally, S , i.e. the scope of regional specific shocks. From our account of the Canadian and US experiences, it is clear that the

⁵³ See for all Quadagno (1994) and Noble (1997). Incidentally the consideration of the USA as a welfare laggard must be treated with caution. This is label only applicable to the second half of the twentieth century. Lindert (1994) has made estimates of the extent of redistributive social spending for 1910 and 1930, coming to conclude that Continental Europe cannot be said to stand out in the First Half of the twentieth century. For the early developments in USA social policy and a historical analysis of its distinctive programs, see Skocpol (1992).

territorial distribution of λ follows a similar pattern in both countries. It is true that the regional incidence of unemployment is unbalanced (which is to say that not all states/provinces have identical values of λ), but it is equally true that this is the case in both countries. Therefore λ can hardly help us understand the differences in the outcomes of interest.

The story is rather different regarding σ . Recall that in both cases the provincial elites had the institutional capacity to prevent the federal government from launching any program potentially disruptive of their specific political economy. The Canadian provinces could have blocked the amendment of the British North America Act. In the case of the USA Southern representatives enjoyed a privileged position in both the House and the Senate. The lack of political rights of the black majority of the labor force generated an effective single party dominance of the Democratic Party (Key 1949; Kousser 1974; Alston and Ferrie:1999). This, in turn, gained them seniority in both houses. And with seniority came the capacity to determine the agenda in the relevant Committees, which implied a huge shaping power of any legislation under consideration.

However, only in the United States were the incentives of the units strong enough to block from the very beginning a national program of unemployment insurance. Such a program could hollow out the most fundamental grounds of the social and economic dominance of the Southern elites. Let me briefly discuss the key aspects of such dominance to unpack the structure of incentives of the representatives of the South.

During the late XIX and early XX centuries, racism increased in virulence in the context of the "unfinished democracy" (Quadagno 1994) at work in the Southern states. The Ku Klux Klan was spreading into the plantation areas and many black families found it rational to migrate to the urban areas either in the North or in the West (Steckel 1983). Gradually planters were most concerned about the assurance of an adequate supply of labor. According to Alston and Ferrie (1999: 17) "some planters chose a new course-turning to honesty, fair dealing and a host of

nonwage aspects of their relationship with their workers as additional margins for competition". Over time a system of mutual obligations emerged and consolidated. "By the early twentieth century planters had come to act as intermediaries between their workers and much of the outside world. Planters exercised control over the credit extended to their workers, but they were also willing to stand good for their worker's debts with local merchants. [...] Planters reported significant outlays for the payment of doctor's bills, the establishment and maintenance of schools and churches, and various unspecified forms of entertainment. And planters commonly paid legal fines incurred by workers and served as parole sponsors for their workers" (Alston and Ferrie 1999: 20). In return, workers, especially tenants and croppers, "were expected not only to work hard in the fields but to display deference toward their landlords"(ibid.: 25). Such basic exchange underlies what economic historians conventionally refer to as Southern Paternalism.

Its logic was compelling. Tenants and croppers gained protection and side benefits for their families. From the planters point of view an adequate supply of low-cost labor was guaranteed. The longer the duration of the exchange the bigger the levels of mutual dependency and hence the larger the opportunity cost of moving away for croppers and tenants. Put differently paternalism reduced mobility and hence maintained the specificity of the planters' system of production and social dominance. These in turn had incentives to keep "looking after " their tenants as well as to prevent any external input potentially disruptive of this particular relation.

The key for the system to work was the mutual dependency between planters and tenants/croppers. Hence when, in the context of the Depression, several federal relief and insurance programs (including unemployment insurance) were under consideration, planters faced the following dilemma : " How could it accept the government assistance that so many plantation owners desperately needed to sustain their labor force until prosperity's return without allowing the government to replace them as the

benefactors of their workers?" (Alston and Ferrie 1999: 49). Direct federal provision of relief, FERA, (Williams 1939) and insurance in favor of croppers and tenants would have undermined their dependence upon the planters and, eventually, led to the ultimate crisis of paternalism. Hence the trade-off between federal welfare and the protection of paternalism. And hence the final choice of the Southern elites: to press for the preservation of "states rights" in the management of welfare provision as well as, more specifically, for the successful exclusion of their workers from any type of insurance program, including old-age and unemployment. Given the institutional position of Southern representatives in the House and the Senate, "agricultural labor and domestic services were excluded [from unemployment insurance] as a matter of course" (Witte 1962: 132)

The structure of incentives was different for the Canadian provinces. Although there were different degrees of specialization among them there was nothing alike the Southern American states in terms of the specificity of production and the peculiar internal equilibrium of the system of labor, social and political relations. In brief, even in the context of the Depression, the labor market specificities of the American States (including not only the Southern ones, but also some Northern ones like Wisconsin) reduced the levels of risk sharing and hence made decentralization the most likely institutional design for unemployment insurance. In terms of our model σ was higher in the United States than it was in Canada. So it can be reasonably argued that the analysis of these two experiences confirms the idea that the scope of risk sharing determines the institutional design of redistribution. Therefore the case study comes to reinforce, in a much more explicit and direct way, the empirical support of H4 provided by the quantitative analysis.

Yet this is not the whole story. In order to fully understand where the differences between the Canadian and the American responses stem from, it is also necessary to look at their differential patterns of interregional mobility. Our historical accounts have shown how, after WWI, Canada and the United

States took opposite paths on the issue of immigration. While the United States increasingly made a more selective policy, Canadian borders were open to large amounts of unskilled labor, let in to work primarily in farming and extractive industries. These immigrants were from the beginning a very mobile sector of the Canadian labor force in that their familiar and cultural ties did not belong to any particular province. As a result, when the Depression affected both countries, the transients were a Canadian peculiarity. They moved across jobs and provinces between seasons, operating a multiplier effect of the social consequences of the Depression. Transients (over 100000 people in total) were the most visible sign of unemployment.

It was mentioned above that the Depression was regionally unbalanced in both Canada and the United States. In the former case, the Western provinces were clearly worse off: they had been hit not only by the general drop in consumption inherent to the Depression but also by a sequence of heavy droughts. By moving eastwards transients passed the effects of all these adverse shocks to the more industrialized provinces of the country. For instance, according to Struthers (1983:44-71), transients from the West constituted 40% of the total demand for relief only in the city of Toronto. In so doing they made the incidence of the Depression to be territorially much more balanced. In terms of our model provinces became much closer in their value of λ . Likewise, transients also contributed to a reduction in the gap between provinces in the value of σ : being mobile across provinces between seasons, transients and their associated risks became a shared sector of the labor force. Put shortly, transients did contribute to the increase of the levels of risk sharing between provinces and, thus, to making centralization the preferred institutional design for unemployment insurance. Meanwhile, no such group of mobile unskilled workers was formed and, as analyzed above, Southern paternalism worked purposefully to prevent inter-state mobility of agricultural workers.

The centrality of interterritorial mobility to understand the structure of incentives underlying different institutional designs is

further illustrated by the evolution over time of American social policy. When as a consequence of the WWII the Western American states demanded more labor supply, the Southern states managed to pass the Bracero program (1942-1964), a policy that arranged the immigration of temporary Mexican laborers for that purpose. Thereby they succeeded once again in preventing an external influence to undermine the dependence of their croppers and tenants (Alston and Ferrie 1999: 99-119). Over the years Southern paternalism would disappear because of technical change and mechanization. Only then African-Americans became more mobile entering the national political economy, gaining civil and political rights. According to Quadagno (1994: 24-25), in 1940 77 % of African Americans lived in the South; by 1970 only 53% still did. [...] The presence of lack migrants in northern cities moved racial inequality from the periphery to the center of national politics". Again mobility increased risk sharing, eventually contributing to a major step forward in the development of the American welfare state, Lindon Johnson's War on Poverty and Equal Opportunity Act (1964). Only then an attempt could be made to extend social rights to African Americans and "eliminate the barriers to equality of opportunity the New Deal had created" (Quadagno 1994: p.30-31).

Shortly put, the comparative analysis of the Canadian and American responses to unemployment during the Great Depression does indeed support the hypothesis that inter-territorial mobility increases the levels of risk sharing and, eventually, facilitates the choice of a centralized design for redistribution (H5).

Finally, a third factor accounting for the different strategies adopted by the two North-American federations must be mentioned: the beginning of World War II. When Britain declared war with Germany, it provoked yet another external shock to Canadian provinces, a shock of its own, independent both from the structure of Canadian federalism and from the Depression. Our review of the Canadian experience has actually shown that, in fact, Ontario and Alberta only withdrew their objections to the

amendment of the British North America Act on the basis of the new cooperation demanded by the War. No such additional shock, common to all units, took place in the United States during the discussions of the Social Security Act.

To conclude, it can be argued that the model developed in this thesis identifies the relevant factors that account for the strategies adopted in Canada and the United States as to the territorial design of their respective unemployment insurance programs. While in Canada the transients and the War together generated a level of risk sharing high enough to overcome the differences between provincial labor markets ($S_{\text{war}} + S_{\text{Depression}} * M\lambda^{54} > \sigma$), the extreme specificity of Southern American states was too strong to be surpassed by the pooling of resources demanded by the Depression ($S_{\text{Depression}} * M\lambda < \sigma$).

6.4.- Summary

This chapter has developed an empirical analysis of the relation between the scope of risk sharing between regions and the territorial design of redistribution. The analysis has unfolded in two steps.

First, I have presented a quantitative analysis where the argument that the territorial design of redistribution depends upon the scope of risk sharing (H4) has been operationalized as the "policy differential hypothesis". That is to say that decentralization should affect policies according to the level of territorial concentration of the risks these policies cope with. The statistical associations found on a sample of OECD countries reject the conventional view on the relation between decentralization and redistribution and offer support to Hypothesis 4.

In a second step, in order to overcome the numerous limitations inherent to the quantitative analysis, I have carried out

⁵⁴ M stands for levels of interterritorial mobility. As argued in the model, it relates to λ .

a comparative analysis of the policy responses to the Great Depression in Canada and the United States. While the statistical analyses have confirmed that the territorial concentration of risks varies between policies, it is also conceivable that one given policy is designed in the context of two different risks structures. Thus, it is also possible to test our argument exploring differences within the same policy. I have concentrated on Unemployment Insurance. As long as the difference in the policy design across countries can be traced back to differences in terms of risk sharing between units, the leading hypothesis of the chapter would hold. The results of the historical analysis do suggest that this is the case.

The historical study has also facilitated the test of H5, namely the idea that inter-territorial mobility boosts up risk sharing between regions and facilitates centralization. The conclusions of the analysis equally support the implications of our model as to the working of inter-territorial mobility within the relation between decentralization and income inequality. Mobility is clearly not a universal opportunity and hence it is not important because it necessarily prevents redistribution (Peterson and Rom 1990). Rather, mobility is selective and linked to labor market skills. If it is salient, it is because it generates incentives to change the institutional design of redistribution.

Finally, the comparative study of the design of Unemployment Insurance programs in Canada and the United States has yet another implication. Namely, it offers additional support to the idea, directly addressed in the previous chapter, that the allocation to different levels of government of the political capacity to redistribute is, to a large extent, a function of the territorial structure of inequality (H3).

APPENDIX 6.1.

Table A.1. The Policy Differential Hypothesis: Overall Social Spending

	MODEL A		MODEL B		MODEL C	
	A.1	A.2	B.1	B.2	C.1	C.2
Old Age Dependency	32.908 *** (11.0807)	27.2492*** (8.9080)	35.533*** (10.74047)	26.1761*** (8.6547)	43.2775*** (8.6700)	29.3898*** (8.2159)
Unemployment	0.55184 *** (0.14080)	0.567832*** (0.138153)	0.69708*** (0.109172)	0.68171*** (0.097685)	0.74705*** (0.094205)	0.69864*** (0.090255)
Decentralization	-9.736 *** (4.1260)	-6.7885*** (2.5465)	-17.58713*** (5.62329)	-14.7897*** (4.1562)	-21.07665*** (5.82332)	-20.0237*** (5.31923)
Government Ideology	-0.02728*** (0.009203)	-0.023998*** (0.008284)	-0.008084* (0.004465)	-0.00669* (0.003843)	-0.09144*** (0.003972)	-0.007847** (0.003437)
Turnout	0.30284*** (0.043195)	0.24647*** (0.0038909)	0.051759* (0.030548)	0.02886 (0.0252621)	0.044752* (0.02714)	0.047690*** (0.023401)
Market Income Inequality	2.6932 (1.36429)	-0.90032 (1.98682)	-8.684 (11.7166)	-5.822786 (9.4650)	-12.37469 (9.310812)	-6.2276 (8.4178)
R-Squared (N)	0.5137 (183)	0.5130 (211)	0.8006 (183)	0.7983 (211)	0.9269 (183)	0.9223 (211)

Model A.-Random Effects. OLS with Panel corrected standard errors

Model B.- Similar to A with an assumed common ar1 across panels.

Model C.- Similar to A with an assumed panel specific ar1.

All models include a constant. For all three types of models, version 1 takes as dependent variable WELFDEC (share of regional social expenditure over total social expenditure) while version 2 estimates the determinants of REGTOTRE (share of regional revenues over total).

Table A.2. The Policy Differential Hypothesis: PUBLIC PENSIONS

	MODEL A		MODEL B		MODEL C	
	A.1	A.2	B.1	B.2	C.1	C.2
Old Age Dependency	31.711 (2.57)	30.796 (1.8976)	15.512 (2.706)	16.133 (2.4286)	17.517 (2.4764)	9.7426 (2.6255)
Unemployment						
Decentralization	0.49535 (1.1528)	-0.088795 (0.78147)	-2.484 (1.6597)	-1.9735 (1.2500)	-2.0214 (1.3572)	-4.9748 (3.06258)
Government Ideology	0.005144 (0.0024)	-0.00024 (0.02551)	-0.004724 (0.00112)	-0.00079 (0.0011)	-0.001721 (0.000098)	-0.000981 (0.000938)
Turnout	-0.00805 (0.01011)	-0.003952 (0.01014)	-0.00076 (0.00384)	-0.000151 (0.007692)	-0.00543 (0.00688)	0.30284 (0.04319)
Market Income Inequality	-1.895 (3.5631)	3.43264 (2.664)	4.7227 (2.70904)	6.40317 (2.80876)	1.7124 (2.4430)	2.6936 (1.6521)
R-Squared (N)	0.6369 (177)	0.6369 (205)	0.6715 (177)	0.6163 (205)	0.8547 (177)	0.8290 (205)

Model A.-Random Effects. OLS with Panel corrected standard errors

Model B.- Similar to A with an assumed common ar1 across panels.

Model C.- Similar to A with an assumed panel specific ar1.

All models include a constant. For all three types of models, version 1 takes as dependent variable WELFDEC (share of regional social expenditure over total social expenditure) while version 2 estimates the determinants of REGTOTRE (share of regional revenues over total).

Table A.3. The Policy Differential Hypothesis: UNEMPLOYMENT BENEFITS AS A % of GDP

	MODEL A		MODEL B		MODEL C	
	A.1	A.2	B.1	B.2	C.1	C.2
Old Age Dependency	0.23856*** (0.016099)	0.2134*** (0.01532)	0.2240*** (0.01528)	0.20663*** (0.015583)	0.23159*** (0.01224)	0.22631*** (0.01123)
Unemployment	-1.5753*** (0.431013)	-1.05311*** (0.29069)	-2.6127*** (0.84538)	-1.6481*** (0.526045)	-1.2516** (0.5336)	-1.621323*** (0.360693)
Decentralization	0.0008807 (0.001755)	0.002216 (0.001684)	-0.000287 (0.00088)	0.000058 (0.0009637)	-0.000266 (0.0006025)	-0.0001505 (0.0005789)
Government Ideology	0.031288*** (0.006007)	0.02285*** (0.005754)	0.002151 (0.004305)	0.004815 (0.004126)	0.006106 (0.00399)	0.0079842** (0.0037384)
Turnout	-1.23184*** (0.6942)	-3.5955** (1.5769)	-2.8047 * (1.60431)	-2.93733* (1.622261)	-3.6166*** (1.19524)	-4.20073*** (0.972239)
Market Income Inequality						
R-Squared (N)	0.46941 (182)	0.4550 (210)	0.5404 (182)	0.4866 (210)	0.7383 (182)	0.8488 (210)

Model A.-Random Effects. OLS with Panel corrected standard errors

Model B.- Similar to A with an assumed common ar1 across panels.

Model C.- Similar to A with an assumed panel specific ar1.

All models include a constant. For all three types of models, version 1 takes as dependent variable WELFDEC (share of regional social expenditure over total social expenditure) while version 2 estimates the determinants of REGTOTRE (share of regional revenues over total).

Table A.4. The Policy Differential Hypothesis: UNEMPLOYMENT REPLACEMENT RATES

	MODEL A		MODEL B		MODEL C	
	A.1	A.2	B.1	B.2	C.1	C.2
Unemployment	0.0094732*** (0.002737)	0.009043*** (0.002383)	0.003527** (0.00152)	0.0034469** (0.001393)	0.004066*** (0.0012781)	0.00616*** (0.001184)
Decentralization	-0.241758*** (0.05407)	-0.117716*** (0.03771)	-0.290310*** (0.098319)	-0.18637*** (0.063422)	-0.60684*** (0.1345)	-0.244507*** (0.071550)
Government Ideology	0.000632 (0.0002323)	0.0001043 (0.000221)	0.0000162 (0.000741)	-0.000186 (0.000822)	-0.000460 (0.0006082)	-0.0000265 (0.0000649)
Turnout	0.0024096*** (0.0007738)	0.001807** (0.0007798)	0.0001739 (0.000280)	0.0003547 (0.0002877)	-0.00102 (0.002432)	0.002564** (0.0011457)
Market Income Inequality	-0.89303*** (0.21290)	-1.22028*** (0.2391515)	-0.360869** (0.183522)	-0.18802 (0.19292)	-0.25998** (0.11546)	-0.51273*** (0.15283)
R-Squared (N)	0.2012 (183)	0.2389 (211)	0.4382 (183)	0.3163 (211)	0.759 (183)	0.7655 (211)

Model A.-Random Effects. OLS with Panel corrected standard errors

Model B.- Similar to A with an assumed common ar1 across panels.

Model C.- Similar to A with an assumed panel specific ar1.

All models include a constant. For all three types of models, version 1 takes as dependent variable WELFDEC (share of regional social expenditure over total social expenditure) while version 2 estimates the determinants of REGTOTRE (share of regional revenues over total).

Table A.5. The Policy Differential Hypothesis: SOCIAL ASSISTANCE

	MODEL A		MODEL B		MODEL C	
	A.1	A.2	B.1	B.2	C.1	C.2
Decentralization	5.3496*** (0.53516)	3.12912*** (0.4551)	4.01007*** (1.1786)	2.50391*** (0.6795)	-1.650922 (1.54124)	0.47445 (0.6161206)
Government Ideology	0.0008802 (0.000945)	0.00200 * (0.001063)	-0.000901 (0.000404)	-0.000027 (0.002547)	-0.005755 (0.003524)	-0.000137 (0.000356)
Turnout	0.023839*** (0.003741)	0.020281*** (0.004320)	0.00291 (0.001972)	0.003352 (0.00254)	0.001441 (0.0015248)	0.0021023 (0.001568)
Market Income Inequality	-0.11832 (0.94187)	-0.650631 (0.8660643)	1.4076 (0.892870)	0.79389 (0.775147)	1.44875 (0.946287)	0.87096 (0.7073)
R-Squared (N)	0.5203 (168)	0.3802 (195)	0.1966 (168)	0.1802 (195)	0.0303 (168)	0.0776 (195)

Model A.-Random Effects. OLS with Panel corrected standard errors

Model B.- Similar to A with an assumed common ar1 across panels.

Model C.- Similar to A with an assumed panel specific ar1.

All models include a constant. For all three types of models, version 1 takes as dependent variable WELFDEC (share of regional social expenditure over total social expenditure) while version 2 estimates the determinants of REGTOTRE (share of regional revenues over total).

Table A.6. The Policy Differential Hypothesis: INCOME TAXATION

	MODEL A		MODEL B		MODEL C	
	A.1	A.2	B.1	B.2	C.1	C.2
Old Age Dependency	59.5042*** (16.51)	33.678** (12.953)	28.8046*** (12.563)	27.41077** (10.6774)	39.3556*** (12.1624)	24.7979*** (10.6089)
Unemployment	0.2620289 (0.19524)	0.24383 (0.1865)	0.02495 (0.1251)	0.018431 (0.54874)	0.013308 (0.111632)	0.030486 (0.09965841)
Decentralization	-18.7626*** (5.98555)	-21.0249*** (3.8335)	-17.7546*** (4.6987)	-30.9855*** (6.1470)	-38.156*** (8.8376)	-45.9908*** (7.37619)
Government Ideology	-0.057471*** (0.014542)	-0.5377*** (0.01428)	-0.074991* (0.0042587)	-0.0063552* (0.003774)	-0.0053816 (0.00418)	-0.006049* (0.00366)
Turnout	0.34603*** (0.07031)	0.28780*** (0.06547)	0.0579786 (0.036464)	0.045071 (0.027431)	0.093297** (0.03185)	0.062590*** (0.02455)
Market Income Inequality	9.33246 (21.56596)	20.6134 (17.99)	8.854909 (14.8773)	15.36528 (12.1233)	2.463471 (12.3264)	18.98743* (10.979)
R-Squared (N)	0.5037 (183)	0.4237 (211)	0.7477 (183)	0.718 (211)	0.6468 (183)	0.6717(211)

Model A.-Random Effects. OLS with Panel corrected standard errors

Model B.- Similar to A with an assumed common ar1 across panels.

Model C.- Similar to A with an assumed panel specific ar1.

All models include a constant. For all three types of models, version 1 takes as dependent variable WELFDEC (share of regional social expenditure over total social expenditure) while version 2 estimates the determinants of REGTOTRE (share of regional revenues over total).

Table A.7. The Policy Differential Hypothesis: CAPITAL TAXATION

	MODEL A		MODEL B		MODEL C	
	A.1	A.2	B.1	B.2	C.1	C.2
Old Age Dependency	-24.842 (17.222)	-4.1340 (14.4409)	-11.1193 (25.3564)	-3.70352 (20.427)	-10.941 (26.006)	-4.7745 (20.3132)
Unemployment	-0.88125*** (0.24902)	-0.7634*** (0.2395)	-0.614902** (0.2795)	-0.6019 ** (0.26315)	-0.51917* (0.27860)	-0.5240** (0.25014)
Decentralization	-7.38089 (8.4568)	1.75138 (5.4953)	-0.38253 (14.29526)	-1.196399 (9.37464)	-1.15024 (18.425)	-4.24385 (10.8349)
Government Ideology	0.049337** (0.01925)	0.409693** (0.018363)	0.01135 (0.01064)	0.00927 (0.0102)	0.014194 (0.01029)	0.012554 (0.00991)
Turnout	0.096678 (0.074715)	0.042812 (0.069469)	-0.12229** (0.0595)	-0.13447** (0.05746)	-0.07254 (0.06304)	-0.09831* (0.05928)
Market Income Inequality	62.0283** (25.3247)	38.9756** (18.4562)	-23.9197 (26.22574)	-18.597 (23.0234)	-17.6305 (29.9053)	-8.6459 (21.2061)
R-Squared (N)	0.1309 (183)	0.1310 (211)	0.5477 (183)	0.5289 (211)	0.783 (183)	0.789 (211)

Model A.-Random Effects. OLS with Panel corrected standard errors

Model B.- Similar to A with an assumed common ar1 across panels.

Model C.- Similar to A with an assumed panel specific ar1. All models include a constant. For all three types of models, version 1 takes as dependent variable WELFDEC (share of regional social expenditure over total social expenditure) while version 2 estimates the determinants of REGTOTRE (share of regional revenues over total).

APPENDIX 6.2.

ASSESSING SIMULTANEITY: UNEMPLOYMENT BENEFITS AS A PERCENTAGE OF GDP AND UNEMPLOYMENT REPLACEMENT RATES

	UNEMPLOYMENT BENEFITS AS A PERCENTAGE OF GDP		UNEMPLOYMENT REPLACEMENT RATES	
	MODEL A	MODEL B	MODEL A	MODEL B
Unemployment	0.238*** (0.020)	0.303*** (0.019)	0.0094*** (0.0030)	0.013*** (0.003)
Decentralization	-1.70** (0.72)	-1.23** (0.523)	-0.239** (0.104)	-0.245** (0.102)
Government Ideology	0.000057 (0.001)	0.00014 (0.0013)	0.000068 (0.00023)	0.00005 (0.00022)
Turnout	0.0300*** (0.0069)	0.022*** (0.0061)	0.0024** (0.0010)	0.0024** (0.0010)
Market Income Inequality	-1.3008*** (0.096)	-1.943** (0.87)	-0.890*** (0.289)	-0.871*** (0.283)
R-Squared (N)	0.53	0.48	0.22	0.20

Model A.- OLS Path Analysis in Structured Form

Model B.- GLS. Seemingly Unrelated Regressions.

In all models, Unemployment is restricted to be a function of the level of Civilian Government Employment, the policies in question themselves and Deindustrialization.

CHAPTER 7

CONCLUSIONS: DECENTRALIZATION AND THE REPRODUCTION OF INEQUALITY

Even if at the risk of being redundant, the aim of this chapter is to integrate the different pieces of this research into a synthetic answer to the question at the heart of this project: how does the relation between decentralization and income inequality work? Thereafter I will draw some general implications from the results and discuss their scope and limitations.

The answer at the core of this study can be summarized in the following thesis. The relation between decentralization and inequality works both ways: if an association between decentralization and inequality is observable, it is so not only because decentralization alters the distribution of income, but also because there are features of the territorial structure of inequality that facilitate the choice of a particular institutional design. In other words, decentralization is endogenous to the structure of inequality. Each of these sequences is analyzable on its own, but both of them interact as part of the engine driving the dynamics of the relation, namely the political process by which the institutional choice about the territorial design of redistribution is made. The very existence of such a political process proves not only that inequality is indeed multidimensional, but also that the different

dimensions of inequality affect each other. In this sense the bulk of the relation between decentralization and income inequality can be seen, in the light of the conclusions obtained in previous chapters, as a process by which the territorial structure of inequality (dimension 1) affects the distribution of interpersonal income (dimension 2) via the political process by which the allocation of the capacity to redistribute is decided.

Nonetheless, the existence of this political process only makes sense because the final allocation of this capacity matters for the income distribution. Indeed, Chapter 4 has proved that the distributive consequences of a change from a national to a decentralized system are contingent upon the pre-existing structure of inequality. Depending on how the pre-existing structure of inequality and the type of institutional change interact the distributive consequences could be any. The centrality of the political process linking dimensions 1 and 2 lies precisely in that not all institutional changes are equally feasible. Our study shows that the more they disrupt the existing structure of inequality the less likely they are to take place.

To sum up, the relation between decentralization and inequality can be decomposed in the following terms: (1) The decentralization of redistribution matters for the distribution of inter-personal income. (2) Precisely because of that, relevant political actors have an expectation as to the distributive consequences of a number of alternative institutional designs. This opens a political process by which the structure of inequality shapes the politics of institutional choice, i.e., the decision about the allocation of the capacity to perform redistribution across different levels of political authority. (3) The institutional design reproduces to some extent the structure of inequality. Once it has been adopted, the relation evolves. In what follows, I shall substantiate how the different sections of this study have contributed to build up an argument according to which the relation between decentralization and inequality in the OECD can be seen as a process by which inequality reproduces itself through the politics of institutional choice.

7.1.- From Political Institutions to Distributive Outcomes: how does Decentralization matter for the Distribution of Income?

Decentralization matters for inequality because it activates its underlying territorial structure. More specifically, this dissertation has shown that decentralization triggers two effects identified by our theoretical argument, namely the "between units" effect and the "diversification" effect. In order to isolate theoretically these two effects it has been necessary to simplify as much as possible all the other elements involved in the politics of redistribution and inequality. I do so by using the median voter model of redistribution as the point of departure (Chapter 2). This model offers an extreme simplification of the process of redistribution by concluding that the preferred level of redistribution in a society is a function of the distance (measured as a ratio) between the income of the median voter and the average income of the society. The wider the distance (i.e. the closer the ratio gets to 0) the higher the preferred level of redistribution. On this basis the two effects of decentralization are analytically distinguishable. The "between units" effect occurs when hypothetically the units of a federation have the same median to average income ratio but they differ in their average income. Obviously, the ratio of the union as a whole would differ from the one in either of the regions. In the context of the median voter theory this implies a change in the levels of redistribution and subsequently a change in the distribution of income. However, if the between levels effect is the only at work regions do not vary in the levels of redistribution they provide regardless of the institutional framework. In turn, the "diversification effect" would occur when regions differ from the union with respect to both their average income and the median to average income ratio. In this case the union level changes and there are differences between units. The combination of the two constitutes the overall effect of any institutional change from centralization to decentralization (or vice versa) on the distribution of income.

In which direction does this effect work? The conventional view blames decentralization as an inherently inegalitarian institution. As discussed in Chapters 1 and 6, this conception is rooted on a limited theoretical analysis of the relation and, moreover, built upon standard regression analyses in which the effect of decentralization is constrained to be exogenous. The empirical support received by the “*endogeneity hypothesis*” (section 4.2) shows that to a large extent the conventional analyses of the distributive effects of decentralization and their implications are seriously affected by a problem of mis-specification. This dissertation has offered an interpretation based on rather different theoretical and methodological foundations.

Briefly put, it follows from the argument that there is no reason to believe that decentralization always leads to higher levels of inequality. The distributive consequences of a change from centralization to decentralization (or viceversa) are, according to the model (section 2.1 and 4.1), contingent upon the pre-existing structure of inequality. The only clear-cut expectation about these effects concerns their magnitude; if it depends on the above mentioned factors, it is almost obvious that the larger and more diverse the Union is, the bigger the scope of the “between units” and the “diversification” effects should be.

The empirical analysis of the idea that these two effects make the distributive consequences of decentralization contingent upon the pre-existing structure of inequality (H2) required to construct a counter-factual case. Put differently, the isolation of an exogenous effect of decentralization on inequality can only be accomplished if everything but the territorial design of redistribution remains unaltered. In turn, for the fulfilment of this condition it was necessary, among other things, to prevent the second order effects of the intervention of interest (in this case the institutional change) from feeding back to the distribution of income and, thereby, from affecting our estimates. These methodological issues have been dealt with in Chapter 3, where careful consideration was given to the importance of second order effects in the study of the distributive effects of any intervention. Given their salience, as

illustrated by an empirical study of the determinants of wage and market income inequality in the OECD, two methodological strategies to cope with them are available. The first approach is simple and applicable when approaching the issue with a regression of an indicator of disposable income inequality on a number of its determinants. It consists basically in controlling for a contemporary indicator of market income inequality. However, as argued in section 3.4 and 4.2, this is not enough. The introduction of market income as a regressor controls, additively, for the second order effects of previous redistributive policies. Yet it does not satisfy the cointegration condition. Moreover, it sticks to a far too aggregative approach if what it is intended is to capture the "between units" and the "diversification" effects of decentralization. Thus, in order to grasp them accurately, micro-simulations were implemented as an alternative methodology to test the expectations derived from the argument.

The comparative analyses carried out for an EU3¹ and a EU13 federation yielded the expected findings. Even though the "between units effect" was not perfectly isolatable, the magnitude of the combination of the two effects was found to be much larger in an EU13 than in an EU3 federation. As predicted, the wider the differences between the units the larger the magnitude of the impact of the institutional change. Moreover, as far as the direction of the effect is concerned, the micro-simulations (section 4.3) do confirm the argument of this dissertation as opposed to the deterministic predictions to be found conventionally in the literature. Indeed, the comparison between the three centralized models of redistribution (namely the EU average, the Danish and

¹ This exercise involved comparing the status quo (current structure of inequality) vis-a-vis several simulated scenarios (or centralized levels of generosity) in two contexts, a union (A or EU3) where the units were as similar as possible in terms of size, average income and welfare system; and second union (B or EU13), where the union was broadened to include units diverging in all three dimensions. In this way it could be assessed the extent to which the distributive consequences of an institutional change depend on the pre-existing structure of inequality.

the Greek-Portuguese ones) shows that the impact for the overall union of an institutional change is more open. Furthermore, a closer scrutiny of the distributive effects for the units allowed us to establish that the direction of the overall effects is the result of an interaction between three factors: (a) the nature of the centralized policy; (b) the distance between the specific centralized system and the design and coverage of the unit's redistributive system; (c) and the specificities of the distribution of income in each of the units. Thus, the empirical analyses presented in Chapter 4 confirm that by itself decentralization does not necessarily generate more inequality for the final outcome is open to all possible combinations between the three above mentioned factors. In other words, exogenously and in principle, the distributive consequences of an institutional reallocation of the political power to tax and transfer could work in any direction. However, as the simulation of a centralized Europe with Greek levels of generosity reflects, some scenarios are politically more feasible than others. That is to say that some combinations of institutional designs and distributive outcomes are more likely to emerge than others. Why? Because there is a political process by which the structure of inequality shapes the politics of institutional choice.

7.2.- Risk sharing and Institutional choice: Dimensions and Reproduction of Inequality

Actors facing the choice of a particular design for redistribution have an expectation about the distributive consequences of alternative designs. This fact transforms the choice of the degree of (de)centralization into a contention about redistribution itself. The model presented in Chapter 2 has identified a number of factors linking, for every territorial unit, the existing structure of inequality to the actor's preferences about the institutional design of redistribution. These are the unit's average income (y), the profile of the unit's dependent population (λ), the incidence by unit of individual labor market specific risks (σ) and,

finally, the exposure of the union's components to the external shocks (S). Each of these factors is a dimension in the unit's structure of inequality while the combination of all of them determines the scope of risk sharing between the units, which is to say the units and the union 's structure of incentives, and eventually the institutional design to be adopted.

Herein lies the driving mechanism of the second dimension of the relation between decentralization and income inequality. When the combination of these four elements makes risks similar across subnational units, the emergence of a centralized design is the likely outcome. If, on the contrary, as a result of the combination of these four factors subnational units differ substantially in the nature and magnitude of the social problems and risks they are faced with, decentralization is the expected outcome of the process. In between, in situations of partial risk sharing, a combination of inter-regional transfers with a decentralized design is to be expected. As it stands the argument has two main implications.

First, it follows from the very existence of this dimension that, empirically, decentralization should be found to be a function of inequality (H3), even after handling the issue of endogeneity in the specifications. The findings obtained at several stages of the empirical work of this dissertation support this case. Although it was carried out as part of the empirical analysis of the distributive consequences of decentralization (section 4.2), the confirmation of the "endogeneity hypothesis" (H1) pointed to the existence of a hidden dimension in the first place. However, the measurement of inequality used in these analyses was not the most appropriate one in that it was an indicator of inter-personal inequality (Gini coefficient) rather than an indicator able to grasp directly the territorial structure of inequality. Hence the need to test whether or not inequality drives fiscal decentralization introducing alternative measurements. Chapter 5 presented several specifications where endogeneity is taken into account in several ways and the structure of inequality is captured using the between groups component of the Theil Index, an indicator that specifically measures the

distance in terms of income among the regions/units of OECD nations. The results were generally found to be independent either from the indicator of inequality chosen or from the specification adopted, yielding a robust conclusion: the wider the distance between the unit's income structures, the larger the levels of fiscal decentralization. Shortly put, the quantitative analyses confirmed the existence of a causal link, generally overlooked so far, from distributive outcomes to political institutions. Furthermore, such link has also been highlighted by the two in depth case studies included in the dissertation. An exogenous change in the structure of inequality led to a change in the preferences of the constituent units and eventually to an adjustment in the institutional design of redistribution both in Germany after the Re-unification (1989-1990) and in North America after the Great Depression.

The second implication concerns the relation between decentralization and redistribution. Relying upon the idea that decentralization facilitates veto powers for businesses and conservative politicians to block redistribution, previous contributions have assumed that the inverse relation between decentralization and redistribution functions similarly across welfare state policies. Accordingly, the use of an indicator of total welfare effort became the standard practice. The notion of risk sharing as the driving force of the relation between decentralization, redistribution and inequality introduces a fundamentally different perspective: decentralization should be associated with redistribution only in those policy realms in which the risks to be faced are likely to be territorialized (H4). Alternatively, there is no reason why decentralization should be associated with universal, age-related risks. Moreover, the direction of the relation may vary across policy fields for it is conceivable that in those policy fields dealing with locally distributed welfare dependencies and social risks a large share of the effort ends up decentralized. In this sense, the use of an indicator of total welfare effort (and what it implies) simply obscures the understanding of the relation. The results of the disaggregated analysis of welfare spending (section 6.2) clearly

support the risk sharing approach. Consistent with the fact that no pensions system is actually decentralized, no association is found between the levels of decentralization and the effort OECD nations put on public pensions. Alternatively, decentralization matters, in different ways, for labor market and social assistance programs. In short, the results reject the conventional understanding about the impact of decentralization on redistribution and inequality. In this respect, the established lack of association between decentralization and capital taxation is particularly noteworthy for it implies that the race to the bottom between units within federal systems must be very slow indeed.

In brief, the quantitative analysis of both the impact of inequality on the levels of fiscal decentralization and the policy differential hypothesis (H4) clearly points out that there is a hidden dimension in the relation between decentralization and income inequality and, equally, that this dimension appears to be ruled by the scope of risk sharing between the units. Moreover, on the basis of the results, it can be concluded that both processes stand out as general empirical phenomena rather than country-specific events. Nonetheless, in order to substantiate empirically an alternative interpretation, it was necessary to go beyond these findings and investigate how each of the four factors mentioned above adds to the link between the structure of inequality and the territorial design of redistribution.

Within every union the structure of risks differs by income. For a start the magnitude of the impact of the between groups share of the Theil index on the levels of decentralization of redistribution (Graphs 5.1 to 5.8) taps the extent to which regional income differences reduce the scope of risk sharing and ultimately conform to the institutional design². The argument has clearly shown that while poor regions must trade-off autonomy for access

² The strategy adopted in the European Union of using the Structural Funds to secure a minimum degree of convergence in the average income of the country members provides an indication of the awareness of the EU nations and the EU government itself of the potential risks inherent to the existence of income differences beyond a certain level.

to some of the wealthier regions' resources, the latter face no such dilemma. In principle they have no incentive to centralize. The study of the German and North American experiences contributes further to illustrate the point. In the case of the German Länderfinanzausgleich, Bavaria and Baden Wuttemberg had been contesting their relative position as net contributors to the system well before the Reunification. Similarly, Quebec and Alberta resisted every attempt to centralize unemployment insurance until the late 1930s, on the grounds that they would become the cost bearers of the system. Meanwhile, both the Eastern Länder in Germany and the Canadian Western provinces, badly hit by the Depression, were eager to enter the umbrella of a centralized system.

However, if the analysis focused exclusively on inter-regional income differences it would not be possible to understand why, for instance, the rich Canadian provinces accepted a centralized system after all. Nor would it be easy to account for the reasons underlying the Southern American states' fierce opposition to federal programs that, in pure income terms, would have meant a significant cash inflow. The full understanding of these processes and, more generally, of the impact of the structure of inequality on the territorial structure of inequality required the inclusion in the analysis of the three other elements included in the model, namely the profile of the unit's dependent population (λ), the incidence by unit of individual labor market specific risks (σ) and, finally, the exposure of the union's components to the external shocks (S).

External shocks pool risks. They boost the demand for an institutional change in the direction of an attendant pooling of resources, i.e., in the direction of centralization. The Wiedervereinigung implied an exogenous change in the German structure of inequality. Likewise, the Great Depression hit, albeit to different degrees, all territorial units both in Canada and the United States. In these two experiences the demand for a centralized response grew after the shock: German Eastern Länder wanted to be integrated into the existing Finanzausgleichsystem of inter-regional transfers. In turn, Canadian western provinces

wanted Ottawa to assume the full cost of unemployment relief and insurance. Likewise, American labor organizations pushed for a permanent federal response to the problem of unemployment. In fact, several proposals along these lines were submitted to the House. In all three cases, an increase in the value of S led to growing demands for expanding and centralizing the distribution of resources.

Yet the institutional responses were different in each of these experiences. In the German case an effort to pool resources was indeed made with the German Unity Fund but the *Western Länder* managed to change the decision making-procedures of the financial constitution so that they could maintain their relative position within the Union. Alternatively, whereas centralization was the Canadian response to the Depression, the American states kept full control of the design of Redistribution adopted in the Social Security Act. The origin of these differences is to be found in the two other factors at the core of the risk sharing approach: (1) the differences among these countries in terms of the intensity of labor market specificities of their constituent units (σ); and (2), as elaborated in the dynamic component of the argument, the differential role played in each of these three experiences by the patterns of inter-regional mobility and their impact on the units profile of dependent population (λ).

These two analytical tools shed light on the nature of the paradoxical continuity of the German *Finanzausgleichsystem*, after the sudden entry of six significantly poorer units. After Reunification, *Western Länder* suffered a huge regional specific shock (S), while at the same time the distance among *Länder* in terms of labor market structures (σ) and profile of dependent population (λ) increased dramatically. The former required to pool resources and make a huge economic effort, which was materialized in the German Unity Fund and the Solidarity Pact. The latter account for the specific form of such an effort. *Western Länder* found it rational to make such an effort, among other reasons, to insure themselves against the risk of a massive population inflow. The very possibility of such an inflow altered the risk profile of the

Western Länder illustrating how, consistent with the argument, inter-regional mobility alters the structure of incentives by increasing the levels of risk sharing (H5). But Western Länder also imposed a major condition for the implementation of such an effort, namely that they could keep their relative institutional position over inter-territorial fiscal issues by reforming the allocation of the number of votes to each Land in the Bundesrat. Only after Bavaria, Baden-Württemberg and Nord-Rhein Westfalia ensured their veto capacity over any change in German fiscal federalism could the Solidarity Pact be approved. Furthermore, they also imposed an increase in the levels of fiscal decentralization by increasing the Länder share of the VAT turnover from 37% to 44%. In short, the key to the German case lies in the fact that the shock provoked a sudden increase in the value of three parameters of the model that happen to work in opposite directions (λ , $\sigma=S$). Hence the paradoxical and apparent non reform of the system.

In turn the shape of the American response to the Great Depression has been proved to be the result of the preferences of a particular set of units, the Southern states, to protect the peculiarities of their labor market structure (σ) from external influences. The potential demise of the political economy of paternalism was, for the Southern political elites, a much higher price to pay than the revenues to come from Washington, regardless of their magnitude. Obviously, they managed to protect their specificities because they enjoyed the institutional capacity to do so by controlling the relevant Committees in the House and the Senate. But so did the Canadian provinces for centralizing redistribution required to amend the British North American Act. Likewise, Canadian provinces also differed largely in their regional labor market structures and, furthermore, the Depression hit the more agrarian economies in the West side of the country harder. And even so they renounced to their institutional capacity to block a centralized design of unemployment insurance.

The origin of these differences lies in the differential pattern of inter-regional mobility between units in the two North American

federations (H5). While the estimated 100.000 transients in Canada operated as a sort of multiplier effect across provinces, expanding to the whole nation the unrest of unskilled workers, the whole logic of Southern paternalism was to create a system of mutual dependencies able to prevent tenants and croppers from moving towards the Western and North-Eastern industrialized states. As a result Canadian provinces became closer in terms of both of the profile of their dependent population (λ) and the way in which the Depression affected them. The structure of incentives of Ontario and Quebec changed towards a position less reluctant to embrace a centralized solution. Meanwhile, American states maintained the large distance between them in both respects. In addition, the beginning of World War II at the time of the design of the response to the Depression operated in Canada as a second shock, disabling the few remaining pockets of provincial resistance to pooling resources in a centralized solution. To conclude, in Canada the magnitude of the external shocks was enhanced by inter-territorial mobility, overcoming the inter-provincial disparities in terms of labor market structures ($S_{war} + S_{depression} * M\lambda > \sigma$)³. On the contrary, in the United States the huge gap between the rural and racial South and the industrialized states together with the absence of a phenomenon alike the transients rendered the pooling effect of the Depression insufficient to foster a national solution to the problem of unemployment ($S_{depression} * M\lambda < \sigma$).

The identification of the mechanisms by which the structure of inequality conditions the institutional choice of the territorial design of redistribution closes the analysis of the different sequences of the relation between decentralization and inequality. Taken together the results obtained in the study of each of these sequences illustrate quite clearly not only the multi-dimensional character of inequality but also that such character has important

³ $M\lambda$ stands for the interaction between inter-territorial mobility and the profile of the dependent population in the different units of the federation.

implications for the working of redistributive politics. While the distributive consequences of alternative institutional designs are open, the very emergence of these designs is constrained by the territorial dimension of inequality. In turn, by shaping the choice of the institutional design of redistribution, the territorial dimension of inequality reproduces itself into arrangements that prevent fundamental changes (in either direction) in the design of redistributive policies. In so doing the territorial dimension of inequality is setting limits to radical alterations of the interpersonal distribution of income and therefore it is creating a self-selected sample of observable associations between institutional designs and distributive outcomes.

7.3.- Political Institutions and Social Outcomes: implications of the research

According to Weingast (2002: 661), "the rational approach to institutions divides into two separate levels of analysis. In the first analyst study the effects of institutions. In the second analyst study why institutions take particular forms, why they are needed and why they survive. The first approach takes institutions as exogenous; the second as endogenous". The literature is unbalanced, for the vast majority that is devoted to studying the relation between political institutions and social outcomes follows the first approach. A major implication of this research is that endorsing the second approach also generates payoffs for a better understanding and evaluation of the effects of institutions. Put differently the analytical divide between origins and effects may mislead the conclusions about the distributive consequences of particular political institutions. This study of the relationship between decentralization and inequality has shown that the observable associations between institutions and social outcomes may be the result of a process of endogenous self selection (Przeworski et al.: 2000). As stated throughout this research, if an association between decentralization and inequality is observable,

it is so not only because decentralization alters the distribution of income, but also because there are features of the territorial structure of inequality that facilitate the choice of a particular institutional design. In other words inequality, shapes the political choice of specific designs that protect its structure. Thus on the grounds of this dissertation it can be argued that how institutions matter and why is not at all independent from the reasons why these institutions came into existence in the first place. In this sense, in this and potentially in many other cases, sticking to an exogenous approach of the type "*decentralization creates inequality*" leads most certainly to a misconception of the causal link.

In addition, the endorsement of one theoretical approach or the other has further implications for two rather different sets of issues, namely the more normative issue of the desirability of specific institutional designs and the applied issue of how to face comparative research questions on the relation between political institutions and their social and economic environment.

On the more normative issue, it is helpful to recall from Chapter 1 that there are basically two positions available in the literature, namely the social-democratic view for which decentralization is objectionable in that it is a source of inequality by reducing redistribution; and, on the other hand, the liberal view for which decentralization and federalism enhance efficiency and preserve markets by facilitating consumer-citizens to vote with their feet. Although they are at the two extremes of a continuum, both approaches share the assumptions of an exogenous approach: the veto points that constrain redistribution and generate efficiency are taken as given. Furthermore, regarding market actor's behavioral responses, both also assume perfect factor mobility. In short, decentralization appears to be celebrated or condemned on the same grounds. But what if, as shown in this dissertation, the wheels and cogs of the relation between labor markets, political institutions and inequality work somewhat differently?

The integration of an endogenous approach and the development of the risk sharing approach lead to the conclusion

that the fears of the social democrats and the hopes of the liberals are justified only under certain conditions. The scenario on which their claims are based is just one possibility among many others, rather than the only conceivable situation. For people to be mobile and redistribution to be constrained, the labor force should have a similar skills composition across regions while the latter should still have significant differences in their average incomes. Only under these conditions is a race to the bottom likely to emerge. If, alternatively, regions are similar in their average income levels but differ in the degree of specialization of their economic activities, no race to the bottom is likely to emerge for neither capital nor labor are easily mobile. Under these conditions, the weight of the σ component of the model would lead us to adopt a rather different decentralized design, namely one which is perfectly compatible with the development of different redistributive strategies (regardless of their generosity) and, subsequently, does not promote efficiency because of constraining redistribution but rather because it allows to set any level of redistribution without interfering with the regional labor markets. In conclusion, under specific circumstances, decentralization may also reproduce a more egalitarian structure where regions differ in dimensions other than their average income levels. Under these circumstances decentralization neither reproduces nor generates inequality, while it enhances efficiency by allowing for different strategies of redistribution rather than by preventing redistribution itself. To sum up, several long term dynamics scenarios are conceivable. Thus, it is not possible to make normative claims, let alone policy prescriptions, about institutional changes *a priori*, i.e., without knowing the structure of inequality of the actual Union where the institutional change is going to take place.

Finally, the joint consideration of the exogenous and endogenous aspects of the relation between decentralization and inequality generates implications as to the strategy to approach, more generally, the relation between political institutions and social outcomes. The institutionalist turn in comparative political science has been very helpful in preventing a sort of naive

economic approach according to which politics is just a mere reflection of the working of a number of economic factors. They have indeed shown that political institutions make a difference for the output of a wide array of political processes taking place under similar economic circumstances (Pierson and Skocpol 2002:693-722). However, within the exogenous approach to the impact of institutions, the analysis of the relation between institutions and social outcomes may have gone too far in the opposite direction. Indeed, there is a tendency in some of the contributions within the institutionalist literature to assume that institutions matter per se and beyond the social and economic dimensions of reality. Such position can be characterized as a sort of naive institutionalism in that it basically consists of setting a competition, usually in the form of simple correlations or multivariate regressions, between institutional and non-institutional determinants of social outcomes⁴. The lack of a proper theoretical analysis of the foundations of the relation of interest leads not only to misconceive correlations as explanations, but also to the understanding of politics as a self-referential realm.

By unpacking its endogenous dimension, this thesis has undertaken an approach to the relationship between decentralization and inequality that illustrates the benefits, the analytical challenges and the risks of getting to a place somewhere in between the two extremes. Analytically, this dissertation illustrates the need as well as the payoffs of combining formalization, statistical analysis and historical narratives (Laitin 2002: 630-660). The use of a formal model was necessary to establish the mechanisms through which the different dimensions of inequality conformed the relevant actor 's preferences, thereby providing the micro-foundations for an account of the endogenous component of the relation⁵. In so doing, this thesis has joined the

⁴ A representative example of this type of approach applied to the relation between "federalism and social equality" can be found in Lane and Ersson (2000:77-102).

⁵ Incidentally, this is far from being a radically new perspective. In his *An Economic Interpretation of the Constitution of the United States*,

economic turn in comparative politics (Levi 2000:822-44) in order to avoid an over-simplified and institutionally naive account of the relation. At the empirical level this has also required the implementation of rather different methodological tools. The isolation of the exogenous effect of decentralization on inequality called for the use of micro-simulations. In turn the test of the different hypotheses derived from the model combined statistical analysis and historical narratives, for none of these methodologies on its own is able to grasp in full the different steps linking political institutions to social outcomes (Laitin 2002: 630-660).

In establishing how and why decentralization does alter the distribution of income, this dissertation has also departed from economic determinism, i.e., from the idea that political and institutional factors make no difference for social and economic factors. It has also departed from economic determinism by incorporating dimensions other than income itself to the analysis of the political processes of redistribution in decentralized contexts. Furthermore, it has included three historical case studies so that the general relation between decentralization and inequality could be analyzed under different historical and institutional circumstances. However, no doubt more work is needed along these lines. In Chapter 2 it was argued that the impact of inequality on the territorial design of redistribution for any given set of cases can be decomposed in two stages: the first one is how the structure of inequality shapes the preferences of the actors involved. The second one refers to how these actors interact and reach a final

Charles Beard (1913: 10) argued that "the men who favored the Constitution were affiliated with certain types of properties and economic interests, and that the men who opposed it were affiliated with other types". Beard himself admits to be following Madison and The Federalist Papers when designing his own approach. In The Federalist (X) referring to the different States, Madison writes that "the most common and durable source of factions has been the various and unequal distribution of property". Needless to say that politics is something else than that, but it is equally true that the study of the relation between politics and inequality gains nothing from ignoring this old truism.

outcome in the context of the existing decision-making procedures. This thesis intentionally leans towards the first one, for it is both the most novel and the most central for the general analysis of the relation. Treating both at once would be impossible, for comparative work requires partial equilibrium analysis. Hence the story has focused on how the structure of inequality shapes the preferences of the relevant actors. The second stage was frozen by a simplifying assumption, namely that the centralization of redistribution only takes place if it is accepted by either all or a qualified majority of the units of the federation. Herein lies the major limitation of this study. The elimination of such an assumption opens several questions of relevance for a better understanding of the relation: how does the situation at the origin matter for the relation? In the context of centralized countries, does a particular territorial structure of inequality lead to regional assertiveness? How does the existence of different national identities interact with the relation between decentralization and inequality? How do the different units agree upon the decision-making procedures to solve their contentions? By pointing to the limits of this piece of work these questions also set the guidelines for the development of complementary research endeavors.

DATA APPENDIX

The purpose of this Data Appendix is to present the sources and to describe the construction of the variables used in the statistical analyses carried out in Parts II and III of the thesis. In addition, in order to facilitate the interpretation of the results, it also includes the Summary Statistics of each of the variables listed below. Variables are presented in alphabetical order. Finally, under E, a short entry on the fifth wave European Community Household Panel (used in chapter 4) has been included. With varying degrees of incidence of missing values across the variables, the dataset contains information for the period 1975-1997.

Between Group Share of the Theil Index

Variable constructed by the author. The Theil Index is part of a family of measurements of inequality called single parameter Generalized Entropy class $GE(\alpha)$, for $\alpha = -1, 0, 1, 2$. The more positive α is, the more sensitive $GE(\alpha)$ is to income differences at the top of the distribution; the more negative α is, the more sensitive it is to differences at the bottom of the distribution. $GE(0)$ is the mean logarithmic deviation, $GE(1)$ is the Theil Index, and $GE(2)$ is half the square of the coefficient of variation. The values of the GE measures vary between 0 and ∞ , with 0 representing an equal distribution and higher values representing higher levels of inequality. In addition to satisfying the standard properties of inequality measures (namely, Mean Independence, Population Size Independence, Symmetry and the Pigou-Dalton Transfer sensitivity), the Theil Index is characterized by the fact that it is additively decomposable, as explained in the text. More formally, the measurements of inequality that belong to the Generalized Entropy class are given by:

$$GE(\alpha) = \frac{1}{\alpha^2 - \alpha} \left[\frac{1}{n} \sum_{i=1}^n \left(\frac{y_i}{\bar{y}} \right)^\alpha - 1 \right]$$

And more specifically, for $\alpha=1$, the Theil Index is given by:

$$GE(1) = \frac{1}{n} \sum_{i=1}^n \left(\frac{y_i}{\bar{y}} \right) \cdot \ln \left(\frac{y_i}{\bar{y}} \right),$$

where the first term represents the weight, i.e., the share of aggregate income of the group(s) of interest, and the second term represents the income of the individual relative to the mean. This means that the Theil Index is a weighted geometric average of the income relatives.

The variable has been constructed using the Luxembourg Income Study Data Set as the main source. The following steps have been taken:

- 1.- The Market and Disposable Income inequality variables have been calculated (see below).
- 2.- The relevant regional variables have been identified in the LIS dataset (household files). These are, depending on the countries, either D7 or D20.
- 3.- Once this information is available, the structure of the distribution of income has been decomposed taking the region as the partition criteria. As a result, the figures reported in full in Appendix 5.1 were produced. This has been done by implementing a Stata do file designed by Stephen Jenkins called *ineqdeco*.

Stemming from the LIS data set, this variable has the limitation of having very few observations over time per cross-sectional unit. Thus, in order to increase the number of available

data points, the following interpolation procedure has been implemented.

Suppose Y denotes a variable and t and $t^*(=t+3)$ denote the years in between there are missing observations. Y_t and Y_{t^*} are known, but there are three missing observations between them. In order to obtain the missing observations, the following expression has been applied¹:

$$Y_{t+1} = y_t + [(Y_{t^*} - Y_t) / (t^* - t)]$$

This procedure assumes that the change is equally distributed across the years for which there are missing observations (the intervals range between 4 and 5). The procedure is only applied if the number of missing observations is less than 5.

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	1.970494	2.230364	0	7.987	N = 280
between		2.256614	0	7.281891	n = 15
within		.4971907	.6309436	4.01528	

Capital Taxation

This variable is meant to capture the different ways in which capital is taxed in OECD economies. These include corporate profits taxes, property taxes and taxes on household capital income. The measurement is defined as the ratio between the taxes on household capital income (numerator) and the net operating surplus of the overall economy (OS). The numerator is calculated as follows. First the product between τ and the sum of the unincorporated business net income (OSPUE) and the interest, dividends and investment receipts (PEI) is calculated. In the author's words "this allocates household taxes to capital in line

¹ This interpolation procedure is similar to the one applied in Rueda and Pontusson (2002: 350-383).

with capital income as a proportion of household income” (p.9). The final figure for the numerator is obtained by adding to this product the taxes on property (PT), on financial transactions (FT) and, last but not least, the ones on income, profit and capital gains of corporations (CB). Cusack’s adjustment consists in a modification of the calculus of the average effective tax rate, tr , by way of recalculating wages and total household income (see below the calculation of the Average effective labor income tax rate for details). So,

$$CT = [tr * (OSPUE + PEI) + PT + FT + CB] / OS$$

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	37.94697	10.65345	16.26075	73.50088	N = 336
between		9.683518	21.26303	56.42266	n = 15
within		4.942548	23.78981	59.02868	

Civilian Government Employment. Civilian Government Employment as a percentage of the Working Age Population (15-64). Source: Cusack (1991, 1998).

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	12.14525	4.916089	5.568469	24.96848	N = 315
between		4.907614	5.765614	23.07186	n = 15
within		1.271735	6.971635	17.08665	

Coefficient of Variation in Regional Unemployment Rates

Variable constructed by the author. By regional it is meant a level of government similar to the German or Austrian Länder, the Canadian Provinces, the American States, the Spanish Comunidades Autonomas, the French or Italian regions or, if not self-evident, their closest administrative equivalent available, as in the case of Scandinavian nations. Sources: EUROSTAT-New

Cronos Database (NUTS-3 regions); and estimates obtained from the labor force surveys (various years) run by the following statistical offices: Statistics Canada; Bureau of the Census; Australian Bureau of Statistics; Statistics Finland; Statistics Norway; Statistics Denmark; Statistics Sweden. The administrative division available in the case of Scandinavian nations are as follows.

DENMARK: Koebenhavn Og Frederiksberg Kommuner, Koebenhavns Amt, Frederiksborg Amt, Roskilde Amt, Vestsjaellands Amt, Storstroems Amt, Bornholms Amt, Fyns Amt, Soenderjyllands Amt, Ribe Amt, Vejle Amt, Ringkoebing Amt, Aarhus Amt, Viborg Amt, Nordjyllands Amt.

FINLAND²: Uusimaa, Itä-Uusimaa, Varsinais-Suomi, Satakunta, Kanta-Häme, Pirkanmaa, Päijät-Häme, Kymenlaakso, Etelä-Karjala, Etelä-Savo, Pohjois-Savo, Pohjois-Karjala Keski-Suomi, Etelä-Pohjanmaa, Pohjanmaa, Keski-Pohjanmaa, Pohjois-Pohjanmaa, Kainuu, Lappi, Ahvenanmaa.

NORWAY: Østfold, Akershus, Oslo, Hedmark, Oppland, Buskerud, Vestfold, Telemark, Aust-Agder, Vest-Agder, Rogaland, Hordaland, Sogn og Fjordane, Møre og Romsdal, Sør-Trøndelag, Nord-Trøndelag, Nordland, Troms, Finnmark, Riket

SWEDEN: Stockholm, Uppsala län, Södermanlands län, Östergötlands län, Jönköpings län, Kronobergs län, Kalmar län, Gotlands län, Blekinge län, Skåne län, Hallands län, Västra Götalands län, Värmlands län, Örebro län, Västmanlands län, Dalarnas län, Gävleborgs län, Västernorrlands län, Jämtlands län, Västerbottens län, Norrbottens län.

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	.3189892	.1274254	.0875084	.7519701	N = 232
between		.1084262	.1643636	.6173863	n = 15
within		.0750713	.1054278	.5257981	

² Comparable data before 1990 for Finland are not available because the regional division was different during the 1980s (provinces).

Decentralization of Redistribution

Variables constructed by the author. The IMF Yearbooks of Government Financial Statistics (1975-1999) provide the raw material for the construction of a number of indicators measuring the proportion of revenues and expenditures in the hands of the different levels of government. In fact, as to expenditures, they do even collect data about their allocation by function and level of government. On the basis of these data, I have constructed two groups of three variables each. The first group isolates the regional branch of government of both the local and the central one. Alternatively, the second group puts together regional and local expenditures, broadening the scope of fiscal decentralization. In what follows I present the definition and Summary Statistics of the variables included in each of these two groups. Let R, L and C denote the regional, local and central levels of government.

Group A: Regional Level Variables

For the variables included in this group figures are calculated as follows:

$$[R/(L+C+R)]$$

1.-REGEXP: regional public spending over total public spending .

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	.0925779	.139012	0	.439873	N = 368
between		.1418854	0	.4122271	n = 16
within		.0199917	.0050637	.2037013	

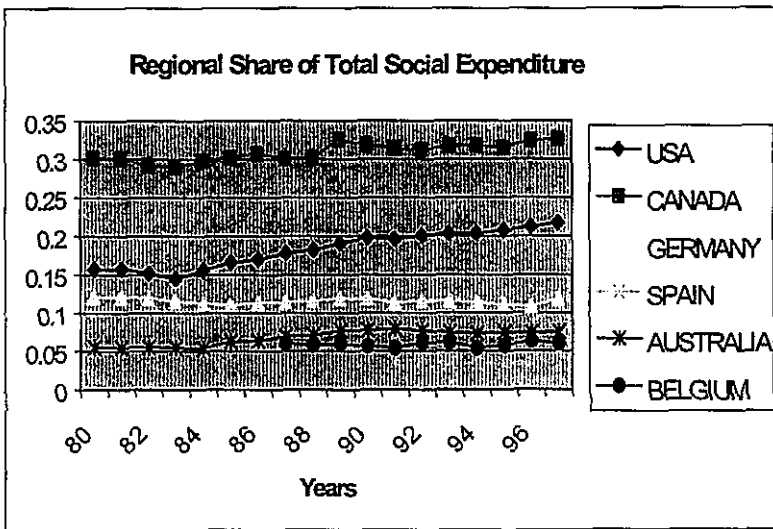
2.-REGREV: regional public revenues (excluding inter-governmental transfers) over total public revenues.

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	.0764906	.123862	0	.439999	N = 368
between		.127199	0	.4152727	n = 16
within		.0114931	.030283	.1278713	

3.-WELFDEC: regional share of total social expenditures.

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	.046427	.0826063	0	.326785	N = 325
between		.0714834	0	.2420663	n = 16
within		.0404396	.01956393	.1311457	

The graph below shows the time series of the regional share of total social expenditures for a selected number of countries. Note that according to this indicator Scandinavian welfare states are fully centralized.



Group B: Regional and Local Level Variables

For the variables included in this group figures are calculated as follows: $[(R+L)/(L+C+R)]$

4.-LOREGEXP: sum of local and regional public spending over total public spending.

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	.3088108	.1485387	0	.8205234	N = 368
between		.1448109	0	.5775125	n = 16
within		.0484832	.1741372	.8544146	

5.-LOREGREV: sum of local and regional public revenues over total public revenues.

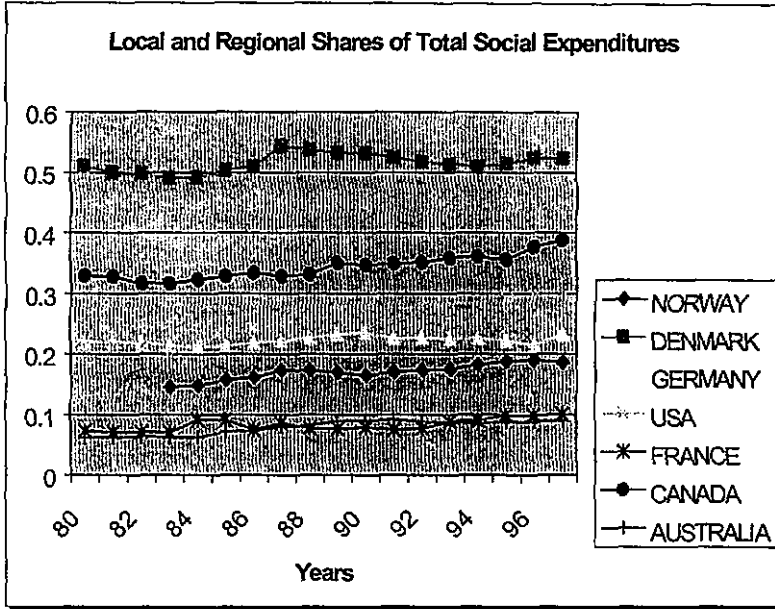
Summary	Mean	Std. Dev.	Min	Max	Observations
overall	.2450973	.1373854	0	.550987	N = 368
between		.1370531	.0500484	.5282832	n = 16
within		.0348883	.1629505	.6396185	

6.-TOTWELFDEC: sum of local and regional share of total social expenditures.

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	.1225762	.1483351	0	.5441813	N = 325
between		.1378055	0	.5109379	n = 16
within		.0583479	.1455005	.2565784	

The graph below shows the time series of the sum of the local and regional shares of total social expenditures. Note that, contrary to above, according to this indicator, France or the Scandinavian welfare states are partially decentralized (in the case of Denmark, it would be massively decentralized). In addition, the magnitude of the degree of political decentralization of redistribution in existing

federations (Germany, USA) would increase significantly in comparison to indicator 3 (welfdec).



Deindustrialization. this variable is defined by Iversen and Cusak (2000: 313-349) as 100 minus the sum of manufacturing and agricultural employment as a percentage of the working age population. Source: OECD, Labor Force Statistics (various years).

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	74.02164	5.966285	54.82	84.06	N = 311
between		5.263394	62.12333	81.70429	n = 15
within		3.094227	66.71831	83.48879	

(Effective) Labor Income Tax Rate

It is defined as the effective labor tax ratio, following an adjustment by Cusack on the calculations derived by Mendoza et al. (1997) and Carey and Tchilinguiriang (OECD 2000: 9). These authors define the effective labor tax ratio as the ratio between the labor share of household taxes (including the share of taxes on wages, $tr*W$, the social security charges, SSE_e , and payroll taxes, PT , to total labor income). Total labor income is defined as the sum of wages and salaries from dependent employment and the social security contributions met by the employers ($W+SSC_{Er}$). So the effective average income taxation according to these authors is defined as:

$$IT = (tr*W + SSE_e + PT) / (W + SSC_{Er})$$

Tom Cusack's adjustment of this measure consists in redefining the wage variable (W) as the total compensation of employees minus the sum of the employer's contributions to SS and the employer's contributions to private pensions plans. This change also applies to the denominator of the effective tax rate, tr .

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	37.41836	11.02281	18.09691	61.93362	N = 336
between		10.60638	20.81978	51.65706	n = 15
within		3.786695	26.42076	51.49466	

Ethnic Fractionalization

From all the alternatives available in the literature (Laitin 2000: 142-155) I have, conventionally, adopted the one that measures ethnic fractionalization as one minus the sum of squared population proportions in each "ethnolinguistic" group, where the groups were originally defined according to the 1960 Soviet Ethnographic Atlas. The final figure represents the probability that

two people drawn randomly are from a different ethnic group since the sum of squared population proportions is the probability that two random people are from the same group.

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	.2218592	.2113707	.0145518	.7544298	N = 368
between		.2180059	.0145518	.7544298	n = 16
within		0	.2218592	.2218592	

European Community Household Panel (5th wave)

The European Community Household Panel is a longitudinal dataset, so far with 5 waves of data. It is run by Eurostat in cooperation with national statistical offices and research institutes. The reason to use the fifth wave stems from the fact that, after performing several sensitivity checks on the quality of the data for some of the countries (Germany, UK) in which alternative domestic longitudinal datasets were available, it was concluded that the ECHP samples for those countries suffered from serious sampling problems. Hence, in the interim between the fourth and the fifth waves, the data for Germany were replaced by the ones in the German Socioeconomic Panel and the data for the UK were replaced by the ones in the British Household Panel Study. As a result, the quality on the data increased significantly. Data correspond to 1998. The appropriate cross-sectional weights (variable HG004 in the household file) have been implemented, according to the instructions in Eurostat (2001). Eurostat (1998, 2001a, 2001b) provides a detailed account of the preparation of the data and the transition between the Production Data Base and the User Data Base as well as a description of the variables included in the data set. The following table presents, by country, the national sub-samples (household file) used in the analysis:

COUNTRY	Freq.	Percent	Cum.
DENMARK	2512	4.21	4.21
NETHERLANDS	4963	8.32	12.53
BELGIUM	2876	4.82	17.35
FRANCE	5866	9.83	27.19
IRELAND	2729	4.57	31.76
ITALY	6571	11.02	42.78
GREECE	4211	7.06	49.83
SPAIN	5485	9.19	59.03
PORTUGAL	4716	7.91	66.93
AUSTRIA	2960	4.96	71.90
SWEDEN	5807	9.73	81.63
GERMANY	5962	9.99	91.63
UK	4996	8.37	100.00
Total	59654	100.00	

Female Labor Force Participation: Percentage of Women aged 15 to 64 in the labor force. Source: OECD Labor Force Statistics (various years).

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	40.9473	4.157414	26.8	48.1	N = 315
between		3.573509	34.64286	46.68095	n = 15
within		2.308137	33.10444	47.70445	

Generosity

Calculation by the author of the ratio between the total expenditure on unemployment benefits (see below) to the unemployment rate (see below).

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	.2356364	.1337211	.0525842	.7714822	N = 314
between		.1197658	.0839876	.5494545	n = 15
within		.0664128	.0309604	.4852307	

Government / Incumbent' Ideology:

1) **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 (1984) coding of government parties' placement on a left right scale, weighted by the decimal share of cabinet portfolios.

Summary	Mean	Std. Dev.	Min	Max	Observations
Left overall	1.944038	.7619279	1	3	N = 312
between	.4933102		1	2.7125	n = 15
within	.5939167	.6816575	3.563086		

The variable ranges from 0 (extreme right) to 4 (extreme left).

2) **Right:** share of right party cabinet portfolios out of all cabinet portfolios. See Swank (2002) for sources, specification and country details.

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	37.11475	41.51373	0	100	N = 366
between	26.11241	2.304348	94.17391		n = 16
within	32.84708	4.75481	120.5061		

LDC: Non OPEC trade with less developed countries as a percentage of GDP. Sources: Rueda and Pontusson (2002) and OECD: Monthly Statistics of Foreign Trade.

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	16.57534	7.096403	3.4	38.1	N = 311
between	6.77444	8.214286	30.80476		n = 15
within	2.697981	7.770576	26.59438		

Low Income

Expenditures on social assistance are included under this category. It includes both in cash and in kind expenditures to those persons who fall outside the scope of relevant programs covering specific contingencies. In some cases they do complement these programs, like unemployment, provided that the person qualifies for low income transfers and the regular benefits are clearly insufficient to meet the person's needs. (OECD 1997-2000: 7). Social expenditures for immigrants and indigenous people are also included in this category.

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	.5465909	.6321667	0	3.27	N = 264
between		.5978311	.005	2.484444	n = 16
within		.2155065	.2867424	1.332146	

Market and Disposable Income Inequality

Variable constructed by the author. Let M and D represent market and disposable income. These can be defined as follows:

(1) $M = GWS + SEI + CPI$, 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 income tax.

In order to construct these two variables for the purposes of the analysis, the following strategy has been followed: on the basis of the Luxembourg Income Study data set I have constructed a backbone set of data points that have been calculated according to the same definition and equivalence scale. As a result these observations can be regarded being comparable, both cross-

nationally and over time. In order to construct this core of data points, the following steps have been taken:

1.- Only the working population is considered, i.e., only people aged 16 to 59 are included.

2.- The following equivalence scale, to be implemented in all future calculations, is defined: $(1 + CH*0.3 + (N-CH-1)*0.4)/1.7$, where N represents the number of people in the household and CH the number of children under 18.

3.- On the basis of (1) and (2), two new variables are calculated, market and disposable household income per equivalent adult.

4.- The Gini Coefficient for each country/year in all the available data sets is calculated. The Gini Coefficient ranges between 0 (perfectly egalitarian society) and 1 (perfectly inegalitarian society). The Gini coefficient is based on the Lorenz curve, a cumulative frequency curve that compares the distribution of a specific variable (income) with the uniform distribution that represents equality (in this case, the 45° line). Intuitively, in order to obtain the Gini coefficient, graph the cumulative percentage of households (from poor to rich) on the X axis and the cumulative percentage of income on the Y axis. In this way, the Lorenz curve is obtained. The Gini coefficient is simply the ratio between the area of the distribution between the 45°line and the Lorenz curve on the one hand and the total area of the distribution on the other. More formally, the Gini coefficient is given by

$$\text{Gini} = \frac{1}{2n(n-1)\bar{y}} \sum_{i=1}^n \sum_{j=1}^n |y_i - y_j|$$

which represents the average absolute distance between any two individuals randomly selected.

A summary of these *backbone* measurements is available from Table 3.1, from which it is clear that for a majority of the 15

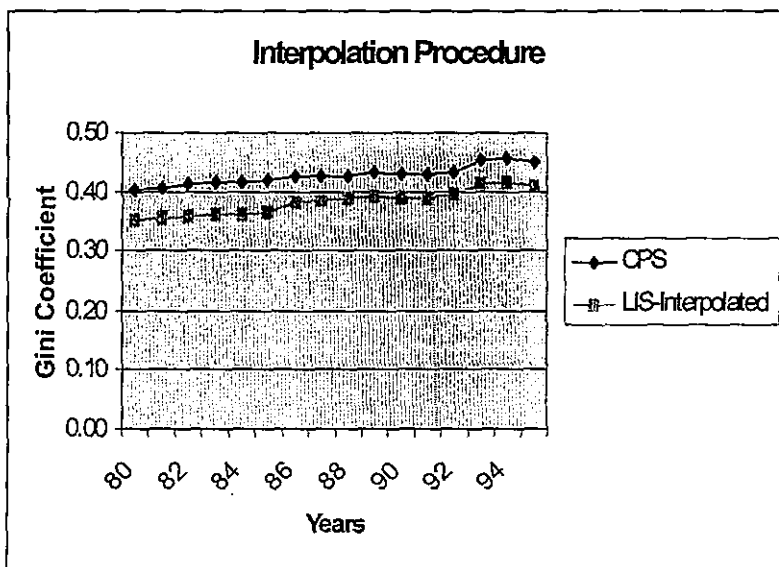
OECD nations included in the sample there are sources of reliable data every 4-5 years.

In a second step, a number of alternative time series with a higher number of points in time, but not comparable cross-sectionally, have been gathered. These other points in time have been derived in a two-fold way: a) using alternative data sets when available, such as the Current Population Survey or the Panel Study of Income Dynamics (USA), the GSOEP (Germany) and the ECHP (European Union Countries) b) incorporating series available in the secondary literature. For a detailed account of the sources and the references used see Atkinson (2000 a , 2000b), Atkinson and Brandolini (2001: 771-800; 2003). In cases like Spain, where the LIS data only contain two data points, I have relied exclusively on domestic sources to construct the above defined indicators. Specifically in the case of Spain the *Encuesta Continua de Presupuestos Familiares* has been used for the period (1987-1995).

Finally, under the assumption that for any given country measurements of income based on different definitions and/or equivalence scales should show a similar trend, I have interpolated the original, fully comparable set of indicators, with the trends obtained from the alternative domestic sources. The interpolation procedure works as follows: suppose that there are two different indicators, I1 and I2, of inequality available for country C. Let the indicators obtained from the LIS data be I1. According to Table 3.1., it would provide four, at best, five data points that are comparable both cross-sectionally and over time. I2 is obtained from alternative domestic sources and offers yearly observations between 1980 and 1997, with small breaks. On this basis, the interpolation procedure is undertaken in two steps. First, the series of I2 are linearly interpolated in the same way as it was the Between Group Share of the Theil Index (above), with one qualification. I2 measures are only interpolated if the number of missing observations is equal or less than two. At this point the I1 and I2 series can be put together. For all the countries in which the two series were available, there are a number of data points

with observations in both series. Using this information, the interpolation is implemented assuming that the distance between the points across the two series remains constant. So, suppose that x_1 is a known point in the I_1 series while x_2 is unknown. Alternatively the y series contains known points, y_1, y_2, y_3, \dots . Both x_1 and y_1, y_2, y_3, \dots are known and we want to interpolate the trend of y into x . This is simply done by calculating $x_2 = (x_1 \cdot y_2 / y_1)$. The same procedure is repeated for the rest of missing observations.

The following graph offers an example of the results obtained. It plots two time series, namely one obtained by Atkinson (2000a, 2000b) for the USA on the basis of the Current Population Survey and the LIS- interpolated series, obtained as a result of implementing the procedure described above. The CPS series is not comparable to the LIS for it is based on a definition and equivalence scale other than the ones described above. And indeed they show different levels. Our assumption, however, is that there is no reason for the trends between the two measures to



diverge. After applying the interpolation procedure a significant improvement is made from the 4 comparable data points (0.35, 0.37, 0.39, 0.41) available in Table 3.1 to the 15 comparable data points available in the graph below. Of course, the 4 original Lis data points are part of the LIS-interpolated time series.

In this way a reasonable number of comparable observations for the period 1980-97 has been obtained for 15 OECD countries. These countries are: Australia, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, Netherlands, Norway, Spain, Sweden, UK and USA.

Market Income Inequality

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	.3419546	.040402	.26265	.44	N = 211
between		.0346343	.2838682	.4090485	n = 14
within		.0230427	.2836464	.4121784	

Disposable Income Inequality

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	.2678843	.0457444	.19399	.36	N = 212
between		.0450347	.2043748	.3470625	n = 14
within		.0138072	.2222218	.3124818	

National Income: Real GDP per capita in 1985 US\$. Source: Penn World Tables. (<http://pwt.econ.upenn.edu>).

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	714450.4	1873176	3762	8952413	N = 315
between		1903528	4561.619	7236592	n = 15
within		340824.7	141930	2430272	

Old Age Dependency Ratio

It is defined as the number of elderly people over the employed population, in turn defined as the difference between the total labor force and the unemployed population. Source: OECD, Labor Force Statistics (various years).

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	.321367	.0654061	.1557397	.4886259	N = 368
between	.0607954	.2166738	.4026017		n = 16
within	.028345	.2022014	.4124234		

Overall Social Spending

This variable provides a gross indicator of the total welfare effort of different OECD countries. According to their definition, [public] "social expenditure is the provision by public institutions to, and financial contributions targeted at, households and individuals in order to provide support during circumstances which adversely affect their welfare[...] Such benefits can be cash transfers or can be the direct ("in kind") provision of goods and services. This variable is defined as the total sum of cash and in kind transfers as a percentage of GDP for any given country/year. It generally excludes the costs incurred in the provision of benefits, as these costs do not go to the recipients. (OECD 1997: 3). Source: OECD Social Expenditure Statistics (1997, 2000).

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	33.01247	7.105571	17.1963	51.90685	N = 315
between	6.589177	20.07812	44.43772		n = 15
within	3.13645	23.41405	49.0751		

Pensions

It is defined as social expenditure on Old-age cash benefits as a percentage of GDP. It comprises all cash expenditures (including lump sum payments) on old age pensions within the public sphere. They provide an income for persons retired from the labor market and/or guarantee incomes when a persons has reached a "standard" pensionable age according to the rules of the program. Programs designed to cope with early retirement for labor market (policies) related reasons are excluded from this category and considered under unemployment benefits (OECD 1997: 1-10).

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	6.851861	2.25287	2.79	13.24	N = 274
between	2.174576	3.353889	10.43389		n = 16
within	.8313048	3.777972	9.657972		

Trade Openness. It is defined as the sum of total imports and exports on good and services as a percentage of GDP. Source: OECD, National Accounts, Part II: Detailed Tables (various years).

xtsum Trade

Variable	Mean	Std. Dev.	Min	Max	Observations
Trade overall	60.15385	28.53088	16.31	146.02	N = 314
between	28.6827	19.5781	128.3105		n = 15
within	6.4699	25.45338	79.64385		

Turnout: Voter turnout rates as recorded on an annual basis. See Mackie and Rose (1991), and International Institute for Democracy and Electoral Assistance (1997) for details and sources.

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	77.53484	10.75613	42.13	92.7	N = 314
between		9.99279	53.0481	88.8215	n = 15
within		4.722902	49.95056	99.55056	

Unemployment

Standardized Unemployment rate, OECD, *Employment Outlook* (annual series/various years).

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	6.686349	3.265039	1.3	18.2	N = 315
between		2.49695	2.385714	9.619048	n = 15
within		2.196096	1.567302	17.73397	

Unemployment Benefits

It encompasses all cash expenditures devoted to compensate for the costs of falling into unemployment. This includes three major components: unemployment compensation, early retirement for labor market reasons and severance pay (OECD 1997: 5-7).

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	6.686349	3.265039	1.3	18.2	N = 315
between		2.49695	2.385714	9.619048	n = 15
within		2.196096	1.567302	17.73397	

Unemployment Replacement Rates

This variable is the summary measure of the OECD gross replacement rates database. This database collects data on replacement rates for individuals in different situations (up to 42) as defined by the combination of three criteria, namely family

types, earnings levels and range of unemployment duration. The family types considered are *Single*, *Single with dependent spouse* and *Single with working spouse*. The earnings levels are two: 67% and 100% of average earnings. Finally, the range in the duration of unemployment distinguishes seven possibilities: 0-3 months, 4-6 months, 6-12 months, 13-24 months, 25-36 months, 37-48 months and 49-60 (5 years) months. From these seven possibilities the OECD only reports the replacement rates at three levels of duration, namely the first year, the second and third years, and the fourth and fifth years. The variable used for the specifications in this chapter is simply the average across three unemployment durations, three family types and two earnings levels. (Wolfers 2001).

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	.2863638	.1361815	.0034722	.709684	N = 368
between		.1318798	.0532864	.5465313	n = 16
within		.0468584	.0436887	.4495165	T = 23

Union Density

The variable measures employed union members as a percentage of the employed labor force. The variable is available in the Huber, Ragin and Stephens (1997) Comparative Welfare States Data Set, Northwestern University and University of North Carolina. Original data come from Visser J. (1989, 1996).

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	45.46037	18.84529	8.8	87.3	N = 270
between		19.18925	15.08889	81.75556	n = 15
within		3.191961	36.66037	53.61037	

Wage Bargaining Centralization

This measure aims at capturing the structure of wage bargaining in any given country. The variable works as follows: “The centralization variable is divided into three classes: a decentralized category where firm and plant-level bargaining dominate, an intermediate centralized category with most bargaining taking place at the industry or sectoral level, and a centralized category with an important role for peak level bargaining between encompassing organizations of labor and capital” (Iversen 1999: p.4). See Iversen (1999) for a detailed account of the sources.

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	.3078169	.1718323	.071	.654	N = 311
between		.1601215	.071	.543381	n = 15
within		.0748254	.0035641	.5845788	

Wage/Earnings Inequality

Three indicators of wage inequality are used in the thesis, namely the 90/10, 90/50 and 50/10 percentiles ratio. Data on wage inequality are provided by the OECD (see 1993 and 1996 for printed versions). The indicators are calculated on the basis of the gross earnings of full time workers. Domestic sources have been adjusted to report annual data. The detailed sources for each of the countries included are as follows. AUSTRALIA: Employee Earnings, Benefits and Trade Union Membership; AUSTRIA: Enterprise Survey: Structure of Earnings Survey, in which there is an issue regarding strict comparability to be born in mind. Firms with less than 10 employees are excluded and part time workers are included; BELGIUM: Social Security Data, INAM; CANADA: Labor Force Survey; DENMARK: Danish Finance Ministry: Tax Registers/Income and Wealth; FINLAND: Income Distribution Survey; FRANCE: INSEE (Declarations Annuelles

des Données Sociales), net of social security contributions but not of the income tax; GERMANY: German Socio-Economic Panel; ITALY: Social Security Data. Istituto Nazionale de Previdenza Sociale; JAPAN: Basic Survey of Wage Structure; NORWAY: Norwegian Survey of Organizations and Employees; NETHERLANDS: Survey of Earnings, Dutch Central Bureau of Statistics; SWEDEN: Income Distribution Survey UK: New Earnings Survey; USA: Current Population Survey. For some countries, where the number of observations is very small, a number of interpolated data points has been added. See above for details about the interpolation procedure.

90/10

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	2.847591	.6069777	1.885382	4.600877	N = 315
between		.587093	2.083132	4.095125	n = 15
within		.2137704	1.83392	3.465116	

90/50

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	1.722573	.1470479	1.49	2.17	N = 315
between		.1432468	1.546641	2.04381	n = 15
within		.0490963	1.576591	1.891114	

50/10

Summary	Mean	Std. Dev.	Min	Max	Observations
overall	1.646893	.2252562	1.3	2.43	N = 315
between		.2107312	1.342604	2.113065	n = 15
within		.0957144	1.271951	2.031235	

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