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**WHEN IS SOCIAL PROTECTION COMPETITIVENESS-ENHANCING?
A MODEL OF COSTS AND BENEFITS ON ECONOMIC EFFICIENCY.**

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When is social protection competitiveness-enhancing ? A model of costs and benefits on economic efficiency^{*}

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Abstract

This work aims to contribute to the contingency view of social protection and economic efficiency, by exploring some conditions under which welfare systems can be considered as efficiency-enhancing or not. The framework I rely upon is the so-called 'human development paradigm', according to which economic, social and fiscal issues are tightly linked, so that social protection can be analyzed as a real productive factor. I show the possibility of applying this paradigm through an analytical model containing the contradictory effects of social protection on economic efficiency. The effect is indeed twofold: both short-term financial cost notably in traditional economic sectors and medium-long-term investment especially in innovative and creative sectors. What matters in order to evaluate this cost-benefit analysis is not the expenditure level, but some structural variables, different by country and time: the distance from the world technological frontier, the share of productive expenditure out of total social expenditure, the degree of economic and financial globalisation, the effectiveness of social expenditure (low distortions), the discount rate of expected future benefits.

JEL classification: D61, E62, F43, H55, I31

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1. Introduction

There is a wide literature about the effects of social protection and the welfare state on economic efficiency and competitiveness. Theoretical works show different outcomes according to different hypotheses about the role of welfare systems. Empirical analyses yield uncertain results, usually not significant or unrealistic figures. There are neither conclusive evidence of a trade-off between social protection and economic efficiency,

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nor proofs of undoubted complementarity, because what matters is the welfare system structure as well as its level [Atkinson 1999, Lindert 2004a, 2004b]. My aim is then to contribute to the contingency view of social protection and economic efficiency [Gough 1996], by exploring some conditions under which welfare systems can be considered as efficiency-enhancing or not.

The relationships between welfare systems and competitiveness are crucial in understanding whether the former can protect individuals from the increasing risks they meet in the global economy. Indeed globalisation, ITC revolution, and demographic transition make our societies both very open and insecure. Because of the trade-off between equality and efficiency, the economic mainstream considers social protection, and notably its public pillar, as a more and more heavy cost for the even increasingly global economy. Freed from fiscal costs and public regulation, markets could better reduce disincentives, favour economic growth, and satisfy social needs. However, the economic mainstream relies upon unrealistic hypotheses which do not represent long-term economic and social relationships, but merely short-term financial sustainability of social spending. It does not consider imperfect competition, market failures or information asymmetries which jeopardize the possibility to protect the citizens from increasing risks. The lack of a suitable public protection could increase a more distortionary and less effective private social spending. Scholars stress some shortfalls of the mainstream view, namely the non-demonstration of the hypotheses upon which the equality-efficiency trade-off is based; the sharp separation between economic and social facts; and finally the analysis of social protection considered only as redistribution ('Robin Hood') and not efficiency ('Piggy Bank') [Barr 2001].

Conversely, it is feasible to study social protection as a competitiveness factor via many channels. It is an essential precondition of competitiveness, even more in our present-day global world rather than in the past. We now have to link on interdisciplinary bases economic and social facts which on the contrary are usually considered as separate studying fields, but forming an inseparable unity and identity. If advanced countries rely their economic growth upon high export quality rather than low export prices, then some factors of competitiveness depend on the availability of social protection instruments, i.e. aimed to gain widespread creativeness and innovation, human and social capital, propensity to risky behaviour, socio-political and macroeconomic stability. My aim is to demonstrate that welfare systems are necessary to provide economic systems with the productive factors they need. They are essential to improve international competitiveness, which in turn becomes central for economic policies in our global era. Accordingly, to increase competitiveness we do not need to roll back, but rather to reshape the welfare systems structure in order to reduce their financial problems, ensure protection from new global risks, and support productive specialization in high-tech and high-innovation sectors. Otherwise for lagging countries such as Italy there is a great risk of falling into a trap of economic decline biased to gain price and not quality competitiveness. Italy could fall behind the other advanced countries, which are on the contrary biased to improve export quality and incorporated innovation. What matters is not the absolute expenditure level but the welfare system structure, more or less aimed to productive and not distortionary expenditures.

This work is organised as follows. In the chapter 2 a simple scheme of reciprocal and dynamic links where welfare system elements are positively linked both to social

outcomes and economic performances. Then a formal (chapter 3) and empirical (chapter 4) analysis starting from some stylized facts with no satisfactory explanations in the economic mainstream: the possibility for both residual and social-democratic welfare states to be strong innovators; the great difference of taxation and social expenditure levels between the advanced countries, with no empirical evidence of convergence; the stable social expenditure levels of the advanced countries notwithstanding the ongoing economic, technological and social changes; the risk for lagging countries as Italy to be entrapped into a low-growth, low-innovation and low-fertility vicious circle.

2. The relationships between economy, society and welfare systems

In the economic mainstream, equality-efficiency trade-off ties up social protection arrangements, satisfaction of social needs, and economic performance. Large welfare systems and social equality are at odds with economic efficiency, and the latter decreases when the former increase their size. The economic growth trickles down wealth, guaranteeing social justice with its social externalities. The welfare state is a black hole, a leaky bucket where resources accumulated during economic growth are wasted, so that the searching for equitable 'slices' reduces the 'cake' dimension [Okun 1975]. There are both macro- and micro-economic issues against social protection. The former are (i) financial inconsistency related to public debt and international investors' expectations, and (ii) the burden on the prices of goods and services, when globalisation imposes greater international competition and social dumping. The latter are (iii) the reduction of individual responsibility, by limiting freedom of objectives and enjoyment of one's own effort, and (iv) non-market failures and ineffective public intervention, caused by agency problems with the bureaucracy and political-electoral cycles.

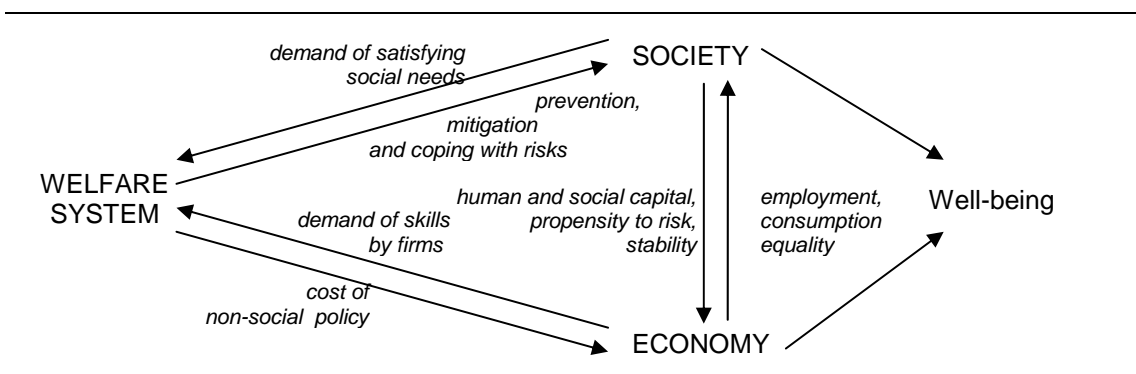
Competitiveness can then grow by rolling back social protection. However many works relying upon this approach have restricted basic hypotheses and application range. Those works consider social protection merely as an income redistribution from productive to unproductive classes, e.g. from working to retired people [Alesina and Perotti 1997] or from successful to unsuccessful individuals [Hassler *et al.* 2003]. In such models there are no additional functions of social expenditure such as insurance and efficiency. Efficiency is sometimes openly excluded from the objectives, reduced to a struggle against inequality and social exclusion. From an analytical point of view, trade-off hypotheses imply that advanced economic systems are situated on the frontier of the transformation curve, and therefore every public intervention represents a zero-sum game displacing resources between sectors or individuals. There are shortages of physical and social resources, contrary to the Keynesian approach which suggests that economic policies could increase the use of both labour and capital, i.e. they could move the economy from inside to a point closer to the frontier. Lindert [2004a: 227] is right when he writes '*It is well known that higher tax and transfers reduce productivity. Well known, but unsupported by statistics and history*'. Recent theories stress more complex relationships existing between economic and social variables. Firstly, there are direct and positive relationships between welfare systems and economic efficiency via well-designed welfare structures [Lindert 2004a: 235-263]. Secondly, trickle-down is not so obvious, as it is demonstrated by the growing inequalities in the advanced countries in the last 30 years despite their economic growth. Thirdly, some conditions of the perfect competition model are not met in our real world, due to individuals' aversion

to risky activities, second best outcomes, uncertainty, and information asymmetries [Barr 2001: ch.2].

Empirically the trade-off is not verified, since many econometric analyses do not show any conclusive and significant evidence that social expenditure or taxation levels are negatively correlated with economic growth [Atkinson 1999: ch.2, Lindert 2004b: 82-99]. Indeed many countries (e.g. the Netherlands) succeed in conjugating their egalitarian social objectives with economic growth, helped by their universalistic welfare systems [Goodin *et al.* 1999: 259-264]. Finally philosophical and ideological issues against large welfare systems are dramatically challenged by Sen's concepts of capabilities and functionings, according to which social protection in itself is a source of well-being. Indeed it provides individuals with more liberty of choice and economic, social and political participation [Sen 1992, 1999]. As a consequence, complex and alternative views of social and economic facts arise in the so-called 'human development paradigm'. Social expenditure is not only considered as consumption or redistribution, but also as a long-term 'social investment' in exchange for taxes, in order to improve the quality of economic systems and to expand human liberties [Esping Andersen 2002: 9-10, 2003: §4.2-4.3]. According to such an approach, economic and social policies could be beneficial: '*Social policy is more than just a financial burden. It is a productive factor contributing to political stability and economic dynamics*' [Fouarge 2003: 35].

Welfare systems, society and economy can be represented by the scheme of reciprocal, complex and dynamic relationships sketched in the Social Policy Agenda of the European Commission [EC 2000: 8], provided that its perspective is changed from labour market policies to social protection [Figure 1].

Figure 1: Reciprocal relationships between welfare systems, society and economy



Social protection can improve economic efficiency both directly and indirectly, via higher equality and capabilities, although these two functions are not clearly separable. Economic and social objectives are not final aims, but instruments to gain widespread well-being. Contrary to customary analyses, welfare systems are defined as composed by public social expenditure, private (corporate and out-of-pocket) expenditure, and family self-servicing [Esping Andersen 1999]. In such a way the total net social expenditure (S_{tot}^{net}) is equal to the public net social expenditure (S_{pub}^{net}) plus the private expenditure for education, healthcare and retirement funds (S_{priv}). In turn the public net social expenditure is equal to its gross value, i.e. the welfare state as usually defined (S_{pub}^{gross}), plus tax breaks for social purposes ($TBSP$), minus direct taxes on benefits and

indirect taxes on consumption (T) [Adema 2001]:

$$[1] \quad S_{tot}^{net} = S_{pub}^{net} + S_{priv} = S_{pub}^{gross} + TBSP - T + S_{priv}$$

Both public and total social expenditure are reference points. The public pillar is indeed criticized for its excessive size and distortions, but the ‘costs of non social policy’ approach demonstrates that *‘Diminishing public health, pension, or social care expenditure is unlikely to produce any real cost savings since households will compensate with market purchase or with self-servicing. If welfare is externalized to markets, this will not result in appreciably lower net household money outlays’* [Esping Andersen 2002: 25].

There are two different lines of research which suggest a direct relationship between welfare systems and economic performances. The first one stresses the savings of immediate and dynamic long-term costs which social protection provides (‘costs of non social policy’ approach) [Begg *et al.* 2003, Fouarge 2003]; the second one highlights that economic systems demand specific welfare systems and workers’ skills, fit to their institutional advantages (‘varieties of capitalism’ approach) [Hall and Soskice 2001, Pierson 2001]. Welfare systems are also indirectly linked to the economic system, via equality, capabilities and functionings the society achieves through social protection. They are at the very same time productive factors and thus preconditions for technological development and economic integration, because, when protected from growing risks, people are able to ‘produce’ a number of productive factors for the economic system. The promotion of economic efficiency is then not alternative but complementary to the aim of a higher social equality and a better quality of life. This is reached via stability facing economic shocks and fluctuations; reduction of risks in order to favour profitable but insecure activities and behaviours; promotion of investment in quantity (education since childhood and lifelong learning) and quality (healthcare) of human capital; support for social cohesion and capital; feasibility of flexible jobs with no precariousness facing changing technology and organization and growing international openness; finally promotion of gender equality and conciliation between motherhood and employment [Gough 1996, Sinn 1996, Rodrik 1998, Bowles and Gintis 2000, Esping Andersen 2002, 2003, Fouarge 2003, van der Ploeg 2003].

The role of social protection as a productive factor becomes even stronger in our global economy, which amplifies interdependences and risks, although financial constraints limit its supply. As long as globalisation makes international competition more and more central, country competitiveness is even increasingly decisive. Production efficiency in increasing competitiveness concerns both productive factors costs (price competitiveness, i.e. the real exchange rate) and innovation and creativeness capabilities (non-price or quality competitiveness). By increasing educational investments (greater and better human capital) and by satisfying new needs of post-industrial societies (less risks to meet), the advanced countries could increase their competitiveness in high-quality and high-technology goods and services. Therefore the advanced countries specialize in productive phases where their already existing welfare systems furnish advantages ‘protecting’ from social dumping. Such a growth path is not empirically contradictory, since many analyses on competitiveness and innovation factors clearly demonstrate that high social protection is not harmful for high per-capita incomes or strong innovation capabilities [e.g. Castells and Himanen 2002].

3. An analytical formalization of the model

The second step of my work suggests a model of costs and benefits of welfare systems on competitiveness, through an analytical formalization of the relationships between social expenditure and global competition. Contrary to customary analyses, competitiveness is not defined as the ability to export in contested markets, but rather as the long-term structural ability to provide high and increasing incomes while being exposed to foreign competition [Gough 1996]. A contradiction appears about the role of welfare and fiscal systems, which yield both costs and benefits. This model aims to explain under what conditions such a contradiction implies a lower fiscal burden and lower labour costs, and when, conversely, large and well-designed welfare systems are consistent with economic efficiency and competitiveness.

Acemoglu, Aghion and Zilibotti [2003] analyze a model of endogenous growth. As an economy approaches to the world technological frontier, innovation becomes more important to increase productivity than imitation. I will extend their model to include the effects of social protection on innovation and imitation. Moreover I consider a developed economy composed by two sectors with no spillovers. The traditional imitation sector aims to gain price competitiveness and low production costs. The innovation sector aims to gain non-price (quality) competitiveness, by searching for widespread innovation and creative abilities. Structural long-term competitiveness is proxied by productivity growth. Both sectors export to the rest of the globalised world, but the globalisation process yields different consequences upon them. Far from the world technological frontier, the traditional sector competes in perfectly competitive markets, whose base are low prices. The innovation sector competes in monopolistic or oligopolistic markets instead, whose bases are high quality and incorporated innovation, and which are characterized by low elasticity of demand on price. As the economy approaches the world technological frontier, its growth rate would slow down and the traditional sector would lose importance in favour of the innovative sector. A country close to the frontier needs then to shift its productive resources from the traditional to the innovation sector in order to increase its growth rate. But does it require more or less social expenditure to support its innovative sector?

My basic hypothesis is that public and private social expenditure, and the fiscal policies necessary to finance it, play a contradictory role. They are negative in the short term notably for the imitation sector, and positive in the medium-long term especially for the innovation sector. In the short term the negative effects of financing public protection or private insurance prevail, so burdening production prices via corporate taxes and labour costs. While in the long term the positive effects of benefits increase via better human and social capital, greater propensity to risky behaviour, higher socio-political and macroeconomic stability, less resistance to technological and organizational changes. There are then on both sectors negative welfare effects via corporate taxes and labour costs, and positive effects via long-term 'social investments'. My focus is not only on the expenditure level alone, but on its structure as well. The welfare structure influences economic outcomes by protecting individuals from some risks rather than from others, by investing in some issues rather than in others, and by dispersing more or less resources. Atkinson [1999: ch.2] suggests that the analysis of the actual structures of welfare systems to explain economic performances is the only solution to overcome the inconclusiveness of empirical analyses focused on social expenditure levels alone.

Apart from social effects, high social expenditure is consistent with high structural competitiveness when long-term benefits are greater than short-term costs. The probability for this condition to hold depends on some structural variables which have to be discussed in order to compare the sustainability of different welfare systems. These structural variables refer to the distance from the world technological frontier, the share of productive expenditure out of total social expenditure, the degree of economic and financial globalisation, the effectiveness of social spending (low distortions), and finally the discount rate of expected future benefits.

In Acemoglu *et al.* [2003: 8-12] the aggregate growth of technology in a continuum from 0 to 1 of economic sectors is

$$[2] \quad \frac{A_t}{A_{t-1}} \equiv \frac{\int_{v=0}^1 A_t(v) dv}{A_{t-1}} = \frac{\int_{v=0}^1 (\eta \tilde{A}_{t-1} + \gamma(v) A_{t-1}) dv}{A_{t-1}} = \int_{v=0}^1 (\alpha \eta + \gamma(v)) dv$$

where $A_t(v)$ is productivity of sector v at time t , \tilde{A}_{t-1} is the state of world technology in the previous period, $\eta < 1$ is the rate of adoption of already well-established technologies, $\gamma(v) > 1$ are the innovation skills in sector v , and α is the distance from the technological frontier. If α is high, then the growth is imitation-driven because of the great weight of η . If instead it is close to 1, then the growth is innovation-driven, because the weight of γ increases. It is feasible to simplify [2] by considering γ the same in all the sectors, and to add the effects of social expenditure by introducing the following relationships: a) total social expenditure as a ratio of GDP (S), which is the sum of public protection expenditure (S_{pub}) and private (both corporate and out-of-pocket) expenditure for market insurance and provisions (S_{priv}); b) taxation level as a ratio of GDP (t), which is a positive function of public social expenditure; c) labour costs as a share of GDP (w), which are a positive function of private social expenditure; d) welfare benefits on the traditional sector (B_η), which are a positive function of the expenditure effectiveness (ε) and a negative function of the globalisation degree (δ); e) welfare benefits on the innovative sector (B_γ), which are a positive function of the productivity-enhancing share of the total social expenditure (β) and a negative function of the discount rate of expected future benefits (i). Then we define:

$$[3] \quad S = S_{pub} + S_{priv}$$

$$[4] \quad t = t(S_{pub}) \quad \text{where } t' > 0$$

$$[5] \quad w = w(S_{priv}) \quad \text{where } w' > 0$$

$$[6] \quad B_\eta = B_\eta(\varepsilon, \delta) \quad \text{where } B'_\varepsilon > 0, B'_\delta < 0, \varepsilon \in [0;1] \text{ and } \delta \in [0;1]$$

$$[7] \quad B_\gamma = B_\gamma(\beta, i) \quad \text{where } B'_\beta > 0, B'_i < 0, \beta \in [0;1] \text{ and } i > 0.$$

Equation [5] means that workers' disposable income, according to my broad definition of welfare systems, is composed by monetary wage, social wage (monetary transfers and real public provisions), and corporate benefits [Atkinson 1999: ch.3]. If public expenditure and social wage decrease, then workers try to keep on their own real consumption by purchasing market social provisions or by bargaining firm-funded insurance schemes [Esping Andersen 2002: 25]. To the extent that workers enjoy enough market power, both solutions lead to higher labour costs, the former via higher monetary wages to increase out-of-pocket spending, and the latter via higher corporate social insurance.

The net effect of social expenditure on the imitation rate is negative, because higher taxes and labour costs raise export prices and reduce imitation capability in perfectly competitive markets, independently of the values of structural variables:

$$[8] \quad \left| \frac{\partial \eta}{\partial t, w} \right| > \frac{\partial \eta}{\partial B_\eta}$$

Then equations [3], [4], [5], [6] and [8] imply:

$$[9] \quad \eta = \tilde{\eta}(B_\eta, t, w) = \eta(S, \varepsilon, \delta)$$

where partial derivatives are $\eta'_B > 0$, $\eta'_{t,w} < 0$, $\eta'_S < 0$, $\eta''_S < 0$, $\eta'_\varepsilon > 0$ and $\eta'_\delta < 0$. Conversely, the net effect on the innovation capability is positive, because the negative effects of taxes and contributions on production prices are outweighed by productivity-enhancing social expenditure allowed by taxes and contributions themselves, independently of the values of structural variables:

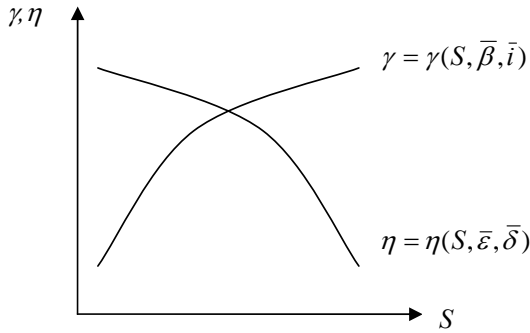
$$[10] \quad \frac{\partial \gamma}{\partial B_\gamma} > \left| \frac{\partial \gamma}{\partial t, w} \right|$$

Then equations [3], [4], [5], [7] and [10] imply:

$$[11] \quad \gamma = \tilde{\gamma}(B_\gamma, t, w) = \gamma(S, \beta, i)$$

where partial derivatives are $\gamma'_B > 0$, $\gamma'_{t,w} < 0$, $\gamma'_S > 0$, $\gamma''_S < 0$, $\gamma'_\beta > 0$ and $\gamma'_i < 0$. The advanced economies are obviously not so simple, but hypothesizing net costs for the traditional sector and net benefits for the innovative sector allow us to represent the contrasting costs and benefits of social expenditure on complex economies [Figure 2].

Figure 2: Imitation and innovation capabilities as a function of total social expenditure

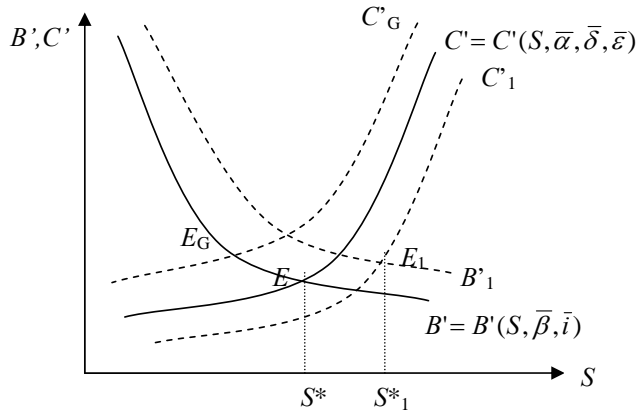


By derivating [2] and inserting [9] and [11], we get the long-term structural competitiveness, proxied by the growth rate of productivity (\dot{a}), as a function of total social expenditure:

$$[12] \quad \dot{a} = \tilde{a}(\alpha\eta + \gamma) = \dot{a}(\alpha\eta(S, \varepsilon, \delta) + \gamma(S, \beta, i))$$

where partial derivatives are $\dot{a}'_\varepsilon > 0$, $\dot{a}'_\delta < 0$, $\dot{a}'_\beta > 0$, $\dot{a}'_i < 0$. The sign of derivative \dot{a}'_S is not self-evident, because it depends on the combination of positive effects on the innovation sector and negative effects on the traditional sector. Then maximizing equation [12] means to look for the level of S (call it S^*) for which the welfare structure allows net marginal benefits for the innovation sector equal to the net marginal costs for the traditional sector [Figure 3].

Figure 3: Marginal costs and benefits as a function of total social expenditure



It would be harmful to decrease social expenditure below the value of S^* (or raising it beyond that value), because productivity growth would be slower. The first order condition is

$$[13] \quad \alpha \eta'_s(\varepsilon, \delta) + \gamma'_s(\beta, i) = 0$$

It holds when marginal costs C' on price competitiveness (its first term) are equal to marginal benefits B' on non-price competitiveness (its second term):

$$[14] \quad \gamma'_s(\beta, i) = |\alpha \eta'_s(\varepsilon, \delta)|$$

The optimal expenditure level S^* (equilibrium E) is not stable in the long term. The degree of globalisation δ increases shifting C' upward (C'_G), so that social expenditure is more difficult to finance. But the resistance of *status quo* prevent taxes and expenditure from being cut in the new equilibrium E_G , because of strong electoral incentives, institutional or informal veto points, and path dependency [Pierson 2001: 411-419]. This makes S^* a disequilibrium where marginal costs are higher than marginal benefits ($|C'_G| > B'$). In order to overcome such a welfare crisis, there are two solutions: either by lowering social and political resistances to rolling back social expenditure, or by raising marginal benefits and by reducing marginal costs. The latter implies the improving of the expenditure effectiveness (higher ε), the specializing in high-tech sectors (lower α), or the increasing of productive items in comparison to purely consumptive expenditure (higher β), while it is more difficult to change i or to influence δ .

If the equilibrium level of social expenditure (S^*) is high, then high social expenditure is sustainable thanks to its well-designed structure and the favourable economic environment. In Figure 3 the probability that S^* is high is greater when marginal benefits shift upward from B' to B'_1 or marginal costs shift downward from C' to C'_1 , according to suitable values of the structural variables in the model. Main factors raising marginal benefits or lowering marginal costs are the following, which can be proxied by suitable structural indicators. a) Low distance α from the frontier, since it would raise the weight of innovation in comparison to imitation. Therefore the importance of the costs on the imitation sector would decrease. This is possible when economic systems are biased toward modern high-technology and R&D-intensive sectors. b) High share β

of productive expenditure¹, since it would improve the welfare systems structure, by increasing their ability to promote quality productions and widespread creativeness and innovation. c) Low degree δ of globalisation, because international competitiveness would be less important and therefore the financial costs of social expenditure would decrease. It could only be possible in supranational coordinated policies, e.g. a stronger European Union whose continental political level would be closer to the global economic level. d) High expenditure effectiveness ε , since benefits are indirect and long-term, so they need low distortions, stickiness, wastes and administrative costs to appear. e) Low discount rate i , because costs are rather immediate but benefits are delayed even for generations (e.g. human capital), so that the latter need to be evaluated as important as their immediate costs².

We can refer the curves B'_1 and C'_1 to Continental Europe as compared to the US. In the latter the distance from the frontier is 0, because technological indexes show the US are the best performing country. But in the former C' shifts downward thanks to its greater expenditure effectiveness³ and B' shifts upward thanks to its lower discount rate⁴ and its higher share of productive expenditure. Then the expenditure equilibrium level could be a little higher in Europe rather than in the US, as empirical evidence demonstrates. The net total social expenditure (public + private – taxes on benefits + tax breaks for social purposes) is actually slightly higher in Europe (in Italy 25.3% and in Germany 28.8% in 1997) than in the US (23.4%) and in the UK (24.6%) [Adema 2001].

The structural variables in the model have to be analyzed in order to discuss whether welfare systems are actually consistent with economic competitiveness in different countries and years. Notably Italy seems to be entrapped into a low-growth, low-innovation and low-fertility equilibrium. This could confirm from the welfare system side the growing literature about the so-called Italian economic decline. Scholars stress some important problems in comparison to the rest of Europe: sector specialization in medium-low technology (higher distance α from the frontier), persistent corruption and criminality as well as slow parliamentary and administrative procedures (lower effectiveness ε of public expenditure), too high monetary transfers and too low incentives for young people and women to increase their participation into the workforce (lower productive expenditure β), low fertility rate and fast ageing (higher discount rate i of future benefits). Unlike the rest of Continental Europe, the Italian welfare system could be not consistent with economic efficiency at high expenditure levels. Because of higher marginal costs (C'_{ita}) and lower marginal benefits (B'_{ita}), in Italy the present-day social expenditure (call it S_{ita}) could be unsustainable as compared to its equilibrium level (S^*_{ita}) [Figure 4]. It could be too much high indeed, similar to the other large and advanced European countries, whose marginal costs and benefits

¹ Notably socioeconomic infrastructures, knowledge and health accumulation, and incentives for women and young people to enter into the workforce [Zagler and Dürmecker 2003: 405-408].

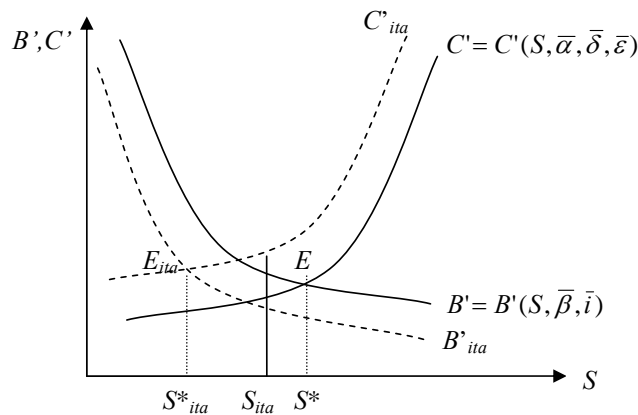
² The discount rate depends on demographic, cultural and economic reasons: it is high when ageing is high and fertility is low, individuals do not feel collective long-term responsibility, and financial ‘short-termism’ reduces the long-term horizon of economic agents.

³ E.g. healthcare expenditure in the US is very high, but its coverage and performance are low; Anglo-Saxon pension funds are more costly than European PAYG because of their administrative costs, and their performance are more variable.

⁴ European coordinated economies (‘insider systems’) are mostly aimed to improve long-term process innovation, while liberal Anglo-Saxon economies (‘outsider systems’) are aimed to favour short-term product innovation [Hall and Soskice 2001: 14-33, Block 2002].

(represented by the generic curves B' and C') allow a higher equilibrium level (S^*).

Figure 4: *Effect of the Italian economic decline on marginal costs and benefits*

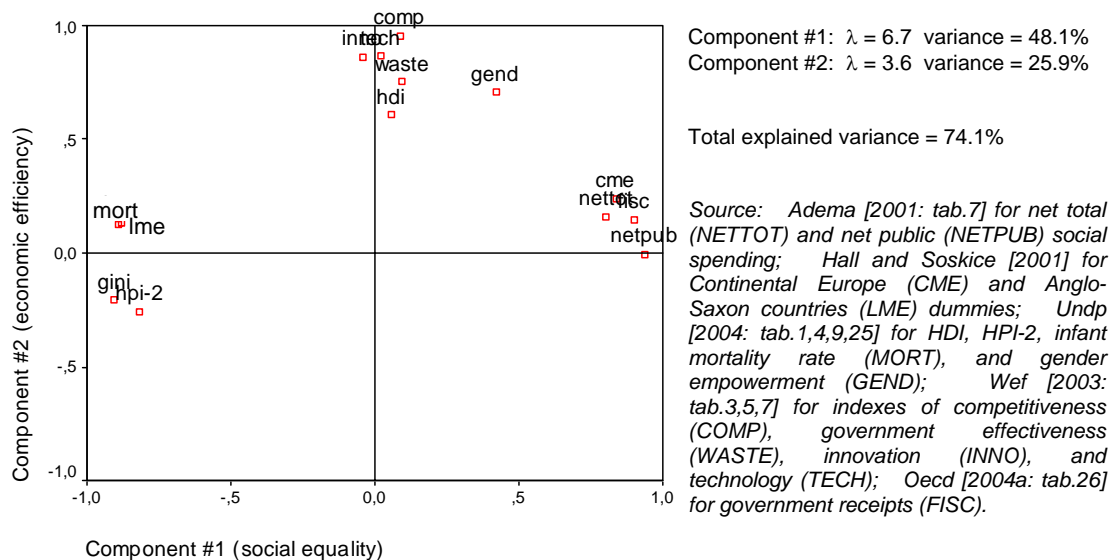


4. Empirical evidence

Some empirical analyses of the theoretical relationships between social and economic variables, as sketched in the above model, yield interesting outcomes.

1) The Principal Component Analysis (PCA) suggests no empirical evidence that competitive and innovative effort of the advanced countries is significantly correlated to their social expenditure or their taxation levels [Graphic 1].

Graphic 1: *Loadings of socioeconomic variables on the 1st and 2nd component of PCA*



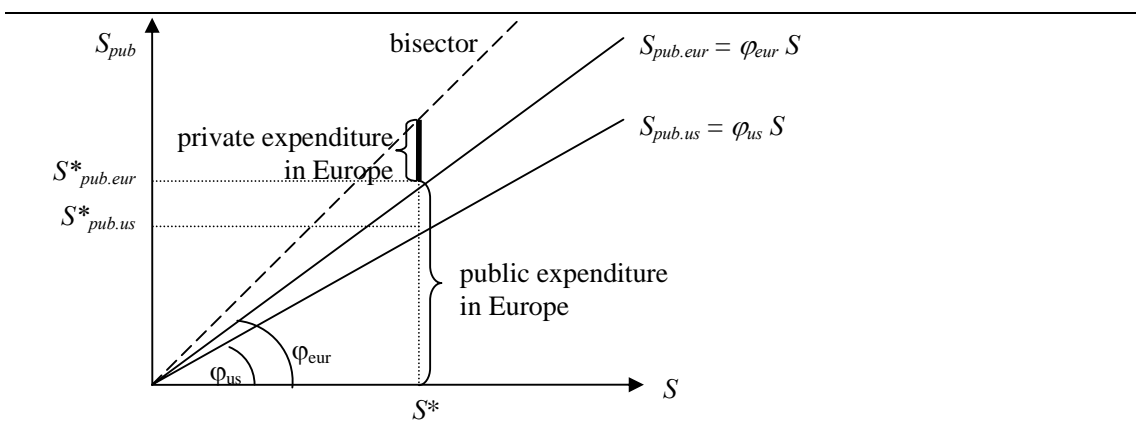
The first component ('social equality') is positively characterized by total and public social expenditure, government receipts and the European dummy, and negatively by some indexes of social uneasiness (human poverty, Gini, infant mortality rate) and the Anglo-Saxon dummy. The second component ('economic efficiency') is positively characterized by competitiveness, technology, innovation, government effectiveness, gender empowerment and human development. Therefore equality and efficiency do not

seem to be alternative. A lower public expenditure implies a higher, often less effective and more distortionary, private spending but the shares of national product devoted to social purposes are similar. As a consequence, even if their welfare state levels are very different, the US and Finland are strong innovators and global exporting countries, because what matters is total expenditure and its structure [Graphic A.1]. On the contrary, the Italian badly-designed social expenditure could be harmful for both price and quality competitiveness, even if the expenditure level is lower than the European average.

2) Different public social expenditure levels (S_{pub}), which in the European coordinated economies are higher than in the Anglo-Saxon liberal economies, derive from different histories, political systems, degrees of openness and social affinities [Lindert 2004a: 179-190]. Notably in the US increasing income redistribution would transfer money from well-off white people to poor Afro- or Latin-Americans, by so limiting the identification between taxpayers and recipients (*‘that could be me’*). This yielded different preferences about public redistribution, represented by the share of public social expenditure out of the total (φ), higher in Europe rather than in the US⁵ [Figure 5, Graphic A.2]:

$$[15] \quad S_{pub} = \varphi S \quad \text{where} \quad \varphi_{eur} > \varphi_{us}$$

Figure 5: *Public social expenditure as a function of total social expenditure*



Since the difference derives from institutional, social and political preferences, it does not imply *a priori* different innovation, productivity or competitiveness performances. Some scholars wonder whether a twofold equilibrium holds. In the US product innovation driven by individualism, on the ground of low public expenditure and equality, and market competition among firms. In Continental Europe process innovation driven by social solidarity instead, on the ground of high public expenditure and social inclusion, and strategic interactions between firms, institutions and trade unions [Barr 2001: 268-270, van der Ploeg 2003, Bénabou 2004].

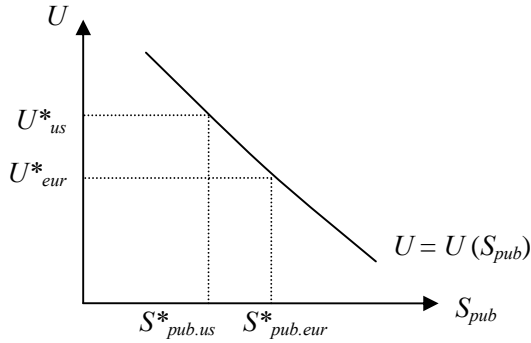
3) However, different levels in public expenditure or taxation have an impact on the effective protection from social needs and the distribution of social well-being. The Europeans are more protected than the Anglo-Saxons thanks to their more equitable

⁵ Net total social expenditure being equal, public expenditure is higher in Continental Europe (φ_{eur} between .92 and .97, the Netherlands excluded) than in the US ($\varphi_{us}=.70$) and in the Anglo-Saxon countries, so that European private expenditure is lower [Adema 2001].

welfare system. A number of indexes of social uneasiness (U), proxied by the UNDP human poverty index for advanced countries (HPI-2), are negatively and significantly correlated with fiscal receipts or public social expenditure [Figure 6, Graphic A.3]:

$$[16] \quad U = U(S_{pub}) \quad \text{where } U' < 0$$

Figure 6: Social uneasiness as a function of net public social expenditure



This is not only a social problem, because an unfair access to the welfare system limits its redistributive effectiveness, then harming the channels through which some welfare elements become productive factors for the economic system.

4) The econometric analysis suggests that some structural variables are actually correlated with the social expenditure level [Table A.1]. The estimation model for a panel of 18 OECD countries from 1992 to 2001 is:

$$[17] \quad SL = \alpha_0 + \alpha_1 DISTF + \alpha_2 EFFS + \alpha_3 DISC1 + \alpha_4 DISC2 + \alpha_5 SPROD + \alpha_6 GLOB1 + \alpha_7 GLOB2$$

where we expect $\alpha_1 < 0$, $\alpha_2 > 0$, $\alpha_3 < 0$, $\alpha_4 < 0$, $\alpha_5 > 0$, $\alpha_6 < 0$ and $\alpha_7 < 0$. The analysis shows significant impacts on gross public social expenditure (SL) as well as ‘right’ signs for the distance from the frontier ($DISTF$), the degree of financial globalization ($GLOB1$), the share of productive expenditure ($SPROD$), and the insider-outsider index of the financial systems ($DISC1$)⁶ [Estimation 1]. Moreover, national institutions are relevant, because classifying countries into three homogeneous clusters allows to confirm previous outcomes by increasing explained variability [Estimation 2]. The affiliation of a country to the Anglo-Saxon (LME), Mediterranean (MED) or Continental (CME) economies implies then growing levels of social expenditure *ceteris paribus* [Estimation 3]. The different affiliation could also explain different effects of the change of some structural variables, notably $DISC2$, $GLOB1$ and $GLOB2$, whose higher impact is in the Mediterranean countries [Estimation 4].

⁶ On the contrary, expenditure effectiveness ($EFFS$), commercial globalization ($GLOB2$), and elderly to young ratio ($DISC2$) enter in the estimations with the ‘wrong’ sign or are not significant. The dependent variable is gross public social expenditure because of the lack of historical series for net total or public social expenditure in Adema [2001].

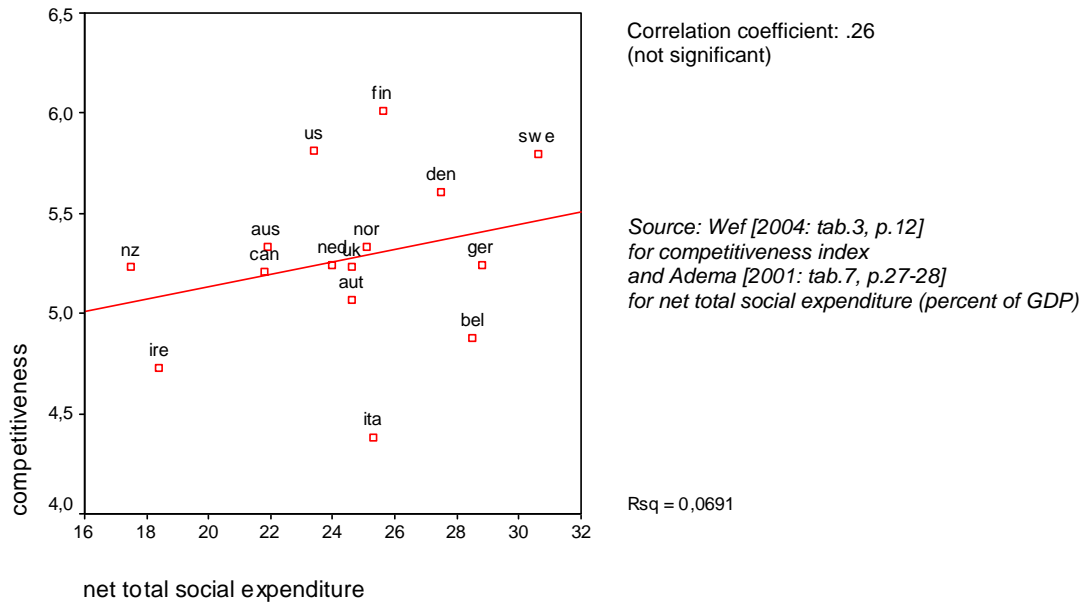
5. Concluding remarks

The above analysis seems to confirm the hypothesis that, when some socioeconomic structural conditions improve, high levels of social expenditure could be consistent with the economic constraints. Such a result empirically supports the crucial role of the design of welfare systems in the analysis of their costs and benefits on competitiveness. What matters, in order to gain long-term benefits higher than short-term financing costs, is not only the social expenditure level, but its structure as well. This holds when the welfare systems structure is efficient and designed to minimize distortions, disincentives and wastes, and at the same time to maximize incentives and productive items. Therefore adjusting and recalibrating our welfare systems seems to be the priority focus in reforming social protection, according to the opposite pressures on demand and supply, rather than the alternative between rolling back the welfare state and the defence of its present level. As a matter of fact, the former would imply higher, and not necessarily more efficient, private social spending, while the latter does not guarantee high-quality social schemes.

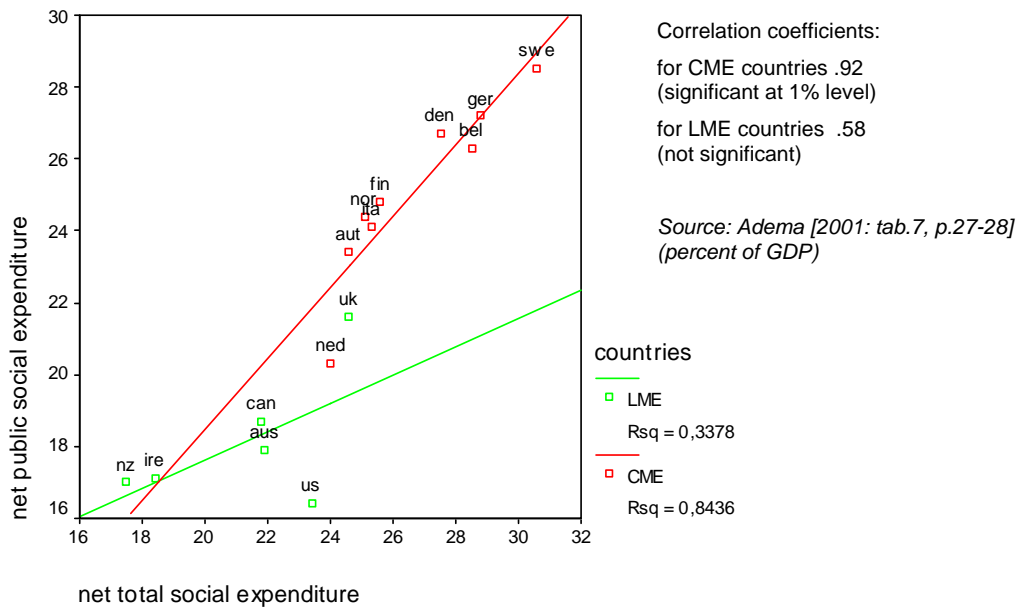
So it is possible to get some hints for outstanding stylized facts. 1) Economies with different welfare systems can be strongly innovative because net total social expenditure and its structure are more important than public social expenditure. The net total level is the share of national product devoted to social purposes, quite similar in the advanced countries. This because all of them are challenged by similar issues and growing needs: higher exposition to international shocks, more flexible jobs, ageing, less standard families. 2) Very different taxation and welfare state levels depend on historical preferences on public or private social expenditure, according to different histories, political systems, degrees of openness and social affinity. Although via different growth paths, such differences usually do not prevent high economic efficiency and competitiveness, as well as product or process innovation. 3) Globalisation, technological change, and demographic transition imply strong pressures on social expenditure, by raising its financing costs despite its growing demand. However, actual levels are stable, so yielding a disequilibrium where marginal costs exceed benefits. If overcoming *status quo* resistance is not feasible, then it is necessary to reduce marginal costs or to increase benefits. In the short term this means a productive specialization more biased toward high-technology sectors, a greater share of productive expenditure, a more effective expenditure. In the long term this means a supranational coordination of economic policies, a slower ageing, and less political and cultural 'short-termism'. 4) Strong social protection and high social expenditure levels can be then sustainable and even efficiency-enhancing, according to suitable socioeconomic conditions. In Italy such conditions could be not met, because of welfare schemes not aimed to support productive and effective expenditure, and sector specialization biased toward medium-low technology. The risk of decline could then be great in Italy not only in the production side, related to firms and markets structure, but in the welfare side as well, related to the capability to satisfy social needs which are at the very same time productive factors and preconditions for the economic growth. Therefore, Italy needs political actions to break its low-growth, low-innovation and low-fertility vicious circle, and to approach the socioeconomic conditions of the other great European countries.

Appendix: empirical relationships in some OECD countries

Graphic A.1: Competitiveness and net total social expenditure



Graphic A.2: Net public and total social expenditure



Graphic A.3: Social uneasiness (proxied by human poverty index) and fiscal burden

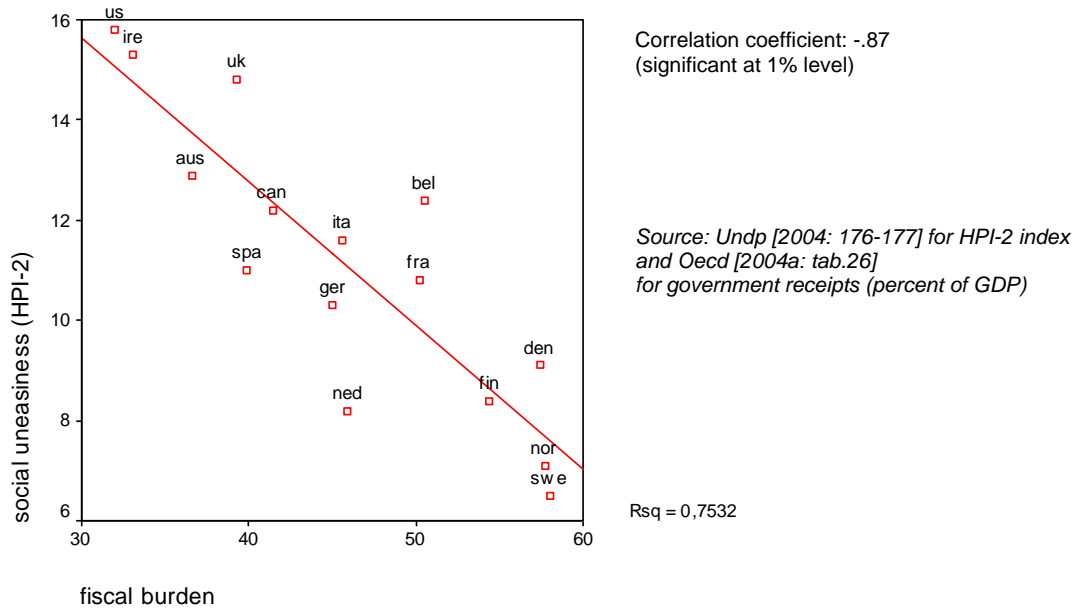


Table A.1: Panel regressions explaining social expenditure with structural variables

Variables	Pooled least squares [Estimation 1]	Generalized least squares [Estimation 2]	Pooled least squares with fixed effects [Estimation 3]	Heterogeneous panel (SURE) [Estimation 4]
C	3.89 (.56)	2.50 (.38)	[see fixed effects below]	15.86*** (3.02)
DISTF	-3.35*** (-5.18)	-3.00*** (-4.73)	.19 (.36)	3.13*** (6.82)
EFFS	4.89 (.59)	5.59 (.71)	-.50 (-.08)	-7.86 (-1.24)
DISC1	-1.55*** (-3.71)	-1.49*** (-3.71)	.92** (2.30)	1.91*** (2.90)
DISC2	16.70*** (8.62)	18.27*** (9.56)	8.87*** (4.41)	
SPROD	42.74*** (5.38)	39.67*** (5.14)	31.38*** (5.14)	[see heterogeneous panel slopes below]
GLOB1	-.47*** (-2.98)	-.50*** (-3.28)	-.47*** (-4.19)	
GLOB2	3.50** (2.57)	3.18** (2.44)	1.77* (1.80)	
Adjusted R^2	.55	.67	.77	.77
S.E. of regress.	3.46	3.43	2.45	2.45
F-statistic	31.80 (.00)	53.49 (.00)	68.67 (.00)	---
Observations	180	180 (unbalanced)	180 (unbalanced)	180 (unbalanced)
Fixed effects for Estimation 3	LME	7.80 (1.54)	Wald test H0: LME=CME=MED H0: CME=MED	Chi-2 (prob.)
	MED	10.63* (1.87)		173.49 (.00)
	CME	16.29*** (3.03)		35.46 (.00)
Heterogeneous panel slopes for Estimation 4	DISC2_LME	9.76*** (2.62)	GLOB1_LME	-.45*** (-5.31)
	DISC2_CME	12.73*** (5.13)	GLOB1_CME	-.52** (-2.14)
	DISC2_MED	23.25*** (10.05)	GLOB1_MED	-2.89*** (-3.73)
	SPROD_LME	-21.69** (-2.40)	GLOB2_LME	5.12*** (3.58)
	SPROD_CME	42.87*** (4.40)	GLOB2_CME	.50 (.36)
	SPROD_MED	-34.55 (-1.62)	GLOB2_MED	-21.49** (-2.54)

Notes: Dependent variable: SL - t statistics in parentheses

*** denotes significance at the 1% level ** at the 5% level * at the 10% level

Source: *Wef [2003: tab.7] for DISTF, Who [2000: annex tab.10] for EFFS, Block [2002: tab. A.1] for DISC1, Oecd [2002: tab.GE2.1.A-B] for DISC2, elaboration on Oecd [2004b] for SPROD, Lane and Milesi-Ferretti [2005] for GLOB1, Wto [2004: appendix tab.A6-A7] for GLOB2*

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