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SOCIAL PROTECTION AND HUMAN CAPITAL:
TEST OF A HYPOTHESIS

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Abstract

The claim of this paper is to investigate the relationship between social protection and the investment in human capital. The idea is that investment in human capital is risky and therefore, as a prerequisite, needs some kind of protection as insurance. Investments in specific human capital, in particular, are very risky and require a special protection so as not to be avoided. An attempt is made to study the micro foundations of this relationship in depth which afterwards moves on to a macroeconomic analysis. Here a strong link is found between the levels and types of social protection and the skill profiles of a country (as predicted). The clusters we find seem to be in accordance with existing literature on 'varieties of capitalism'. The last stage of this work is a hypothesis in the opposite direction of the nexus: how the choices of workers and firms influence the institutional framework (endogeneity of institutions of the welfare state). The result of this network of relations seems to be the formation of several organizational equilibria (and not a global convergence) in which institutions shape agents' behaviour and, at the same time, agents, through their policy preferences, reinforce existing institutional infrastructures.

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INTRODUCTION

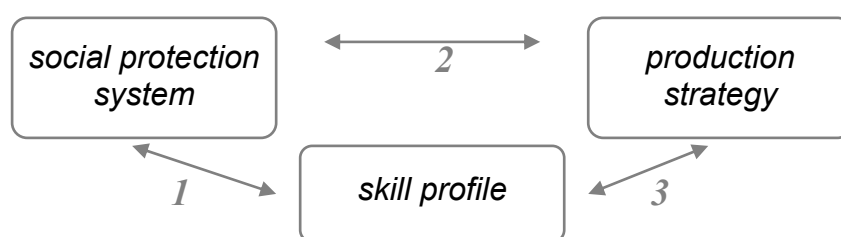
In defining the framework of this paper, we should make reference to the complex institutional complementarities between different production regimes and social protection systems. The key for exploring these links is investment in human capital. In other words «different aspects of the welfare state fit together and fit with different aspects of the production regimes, in particular their labour market components» (Huber and Stephens, 1999: 3). Yet they warn that «this *fit* ... is not a one-to-one correspondence between a whole configuration of welfare state and production regimes».

We do not have a clear understanding of *how* different kinds of welfare states interact with different models of the economy. This paper is an attempt to overcome this gap for a special area of research.

The first step of this analysis distinguishes the varieties of capitalism and draws a map of them. The most important classifications we have considered are those between coordinated and uncoordinated economies (Soskice 1999; Hall and Soskice, 2001) and the welfare regimes (Esping-Andersen, 1990).

The next step explains the nexus between social institutions and economics. An attempt is made to study the micro-foundations of how institutions «shape agents' behaviour and reinforce existing institutional infrastructures» (Ebbinghaus and Manow, 2001: 3): a certain supply of social protection (which differs from the other in level and type) should produce effects on workers' choices, in terms of their human capital investments, and on firms, in terms of the production strategies chosen (in accordance with the principle of comparative advantage).

Let's try to simplify these concepts using a scheme. It should be remembered that human capital investment remains the key in exploring this network of relations.



More specifically, the welfare state functions as a social insurance affecting the risk-taking (Sinn, 1996) and so even the acquisition of skills, an investment that elsewhere could be avoided. The level and types of social protection are then linked to different levels and kinds of skills (Estevez-Abe, Iversen and Soskice, 2001). The relation is described by arrow 1.

In addition, different institutional frameworks create the conditions for different production strategies (arrow 2), and there is not, in general, a better strategy

compared to others¹: when size and typology of public intervention varies, the dominant model of capitalism varies too. We refer to the concept of comparative advantage (Hall and Soskice, 2001) which states that different production strategies have strategic complementarities with different institutional configurations, finding a competitive advantage in and from that (Streeck, 1992; Piore and Sabel, 1984).

Different production strategies are, in turn, linked to a different set of required skills and human capital diffusion in the workforce (Snower, 1996) showing, once again (even if indirectly), the social protection-human capital nexus (arrow 3).

Empirical evidence of the relation predicted is provided in the third section of this paper and a comparative analysis among European countries (as in Estevez-Abe, Iversen and Soskice, 2001) is carried out. The correspondence predicted finds confirmation in the data and allows to identify clusters of countries which 'resemble' each other, all in accordance with the literature on the varieties of capitalism described.

Finally the study of the other causal link of the nexus will be discussed: how the social policy preferences of firms and workers vary in accordance with the skill assets acquired and the production strategies adopted, respectively (Iversen and Soskice, 2001; Mares, 2001). In this sense, workers and firms do not suffer the effect of a certain *supply* of social protection but express a certain *demand* (higher or lower, with more or less attention to certain aspects).

The two approaches are not necessarily exclusive and it could exist a double nexus of causality: a sort of «organizational equilibria» (Pagano, 1993).

In this paper we do not want to emphasize particular therapeutic qualities of the *welfare state* but only highlight how the concept of social protection involves many aspects of a whole capitalistic system and an evaluation of its effects and costs must go beyond certain over-simplified calculations.

The paper is set out as follows. Section I describes the models of capitalism, section II characterizes the organizational equilibria and Section III shows the empirical evidence and how it is built. Finally the other direction of the nexus (the role of policy preferences of the agents) is discussed as are the limits of this analysis, with the purpose of making a further contribution again to the increasing literature on this topic. A full description of variables used is reported in the appendix.

¹ «Different institutional conditions may give rise to different production patterns that may respect functionally alternatives, and sometimes functionally equivalents, responses to common economic challenges» (Streeck, 1992: 3). That's in contrast with the hypothesis of 'best practice' in the long period. All these concepts shall become clearer in the next pages.

1. VARIETIES OF CAPITALISM

Literature on varieties of capitalism has received growing interest among economists. The following is an attempt to make a classification to introduce concepts useful to the analysis. The discriminatory elements concerns the *level* and the *type* of state intervention in the economy.

1.1 *Coordinated and uncoordinated economies*

Challenging the thesis of convergence, several comparative scholars have looked at the resilience and specificity of national capitalist models, contrasting the uncoordinated Anglo-American market economies with the German, Japanese or Scandinavian coordinated market economies (Crouch and Streeck, 1997; Hollingsworth and Boyer, 1997)².

The institutional landscape provides constraints on the behaviour of economic agents and offers them specific opportunities, limits their strategic alternatives for individual and collective action, and encourages them to employ certain strategies rather than others. These linkages represent, in game-theoretic language, *strategic complementarities* (Milgrom and Roberts, 1994; Soskice, 1999), that are mutually reinforcing and enabling institutional configurations. Thus «two institutions can be said to be complementary if the presence (or efficiency) of one increases the returns (or efficiency) available from the other» (Hall and Soskice, 1999: 10). Although this perspective has the danger of assuming too much coherence and purposefulness, it is a useful heuristic for identifying particular institutional equilibria as they co-exist, co-evolve in time and place and have reproduced and reinforced each other by positive feedback.

This is how Hall e Soskice (2001) present the juxtapositions of two polar models³:

a) In *coordinated market economies*, firms depends heavily on non-market relationship to coordinate their endeavours with others agents and to construct their core competencies. The financial governance is based on a long-term scheme: access to this kind of ‘patient capital’ makes it possible for firms to retain a skilled workforce through economic downturns and to invest in projects generating returns only on a long-term basis⁴. The production strategies requires continual training of

² They are defined even as LMEs (Liberal Market Economies) in which the coordination happens mainly through the market and CMEs (Coordinated Market Economies) in which even institutions, types of relation and public policy play an important role.

³ Today’s comparative political economy is marked by other juxtapositions of polar models: fordist vs. specialised production (Piore and Sabel, 1984), Anglo-Saxon vs. Rhenish capitalism (Albert, 1993), deregulated vs. institutionalised political economies (Crouch and Streeck, 1997).

⁴ In this system there is a more developed network of relation between investors, suppliers, customers, and through this way funding does not depend on quarterly balances, they are able to obtain information about the firms, to monitor the production activity and, eventually, to sanction

qualified workforce, and a continual process of evolution of the production line. However, companies that adopt such strategies are vulnerable to the ‘hold up problem’ by their employees and the ‘poaching’ of skilled workers by other firms. The answer to this problem is a strategy that equalizes wages at equivalent skill levels across an industry (coordinate bargaining): this system makes it difficult for firms to poach workers and assures that the latter are receiving the highest pay in return for the serious commitments that they are making to firms. The complement to these institutions, at company level, is a system of work councils made up of elected employee representatives endowed with considerable authority over layoffs and working conditions. By providing employees with security against arbitrary lay-offs or exploitative changes in working conditions, these works councils encourage employees to invest in company-specific skills and extra effort. A broad and publicly subsidized training system completes the supply of a great share of skilled workers.

b) In *liberal market economies*, firms coordinate their activities mainly via hierarchies and competitive market arrangements. The financial system is more ‘sensitive’ to short-term profitability. Top management normally has unilateral control over the firm, including substantial freedom to hire and fire. Firms are under no obligation to establish representative bodies for employees such as work councils and trade unions that are generally weak. The presence of highly fluid labor markets influences the strategies pursued by both firms and workers. Liberal market economies make it relatively easy for firms to release or hire labor in order to take advantage of new opportunities but also makes it less attractive for them to pursue production strategies based on promises of long-term employment. They encourage individuals to invest in general skills, transferable across firms, rather than company-specific skills and in career trajectories that include a substantial amount of movement among firms.

In more general terms, firms and workers, in coordinated market economies, should be more willing to invest in specific and co-specific assets (whose returns depend heavily on the active cooperation), while in liberal market economies they should invest more extensively in switchable assets.

Empirically, and obviously, some political economies seem to be hybrid cases that are situated between or even derive from the two conceptual poles of coordinated vs. uncoordinated market economies. A national economy may be considered as a mixed case if there are sub-systems, regions or economic sectors that divert from the dominant model⁵.

it. The information flow is sustained by the internal structure of the firms which favours *consensus decision-making*. Rarely, in fact, the managers have the capacity of unilateral actions as happens in Anglo-Saxon economies.

⁵ For instance, the ‘Third Italy’ with its dense regional network and flexible specialisation diverts from the economy in northern and southern Italy. To juxtapose coordinated and uncoordinated market economies is not to deny that we find substantial variations between continental European, Scandinavian and Mediterranean coordinated economies, and it is certainly possible to discern some difference among Anglo-Saxon market economies.

Table 1.1: *uncoordinated vs. coordinated market economies:*

	<i>Uncoordinated market economy</i>	<i>Coordinated market economy</i>
Prime examples	USA, UK	Germany, Japan
Financial and economic governance	Short-term financial markets equity financing (shareholder value); limited business coordination, antitrust laws	Long-term patient capital debt financing (stakeholder value); strong business associations, inter-company networks
Production system	Low-skill production; mass products; numeric flexibilisation	High-skill production; high-quality products; flexible specialisation
Management—labour relations	Decentralised bargaining; contentious workplace relations	Coordinated bargaining; statutory worker representation
Training and employment	General education; short tenure, high turnover and inter-firm mobility	Vocational training; long tenure, low turnover and intra-firm mobility

Sources: Ebbinghaus (1998); Hall and Soskice (2001); Hollingsworth and Boyer (1997).

1.2 *Welfare regimes*

In the Esping-Andersen's approach, welfare state is seen as «the principal institution in the construction of different models of post-war capitalism» (Esping-Andersen, 1990: 5), and varieties of *welfare regimes* is attributed to different principles and approaches to public intervention⁶.

Going beyond the quantitative approaches that measures welfare state expansion only by social expenditures, Esping-Andersen evaluates the different welfare regimes using three multifaceted dimensions: *a)* the degree of *de-commodification*: to what extent are benefits and services provided without any consideration of market forces, and to what degree do citizens have social entitlements that make them independent of market forces? *b)* The system of stratification (i.e., inequality in outcome) which highlights important differences in solidarity or social risk pooling. *c)* The state – market – family mix (i.e. the form and locus of social protection): is the state, the market, voluntary associations or the family the main provider of social support by transfers and services? In fact, welfare regime analysis does not presume that the welfare state is the main provider.

Esping-Andersen's three worlds of welfare capitalism do not only reflect different social protection principles, they are the outcome of unique legacies of state-

⁶ The concept of 'regime' underlines that the welfare states are not a simply aggregation of distinct social programmes: «to talk of a regime is to denote the fact that in the relation between state and economy, a complex of legal and organizational features are systematically interwoven» (Esping-Andersen, 1990: 2).

building and specific socio-political forces (and ideologies) that have put their stamp on welfare states.

Table 1.2: the three 'welfare regimes' according to Esping-Andersen

	<i>Liberal</i>	<i>Conservative-corporatist</i>	<i>Social-democratic</i>
Prime examples	UK	Germany, Italy	Sweden
Degree of decommodification:	minimal	high	Maximum
Welfare State:			
Dominant locus of solidarity:	market	family	state
Social rights:	individual	employment related	universal
Benefits:	flat-benefits	contribution-related	redistributional
Role of :			
Family:	marginal	central	marginal
Market:	central	marginal	marginal
State:	marginal	subsidiary	central

Source: Esping-Andersen (1999)

Esping-Andersen distinguishes three political traditions as important sources of welfare state development: the first is a liberal conception of a residual (or smithian) welfare state that should not intervene in free markets by limiting work incentives and individual choice. It provides relatively low flat benefits to all citizens in order not to interfere with individual self-help and market incomes, and thus represents a relatively low level of de-commodification.

Then we have corporative welfare state, linked to the concept of subsidiarity and to a paternalist and conservative state tradition. Its historical point of reference is the *Bismarkian* social protection model, based on the concept of solidarity among workers. It's an intermediate model between the liberal and social democratic one.

Finally there is the social-democratic conception of a universalistic and redistributive welfare state. It is identified in economic literature taught as the *Beveridgian* system and it provides universal social benefits and extends public services to all citizens.

Despite criticism and the natural deficiencies of this kind of analysis, it remains true that Esping-Andersen's analytical framework has proven extremely helpful for the comparative study of welfare states. More recently, some comparative studies have challenged the limitation to three worlds of welfare capitalism, making strong cases for additional 'families of nations'. In particular they highlight the presence of a fourth model, the Mediterranean model (Ferrera, 1996), similar to the continental one but with less resources employed and where an important support function, such as a social institution, is carried out by the family.

I'll go back over this quick roundup of concepts in the third section, when a map of models will be drawn. Instead the main topic of the following part will be the micro-logic at the basis of welfare state-economy nexus, referring in particular to labour market and skill investment.

2. SOCIAL PROTECTION - SKILL PROFILE NEXUS

As transaction-cost theory became an important part of modern economic analysis (Williamson 1981), economists became more receptive to the role of information, trust, institutions and histories of cooperation. As a consequence comparative political economy literature now explains macroeconomic outcomes as being the result of individual choices by economic agents. This agent-centred institutional analysis often uses game theory to explain equilibria under particular institutional configurations and actor constellations. In other words we see the political economy as a terrain populated by multiple agents each seeking to advance his interests in a rational way in strategic interactions with others. The relevant agents, in this case, are workers, firms and governments.

The determining elements for workers' decisions on human capital acquisition process are singled out in *a*) the presence of a social insurance which favours risk-taking, and so investment in risky skills (Sinn, 1996) and *b*) market demand for human capital (Snower 1996). I'll analyze them in turn.

This is, naturally, only a rough approximation of the issues concerning human resources, individuals and the ways in which they interact. There are social and ethic issues which go beyond the simplification of the economic analysis⁷.

2.1 *The insurance effect of social protection*

Sinn (1996) has showed how social insurance can affect the individual in making risky investments (in human capital) otherwise avoided: this concept is known in literature as 'Domar-Musgrave effect' after the names of the two economists who studied it (1944).

While the welfare state has come under heavy attack, blamed for reducing international competitiveness, for lowering work incentives and for reducing the economy's growth rate, an institution, in short, that makes the distribution of the slices more equal but reducing the size of the cake⁸, here we underscore the beneficial effect as social insurance in an uncertain world (Atkinson, 1996).

Even a reduction in loss prevention brought about by insurance can be seen as a beneficial effect: under the protection of the welfare state people can avoid costly private protection measures like precautionary saving, job diversification, ultra-

⁷ About the formal abstraction of the job relationship we have to keep in mind the warning of Simon (1951): "...the way in which classic economic theory look at job contract and management of work implies so greater abstraction that ignores the more evident aspects of real situations."

⁸ Redistribution politics are imagined as a 'holed bucket': income is transported from the richer to the poorer in an holed bucket and part of that will be lose during the journey (Okun, 1975: 48). Economists didn't have, always, the same vision of the welfare state but «the changed political climate imply that critical economists get higher rewards than sympathetic ones» (Sandmo).

tenured employment contracts, private pensions or health insurances. Thus they can dare to change jobs, move to another house, seek employment in risky industries, or specialize in a rare profession.

Estevez-Abe, Iversen e Soskice (2001), in accordance with the insurance hypothesis, propose and articulate a new approach to the welfare state. Here different types of social protection are complementary to different *skill equilibria*. Three types of skills, which differ from one another with regard to specificity and transferability (and so for their riskiness), are identified:

a) *Firm-specific skills* are those that are valuable to the employer who carried out the training but not to other employers. They are not portable but specific to a particular working environment.

b) *Industry-specific skills* are usually acquired through apprenticeship and vocational school. These skills, especially when authoritatively certified are recognized by any employer within a particular industry.

c) *General skills* are the most liquid; they are recognized by all employers and carry a value that is independent of the type of firm or industry.

A rational worker must consider these factors in making skill investment decisions: the initial cost of acquiring the skills, the future wage premium associated to those skills and the risks related to losing the current job⁹.

In this scheme *Employment protection* refers to institutionalised employment security. The higher the employment protection, the less likely that a worker will be laid off even during economic downturns or arbitrarily by the employer. *Unemployment protection* means protection from income reduction due to unemployment, and can thus reduce the uncertainty over the wage level throughout one's career.

This resuming scheme may now be introduced:

Table 2.1: the hypothesis, the relation between social protection and skill profiles

		Employment Protection	
		Low	High
Social Protection	High	1 high investment in transferable skills	2 high investment in skills (both specific and transferable)
	Low	3 low investment in skills (mainly general skills)	4 investment in firm-specific skills

Source: adaptation of the scheme of Estevez-Abe, Iversen and Soskice (2001)

The four areas identified are better explained as follows:

⁹ We are making the following assumptions about workers' economic behaviour: workers calculate overall return to their educational/training investment before deciding to commit themselves and choose to invest in those skills that generate higher expected returns (provided that the riskiness of the investments is identical). Ceteris paribus, people refrain from investing in skills that have more uncertain future returns (risk aversion).

1) The investment in transferable human skills allows the worker a certain mobility within the industry. Investing in such skills does not require employment protection *per se* but protection of skilled wages. A high replacement ratio, especially when the unemployment benefits are earnings-related, rewards the worker for his skill investment even when the worker is out of work. Benefit duration¹⁰ and the possibility to choose a 'suitable job' further reinforce this mechanism. A longer benefit duration permits the unemployed industry-specific skill-holders enough time to find another job that matches their skills, especially if they are permitted to turn down jobs that are outside their core competencies.

2) High protection both of employed and unemployed status allows, generally, an high investment in skills, both specific and industrial.

3) If there is little protection, regarding either employment or unemployment status, the best insurance against labour market risks for the worker is to invest in general, or portable, skills that are valued in overall labour market. Highly portable skills are less risky than highly specific skills because in the former case the market value of the skill is not tied to a particular firm or industry. Thus a rational worker will not invest his time and money in skills that have no remunerative value outside the firm or industry. In other words, in the absence of institutional interventions into workers' payoff structure, general rather than asset-specific skill acquisition represents the utility-maximizing strategy.

4) Firm-specific skills are, *ex hypothesi*, worthless outside that specific firm, and they therefore require a high level of employment protection in order to convince workers to invest in such skills. Since workers will only be paid the value of their non-firm-specific skills in the external market, the greater their investment in specific skills the greater the discrepancy between current wages and the wages they could fetch in the external market. In order to invest heavily in firm-specific skills, workers therefore need assurances that they can remain in the company for a long enough period to reap the returns on such investments (Lazear and Freeman, 1996; Osterman and Kochan, 1990). The implications of this consideration is high employment protection; at the same time, low protection, in the case of unemployment, could represent a lower incentive to abandon the firm or not to invest adequately¹¹.

¹⁰ The debate about such subsidies is controversial. Apart from ethic considerations (not secondary but here I'm discussing economic effect), some underscore their allocative efficiency (a better match between demand and supply), some, the important insurance function, some others again want to substitute them, yet in part, with occupational subsidies. The more sceptic ones see in such assistance forms the causes of the creation of an *underclass* which lives in a state of permanent poverty 'to the prejudice of nation'. This underclass is, as they say, «the undisciplined daughter of a father who does all one can do to spoil her: the *welfare state*». Thus, in this logic, such social politics incentive resignation, demoralization and cynicism (the unemployed do not look for a job because the unskilled one, he would be able to find, will guarantee him an income similar to whom obtained from an assistance programme).

¹¹ This the archetypal of the Japanese system: «credible firms are committed to job security and the external market is small so the worker has an incentive to take advantage of internal career opportunities by investing heavily in company-specific skills» (Estevez-Abe et al., 2001: 27).

2.2 *Social protection systems and production strategies*

Different institutional configurations create a competitive advantage for different production strategies. In accordance with that, reforms on welfare regulation do not carry on along the same direction but are constructed taking national specificity into account. An example comes from the process of regulation of labour market: «In Europe the divergences persist not only as a result of institutional infrastructures which come from the past but even because correspond to different strategies of the economic agents» (Regini, 2002: 2). Despite change drives are the same for all countries, the answers have not the same orientation. There is a basic tendency to make the entry in the labour market flexible but there are also exceptions and second thoughts. This would confirm the existence of institutional complementarities and different production models.

In Anglo-Saxon countries, flexibility has the role of a general principle of the functioning of the labour market, a criterion which drives all legislative or bargained measures. In Denmark and the Netherlands the flexibilization of the labour market (traditionally high) happened within a welfare protection context which was not reduced. In other European countries, on the other hand, the regulation of the labour market was conceived of as a limited and partial deviation from acquired criteria which are not questioned. That is as controlled experiments, with the goal of introducing an amount of flexibility in certain segments of the market, but never object of a generalized extension¹².

Snower (1996) highlights interactions existing between production strategies and human capital investment and the possibility of *low-skill e high-skill equilibria*. These definitions apply to economic systems that are, respectively, persistently characterized by low or high fractions of skilled labour forces. Different institutional configurations create a competitive advantage for different production strategies and, at the same time, the latter require and create a competitive advantage for different *skill profiles*.

In many economic sectors we can note, in fact, particular and interesting interactions between the kind of skills owned by workers (how the workforce is trained) and the kind of industrial organization. A correspondence, in other terms, between the supply of skills and the demand of the same (associated to the type of production chosen, to the capital utilization and to the labour organization). Snower examines the interaction between two mutually reinforcing externalities: a '*vacancy supply externality*' and a '*training supply externality*': if there is a small proportion

¹² In Italy flexibility was introduced with the CFL (1984) and interim jobs but, generally, such measures concern selected groups of people or geographical areas. The debate on labour reform is ardent and contrasted. In Germany temporary jobs were introduced since 1985, but successive legislative acts (1990, 1996 and 2001) has put narrower constraints to duration and renewal of such contracts. In France use of atypical contracts was liberalized in 1985-86, but in 1990 a new legislative act has restricted the use and increased the costs. In Spain temporary contracts were introduced in 1984 but even here, in 1990, government, with several interventions, has restricted the use of this instrument (Regini, 2002).

of skilled workers, firms have little incentive to provide *good-jobs*¹³, since such positions would be difficult to fill; but if few *good-jobs* are available, workers have little incentive to acquire skills, since such skills would be likely to remain unused and consequently insufficiently remunerated. Each of these externalities in isolation would lead the market mechanism to provide insufficient skills; when both are present simultaneously, the market failure is considerably amplified and there is the condition for the formation of a ‘trap’.

Snower also explains why, if we consider skills between the two extremes of general and specific type, firms and workers are no longer able to appropriate all the benefits from training, and thus the free market activity may provide insufficient training incentives. A firm that creates vacancies for good jobs thereby raises workers’ return to education and vocational training (by increasing the probability that skilled workers find good jobs), but the firm clearly cannot make these workers pay for this privilege¹⁴. A worker who acquires further education or vocational training raises firms’ returns from creating good job vacancies, but cannot make these firms pay for his education or training¹⁵.

Speaking of *low-skill trap* and *high-skill equilibrium* we could refer to the principle of comparative advantage which establishes that every country will specialize in the production and in the exportation of goods which it is able to produce at a lower cost (and in which it is relatively more efficient); on the contrary every country will import such goods which are produced at a higher cost (in which it is relatively less efficient)¹⁶.

If in a particular sector, for instance, only few skilled workers are available then employers are induced towards low-quality and *price-competitive* production. A sector of an economy can fall into a ‘*low-skill bad-job trap*’ characterized by a vicious cycle of low productivity and deficient investment in human capital, preventing the sector from competing effectively in the markets for *skill-intensive* products¹⁷. A more articulated social system (even more ‘constrained’) creates prerequisites instead for a pool of qualified workers, and so for a quality-competitive strategy.

Concrete examples are now made to show how different types of skills are associated with different product market strategies. A fordist mass production of standardized goods, for example, does not require a highly trained workforce.

¹³ Snower talks of *bad-jobs*, associated with low wages and little opportunity to accumulate human capital, and *good-jobs* characterized, on the contrary, by higher wages and higher skills.

¹⁴ The firm is compensated not for opening vacancies, but for filling them. The firm is not certain that vacancies are covered by skilled workers.

¹⁵ The worker is not compensated for his education, but for using his education to perform a skilled job. An educated worker is not certain to find a skilled job. Even if he does, he cannot appropriate the entire gain from his education, because of his employer’s market power in the wage formation process.

¹⁶ We can note an analogy, with some precautions, between what happens in the firm with job division and what happens at country level with productive specialization.

¹⁷ The production of a firm depends not only on work and capital but also on the average level of skills of that economy: a low level of certain skill incentive to a low use and low investment in such skills (*external production economies*).

Production work is broken into a narrow range of standardized tasks that only require semi-skilled workers. A diversified mass production (DMP) strategy, on the other hand, aims at producing a varied range of products in large amounts. This production strategy depends on workers capable of performing a wide range of tasks to enable frequent product changes in the line (Streeck, 1992). Finally a high-quality product market strategy requires a highly trained workforce with firm or industry-specific craft skills.

The different utility associated to different skill profiles involves in a different conduct as regards different social protection systems and it could lead on to self-reinforcing dynamics.

3. WHAT IS SEEN IN THE EMPIRICAL EVIDENCE

An empirical analysis is now carried out to find confirmation of the relation predicted. The exercise is a replica of the work of Estevez-Abe, Iversen and Soskice (2001), but here new indicators and a new data set are proposed. The classification is the result of a cross-section analysis (all the countries in the same period $t=1995$)¹⁸: we want to verify if a ‘correspondence’ exists between a map of countries according to the characteristics of social protection systems and a map of the same countries according to the *skill profile*.

3.1 *The four variables used*

First *microeconomic employment security* and *macroeconomic employment security*¹⁹ are singled out. Social protection regarding employment is a broad concept and has, in fact, both a macroeconomic and a microeconomic dimension.

Microeconomic employment security refers to the worker’s probability of not being unjustly or arbitrarily dismissed by the employer and thereby relates to a continuing employment relationship with a particular firm (Buechtemann and Walwei, 1999).

¹⁸ It’s a static analysis and we are not able to make considerations about ‘institutions in movement’. That could be a further research goal.

¹⁹ «The degree of macroeconomic employment security is primarily dependent on the overall state of the economy [...] (It) relates to the availability of employment opportunities in the economy as a whole and could be defined as a worker’s probability of staying in employment as long as he or she wishes to participate in the labour force». (Buechtemann and Walwei, 1999: 169). If we reason in terms of an evaluation of the investment in human capital, the sole possibility of finding ‘a job’ but ‘the job’ in which the worker is trained is not important, the protection of the unemployment status and, naturally, a low probability to be in such status.

The protection at a microeconomic level is linked to the idea of *specific assets*. Investments in specific skills present all the problems related to a specific asset and, in addition, the (ethic) impossibility to assert property rights on human capital. In fact, property and secure rights are the more effective device for inducing people to create, preserve and increase the value of their own assets.

In this particular case the firm is not the owner of the worker since he can leave the job. At the same time the worker does not have clear property rights on his own human capital because he can be dismissed (and thus expropriated) of such assets. We have the classical *hold-up* problem: each contractual party, ex post, may threaten not to use the services rendered by these investments in order to extract a greater share of the 'rent' or 'surplus value' resulting directly from the specificity of these investments (Blair 1999; Milgrom and Roberts, 1994; Williamson, 1995). The final result could be a sub-optimal investment in human capital²⁰.

Market inefficiencies can be overcome by institutions capable of imposing enforceable social constraints on rational market participants (Agell, 1999; Aoki and Dore, 1994; Buechtemann and Walwei, 1999).

Workers are reluctant to invest in specific skills without implicit agreements for long-term employment and real wage stability. Employers' promises are not, however, sufficiently credible by themselves. This is why social protection as governmental policy becomes critical. In the case of investment in specific skills, the worker demands a credible long term commitment, and an economy in which his skills are marketable, or, even better, 'external reassurance'. In such context employment protection could widen the worker's influence on own human capital, creating the conditions for a profitable investment in specific-assets.

There are no direct measures of *Employment Protection*, such as the risk of non voluntary dismissals, that can be used consistently across national cases. However, a series of indirect measures pertaining to legal and quasi-legal rules governing individual hiring and firing have been developed by the OECD to gauge the strictness of employment protection legislation (EPL).

Macroeconomic employment security relates to the availability of employment opportunities in the economy as a whole and could be defined as a worker's probability of staying in employment or finding new employment as long as he or she wishes to participate in the labour force. We also have to consider if the skills are transferable and if they have 'market' value, and the effect of a social insurance system that protects the worker during the search for a new job.

Social protection is calculated referring to three main concepts:

a) Social Spending as «by far the largest risk absorption device available» (Sinn, 1996: 2)²¹.

²⁰ We say that one agent is 'robbed' of his asset. A 'theft' represent a cost in terms of efficiency and not a simple transfer of resources. If I give up, for instance, the pleasure of having a radio in the car to not be robbed I'm giving up something which was good if the property rights were certain.

²¹ In this sense we could explain the expansion of government spending, the safe sector, in parallel with the globalization process which increases the risk exposure and uncertainty perceived (Agell, 1999; Rodrick 1996).

b) The Gini coefficient as indicator of income distribution.

A very common claim in the debate about the structure of European labour markets is that a compressed wage structure reduces people's incentive to acquire human capital. As governments and unions attempt to raise the income of those at the low-end of the skill distribution, they also reduce the return on investments in education and training; thus there will be too little investment in skill formation. This argument seems to be too simplistic for the complexity of the issue. If we consider, in fact, risk adverse agents, such as those who face uncertainty linked to the position they occupy in the salary distribution, then there is space for insurance incentives (given by a redistribution policy)²². The possibility to gain higher wages, that is to say an higher wage dispersion, on one hand produces an incentive to acquire more skills, but on the other hand increases uncertainty (creating the conditions for a suboptimal investment in human capital).

c) The set of instruments that mitigate the shock of the job-loss.

In this sense the following indicators are used: the criteria to accede to subsidies (qualifying conditions), the unemployment replacement rates (i.e. the portion of a worker's previous wage that is replaced by unemployment benefits) and the duration and dynamics of the subsidies. A high replacement ratio, especially when the unemployment benefits are earnings-related, rewards the worker for his or her skill investment even when the worker is out of work. A longer benefit duration allows the skilled unemployed enough time to find another job that matches their skills, especially if they are in a position to turn down jobs that are outside their core competencies. This ensures that their reemployment will generate the same skilled wages as before, simultaneously reducing downward pressures on the skilled wages. In short, these two components of unemployment protection – a high replacement ratio and 'secure' benefits – guarantee return on skill investment sufficient to compensate for economic fluctuations. In effect, unemployment protection increases employment security within the industry, as opposed to security within a particular firm.

Workers' skills are difficult to measure because they are not directly observed. However, a number of indirect measures can be relied on. First we try to reject certain generalizations with which, traditionally, the study of human capital is faced. Human capital was not considered as a sum of school years, or the 'volume of certificates' in relation to the population. The characteristics of skills acquired, the professional skills and the typology of training system were considered: the ECHP (*European Household Community Panel*, 1996) appeared to be the right source for the goal of this analysis.

²² «By reducing the variance of disposable income, redistributive taxation may improve welfare by providing an insurance effect in addition to the conventional equity effects. [...] The representative worker is willing to exchange a lower expected wage for a wage structure that offers insurance against uncertainty concerning who-one-will-be in the wage distribution» (Agell, 1999: 153). The relation between income distribution and human capital investment is broadly debated with contrasting results. See also Acemoglu and Pischke (1999), Becker (1975) and Sinn (1996).

The index of the level of investment in *specific skills* is obtained by the following indicators:

a) median enterprise tenure rates, that is the median number of years of the relationship between the workers and his current employer.

Tenure contains relevant information concerning the firm specificity of skills because firms and individuals that invest heavily in such skills become increasingly dependent upon each other. The greater the investment, the higher the opportunity costs of interrupting the relationship, and the lower the incentive for either party to do so. This idea is supported by a considerable evidence which shows how tenure rates across industries within the same country are closely associated with the skill intensity of those industries and with product market strategies pursued (standardized or, conversely, specialized production).

The drawback of using tenure rate to measure specificity is that may also reflect the costs of dismissing workers as a result of employment protection. I don't leave this issue unanswered: a) first most job switching is known to be voluntary: from that it seems clear that at least part of the effect of employment protection on tenure rates must go through the effect of the former on the stock of firm-specific human capital accumulated. b) Besides cross-national association between EPL and tenure rates is rather high while the correlation between EPL and labour turnover is weak, contrarily to some traditional views (Contini, 2002). The literature on this second point is controversial: the empirical evidence shows how countries with strict employment protection have a remarkably high labour mobility²³. A higher median tenure rate added to similar employment outflows implies the presence of different mobility patterns. That has implications in terms of the investment in the employment relationship and proves the effectiveness of the indicator used. This issue is dealt in subsections 3.3.1 and 3.3.2 when we talk about internal and occupational labour market models.

b) the share of '*specific vocational training in a working environment*' in the national training system: firm-specific skills are acquired through on-the-job training rather than formal and standardized training schemes. The professional growth happens within the firm and skills are not portable outside that. That leads to a prevalence of internal labour market structures.

c) a subjective perception of the workers about the transferability of their skills for other vacancies in the labour market: specific skills are not liquid and there are no external markets for those.

²³ ECHP data set used for this paper does not show a relationship between stringency of labour legislation and rate of "workers obliged to stop by employer" (that is the employment outflow). In Contini (2002) there is evidence of high employment flows in Italy. A more disaggregated analysis show, at the same time, how there are differences within the same country (and thus the same employment legislation). In Italy we have a segmented labour market with a part of employees with a stable job-relationship. Differences concern also geographical area: the South of Italy shows an higher worker mobility compared to North. Yet in the North there is a smaller practice of temporary contracts. Those are in line with the approach of this paper because when we talk of production strategies based on specific human capital we refer, in particular, to some areas of the Northern Italy.

d) deferred wage schemes: such schemes can highlight a process of specialization of the worker to the firm (increasing his value) but also a ‘cautelative caution’ used by firms to lie to itself trained workers. This issue is deeply dealt in subsection 3.3.3.

The index of *industrial skills* (transferable skills) is more generic and less interesting: such index shows the diffusion of human capital within the workforce. I refer to certifiable and ‘liquid’ human capital.

A full description of each variable and how it is built is reported in the appendix. We now turn our attention to the empirical results and their theoretical implications.

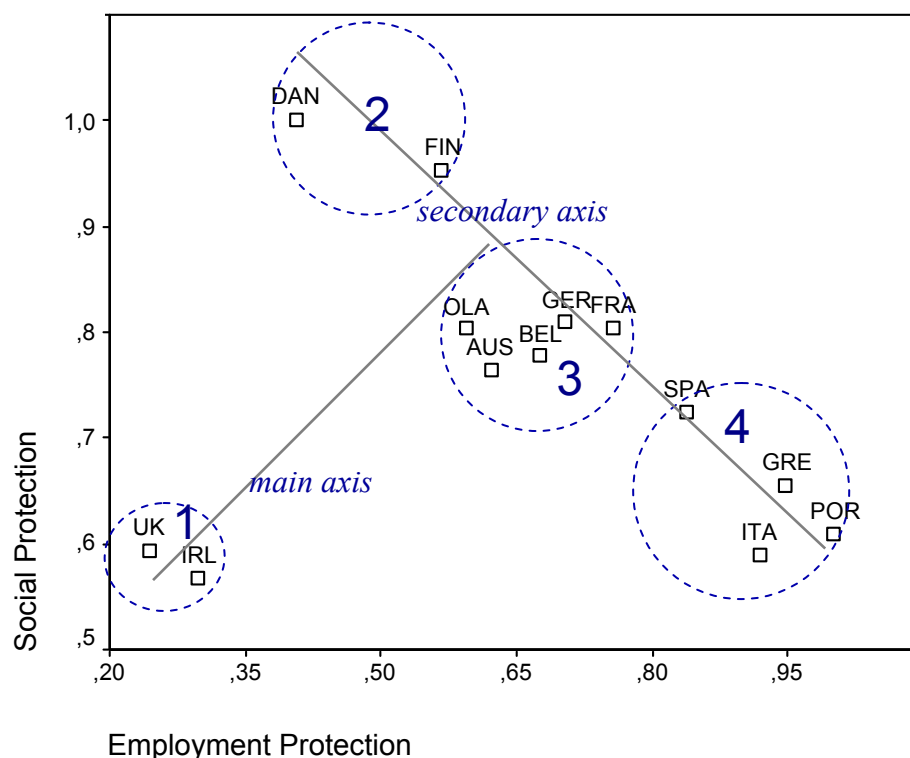
3.2 Results and their interpretation

We start with a map of the countries considered. It’s drawn using the level and types of social protection (see *figure 3.1a*). The two axes represent social protection (vertical line) and employment protection (abscissa).

We can identify four *clusters* to which four different types of capitalism correspond, in accordance with the literature about ‘varieties of capitalism’ and *welfare regimes* discussed above:

- | | |
|----------------------------|-------------------------|
| 1 - Anglosaxon model | 2 - Nordic model |
| 3 - Central European model | 4 - Mediterranean model |

Figure 3.1a: distribution along social protection coordinates



First a distinction may be done between Anglo-Saxon countries (United Kingdom and Ireland) and all the other countries. We are able to identify, in the map of countries, an inclined *T*. The main axis (the leg of our *T*) separates countries with a marginal role for state (uncoordinated economies) from countries with an high level of public intervention in at least one of the social protection dimensions. Thus the discriminator element of this first distinction is the *level* of public intervention.

The liberal model in Anglo-Saxon countries is different, for instance, from the universalistic model of Scandinavian countries because of more limited public intervention which protects only the more serious social risks such as unemployment, disability and poverty. The coverage of all the other social risks and the determination of wage and work conditions is decided within the free-market and by individual confrontation. In these countries employment politics are based on the principle of *work to welfare*. The employment rate is quite high, and unemployment has a more cyclical performance than in other European countries, and so wage and income differential are higher.

The secondary axis (the head of the *T*), on the other hand, describes a *continuum* along which coordinated economies are distributed according to the *form* of public intervention. It may be noted that the existence of a trade-off between employment protection, strictly speaking, and social protection in a broad conceptualization. If they are interpreted as a common answer to the same demand of protection, then a decrease of the former requires a compensation from the latter²⁴.

The Nordic model is based on public support against social risks either through measures of income support or through supply of measures of active labour politics and presents less protection against dismissal risk. The welfare state sustains full employment and work mobility taking action both on the supply side (training and retraining, searching and income support politics) and demand side (through subsidies and creation of employment in the public sector). Scandinavian countries spend more than other European countries in labor politics (4% of GDP on average). These countries present a high employment rate (with a strong presence of female workers), a relatively low unemployment rate (also because part of the unemployment is 'hidden' by the participation to active labour market politics) and low wage and income differentials.

Continental countries, and mainly Mediterranean ones, present a welfare system based on job protection of the head of the family (both through legislation and collective bargaining) and on private support of the other components of the family. Social protection is generally linked to professional status: more generous unemployment subsidies are available for employee dismissed (and less or none for self-employed people); even subsidies which imply the non participation or the exit from the workforce are diffused (early retirement, sickness or disability allowances). The trade union influence in the collective bargaining and in the definition of employment protection system is strong. These characteristics are accentuated in Mediterranean countries where a universalistic model, protection against

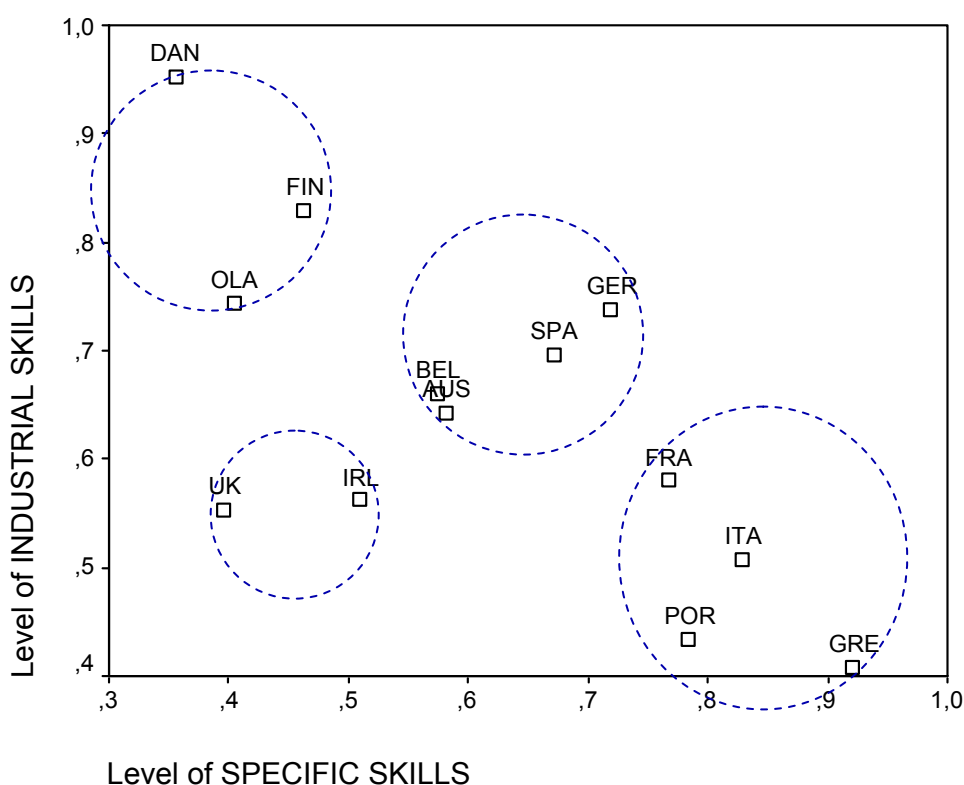
²⁴ In this sense, in fact, the debate about possible reforms on national legislation regarding regulation of the labour market and unemployment protection could be interpretable.

unemployment and politics for job searching are absent. In this case the head of the family is the source of income protection: this explains why in these countries there are low rates of active participation in the workforce, mainly concerning the secondary components of the family (women, young and older persons).

Countries are now plotted on a graph using the *skill profile* (see figure 3.1b). The two new axes represent the level of *industrial skills* (that's to say diffused and liquid human capital) and the level of *specific skills* (and therefore skills which are not very liquid and therefore risky and constraining).

The 'distributive rule' predicted in *table 2.1* is respected! Strong correspondence has been found between social protection clusters and the workforce skill profile.

Figure 3.1b: distribution of countries by skill profile



In Anglo-Saxon countries, where in general the social protection is lower there is a low level of skill investment. The archetypal, as correctly predicted, is represented by the United Kingdom A large share of British factories is concentrated at the bottom of the quality spectrum (serial production) where they requires unskilled or semiskilled workers²⁵. Thus this *low-skill equilibrium* is seen as the result of

²⁵ «Britain is trapped in a low skills equilibrium, in which the majority of enterprises produce low-quality goods and workers are poorly trained. The term equilibrium is used to connote a self-reinforcing network of societal and state institutions which interact [...]. This set of political-economic institutions include the organization of industry, firms and the work process, the industrial relations system, financial markets, the state and political structures, the operation of the

rational actions by firms and workers, a sort of rational adaptation to the surrounding environment.

Denmark, instead, represents the ideal type of the Scandinavian model with poor employment protection but robust social protection and so a general orientation to the acquisition of high levels of professional skills. Denmark is characterized by small firms with a limited capacity to attract and ensure long-term job relationships but they can rely on a pool of highly skilled workers with transferable abilities thanks to a developed training system and by continual paths for training and re-training. Thus skills acquired are not specific but transferable in market sectors.

In the first two *quadrants* we can speak of a prevalence of *numerical flexibility*²⁶: here flexibility is linked to the capacity of firms to modify (increase or reduce) its own assets easily. Thus, where there is a large pool of workers with advanced and highly portable skills, and where social protection is low, companies enjoy considerable flexibility in attracting new workers, laying off old ones, or starting new production lines. This flexibility allows for high responsiveness to new business opportunities, and facilitates the use of rapid product innovation strategies.

In the other two *quadrants* we have, instead, higher employment protection. The discriminating element between Italy and Germany is now the fact that the latter rely on a stronger protection outside the job relationship. This implies that human capital is more diffused. In Germany the VET (*Vocational Education Training System*) has been successful in inducing employers to finance the workers training, in such a way as to ensure a broad pool of qualified workers. A strong presence of trade-unions represents an obstacle to low wage level and so to low quality strategy. The employers concentrate on less price sensible markers and on high quality and high flexible production. A well organized apprenticeship is considered a ticket for a secure and well paid job. This provides incentives for young workers to accept modest initial wages and to invest time in training.

In Italy investment in human capital doesn't appear so diffuse but when it is carried out specific human capital represents a maximizing strategy. With the same meaning we can interpret the continuous warnings for Italian system to bet on a strategy with high added value instead of a low-quality production.

Now the characteristics of human capital lead us to speak of *functional flexibility*: flexibility, in this case, is linked to the capacity of workers to be adaptable to changeable circumstances²⁷. In economies with a combination of firm and industry-specific skills, numerical flexibility is hampered by the difficulty of quickly

ET system. A change in any one of these factors without corresponding shifts in the other institutional variables may result in only small long-term shifts in the equilibrium position» (Finegold and Soskice, 1988: 2).

²⁶ We call it numerical flexibility because it concerns quantitative measures: number of workers, hours of work, use of part-time and temporary workers.

²⁷ In literature we can find also the concepts of *multi-skilling* or *job-rotation*: the definition of such jobs is broader and requires mobility among different mansions. If we think in aggregated terms we could say that a mixture of skills, even if the result of a sum of general components, could be, on the whole, specific to a firm and worthless outside. Thus the ability to carry out several mansions in the same firm has its self characteristics of specificity.

adapting skills to new types of production, and by restrictions in the ability of firms to hire and fire workers. On the other hand, these welfare-production regimes benefit companies that seek to develop further competence within established technologies, and to continuously upgrade and diversify existing product lines

In firms which adopted the flexible specialization model, it's clear that job security constitutes a crucial aspect of company strategy. Flexible specialization implies a more strict collaboration among agents employed in the production process; this collaboration is different from the cold relationship in a mass production strategy. Employment security will improve the workers commitment to the enterprise, creating trust and enhancing work flexibility.

The possible outsiders in the two graphs are France, Spain and the Netherlands. France and Spain are on the border line between corporative model and Mediterranean model. Spain, in particular, shows a good level of human capital investment even if social protection is not so high. A possible explanation may be found in the low opportunity cost of investment in instruction and formal training programmes²⁸. The Netherlands shows a Nordic skill profile despite lower social protection compared to Denmark and Finland.

When commenting on these results two considerations have to be remembered. The first is that no deterministic rule or one-to-one correspondence is being presented. Secondly, human capital investment decisions are determined by a sum of factors, difficult to simplify in an economic calculus. Even the geopolitical distribution of such countries leads us to a possible link with historical paths, the impact of which is difficult to evaluate²⁹. The study of a strategic interaction which takes all these factors into account goes beyond the goals and pages of this paper.

3.3 *Further considerations on EPL and specificity*

We now make some further consideration about the role of employment protection and the particularity of specific investments.

3.3.1 *Employment protection and employment relationship*

More specifically a stronger employment protection is associated to a longer work relationship, to poorer external occupational markets and to a stronger development of the internal market (Marsden, 1990).

²⁸ The very high percentage of graduates is sometimes explained as, for example, a sort of 'parking' since the percentage of youth unemployment is high.

²⁹ A distinction could be made between the Common-Law countries and Latin-Law countries, countries of the first and the second industrial wave, a Southern Europe marked by a catholic tradition and a Northern Europe characterized by Protestant belief. And we may explain Netherlands' position as the result of Calvinistic ethics which 'impose' standing out and having success in life. And we may consider the role of the family, especially in Mediterranean countries, as the most important social institution and an important 'centre of risk-absorption'.

Developments in theoretical labour market analysis, since the mid 1970s, have provided several arguments to show the efficiency of employment protection regimes, first of all considering the advantages of stable employment relationship. Central to most of these arguments has been the notion of market imperfections due to asset specificity and idiosyncratic exchange. Exchanges between workers and firms involve specific irreversible investments in relationship-specific capital that generate economic rents for both sides (dual monopoly) as long as the exchange between the two parties continues, thereby generating a mutual interest in long-term relationships (Buechtemann e Walwei, 1999). This theoretical approach provides strong arguments to explain why, from a strictly microeconomic perspective, stable, long-term employment relationships are not incompatible with but, in many instances, conducive to (if not even a necessary prerequisite for) economic efficiency and societal welfare maximization.

Moreover the nature of a long-term employment relationship between workers and firms involve a high degree of *uncertainty* for both sides. We should underscore two types of uncertainty:

a) the existence of incomplete or asymmetric information implies the risk of *opportunistic behaviour* by either party. Thus firms, in order to reduce the risk of *shirking* by workers (that is if the workers escape commitment to the job), will be inclined to design special compensation schemes rewarding work effort and, at the same time, will want to retain the right to dismiss workers whose work effort fails to match expected standards. Workers, on the other hand, in the absence of any binding rules or fairness standards, will reduce their willingness to invest in specific skills and accept efficiency-enhancing deferred compensation schemes.

b) Second, the parties share a lack of information and face uncertainty with regard to the future into which their relationship must continue if the returns to their initial shared investments are to be reaped. We are talking about unforeseen decline in the demand, technological shock and other future states of nature which are not predictable at the beginning of the relationship (and not linked to post-contractual opportunism as above) and which could cause obsolete a type of production or the human capital acquired.

In the presence of information asymmetries and future uncertainty, the willingness of both parties to engage in long-term employment relationship involving sunk investment in relationship-specific capital, therefore, depend on whether they can devise and implement between them a governance structure that addresses the dual question of *mutual trust* and *risk sharing*.

Mutual trust requires safeguards against opportunistic behaviour by the other side. This involves firms not being able to fire workers 'at will' or arbitrarily, thereby depriving *de facto* workers of their share in the rents from mutual sunk investments, and workers not being able to lower the firm's returns to such investments by withholding work effort without facing dismissal (*shirking*).

Risk sharing, on the other hand, requires enforceable rules that the parties, each within their relative capacity, equally share the potential losses resulting from unpredictable future events. This implies that firms cannot be forced to maintain the

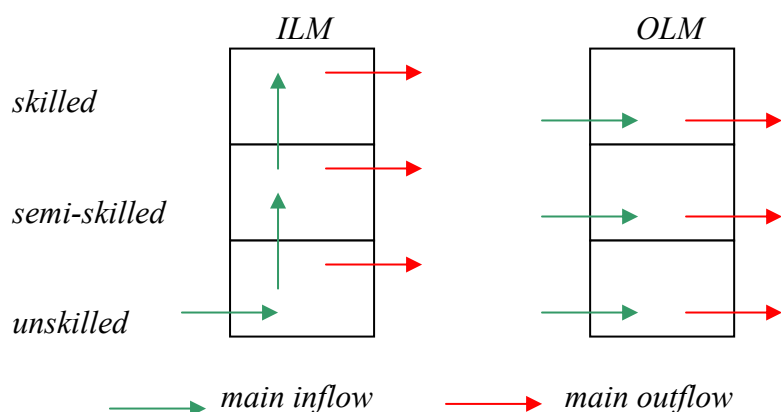
employment relationship if, owing to altered economic circumstances, this would involve a serious jeopardizing of the medium-term survival of the firm, but they would have to compensate workers for unrewarded effort in the past.

Concerning the aim of this paper, the investment in specific human capital, we should state the broad sphere of uncertainty that exists while the willingness to invest needs to have some forms of protection. The employment protection, a type of protection coming from the state, with job rights assigned by law, should cover this role.

3.3.2 *Internal and external labour markets and training systems*

we have already seen how different economic organizations show the presence of different patterns of job mobility. We distinguish ILMs (Internal Labour Markets) and OLMs (Occupational Labour Markets): occupational market is a labour market in which workers have access to jobs of a particular type in many firms. In contrast, an internal labour market may be said to exist for a particular position in an organization when the employer regularly seeks to fill vacancies occurring in it from among its existing employees (Marsden, 1990).

Figure 3.2: internal and external labour markets



In case of investment in specific skills we have both strong internal markets and weak external markets. There are two possible explanations:

a) a weaker external market restricts the possibility of the worker to move towards other firms. The absence of outside opportunities for the workers is, therefore, a protection in favour of the firms which reach a position of monopsony and doesn't suffer the uncertainty related to the poaching issue (see the case of Japan).

b) «The difficulty of finding an acceptable job is likely to be related to how portable a person's skills are» (Iversen e Soskice, 2001: 15). This is a key concept of job specificity. The dichotomy between internal and external market is reproduced between transferable and specific skills. A stronger employment protection is linked to a weaker external market.

The acquisition of human capital and the definition of the *skill profile* of a country could happen in several ways: in this simplification we talk about a national training system referring to the main and more developed training paths of a country.

If the acquisition of skills is mainly based on *on-the-job training* we have a worker strongly related to that working environment. In an internal labour market the firm starts immediately with training and there is not a standardization of the skills. In the external labour market, on the contrary, the skills are more transferable and there is a more institutionalised and fluid job mobility. The acquisition of professional skills is the ‘certificate’, the key access to the profession or to the upper job level (Ryan, 2000).

In countries where the employment protection is stronger we have a dominance of internal market and a training system mainly based on specific vocational training and vice versa.

3.3.3 *The wage structures*

A deferred wage scheme is an other possible indicator of investment in specific skills. The classical theory talks about a shared investment³⁰ which should reduce the risk of an unilateral decision imposing an opportunity cost on both parties for the sunk investment made. However, this kind of analysis focuses only on the beginning of employment relationship, as if the stock of capital were supplied in one-shot. Instead the concept of specificity and the nature of human capital need to reason over a longer space of time.

Occupational markets provide for a greater job-mobility and are characterized by a strong progression of earnings at the beginning of a worker’s career with a flat profile in the next year: the firm, in substance, ‘buy’ the competences of the workers on the external market. Instead, in the internal markets, even for expectations of a stable employment relationship there is a greater freedom to design the wage profile relating to tenure and age: the firms adopt a deferred wage scheme³¹.

We note that increasing employment protection implies a prevalence of deferred wage profiles, with a premium that rises with seniority. A deferred wage profile can mean either a way for committing the worker to the firm increasing the opportunity-cost of the exit from that production unit, or a continual training process with increasing competencies and skills: the wage, in this latter case, functions as an indirect indicator of the ‘value’ of a worker to a firm. The fact is that a worker resign is costly for a firm, and it could be even more costly when the employer has significantly invested in his training.

³⁰ «According to the standard analysis, the worker invests in specific human capital by accepting a wage lower than his alternative wage, and receives a return on his investment during the post investment period in form of higher wage» (Hashimoto, 1981: 425).

³¹ In literature we can meet concepts as *golden handcuffs*: deferred wages or benefits which worker loses if he leaves the firm. The BellSouth, for instance, has a special scheme in which 25% of the wage is moved in a special account of the firm. It pays, during the retirement, a greater interest rate respect to the market one. If the worker leaves the firm he loses this extra gain. In this way the firm try to avoid employment turnover which is considered costly (Milgrom and Roberts, 1994).

In such circumstances employers prefer to hire workers who are less inclined to switch jobs: a deferred wage scheme could function as a device for auto-selection (self-screening) for those workers who intend, potentially, to stay in the firm for a long time (Salop and Salop, 1976).

An increasing wage profile with seniority can also replicate the effects of a caution (a sum withheld at the beginning and to be returned in the last period of the relationship) to protect the training investment of the employer (Lazear, 1979)³². The job should become more 'precious' for workers and consequently the firm can rely on adequate behaviour from them. Naturally, to accept such wage schemes, in other words to be certain to get the necessary seniority to fully enjoy such salary profiles, workers need a sort of 'external reassurance'.

3.3.4 *Employment protection and motivation problems*

In what circumstances is the worker willing to invest in human capital? This argument did not concern so much the first studies on human capital which focused on firms' incentives and on its risks in the post-training period³³. Here we deal, in particular, in worker's behaviour who wants to protect himself from the post-contractual opportunism of the firm, from the possibility to be laid off. Employment protection could be considered as regards motivational problems and incentive politics: employment security is the necessary condition for using worker's initiative to the full and for a general atmosphere which favours long-term relations, trust and mutual cooperation and enhances workers' loyalty and commitment to the company.

Workers' rights in jobs could exist even as a result of voluntary exchanges (Addison, 1989) and in this case, consequently, there should be no need for legislation. Job rights could arise as 'optimal' results from unconstrained voluntary negotiations between parties (given clearly defined and assigned property rights). These private contracts should be able to provide efficient solutions to the dual problem of opportunistic behaviour and future contingencies inherent in labour market transactions.

³² In the '70s, the Electronic Data System Corporation required the payment of 12,000\$ if the trained workers left the firm after three years from hiring. Some problems could arise if we consider cases of credit constrained (Milgrom and Roberts, 1994).

³³ Becker (1975: 29) worried about turnover costs: «the firm is hurt by departure of a trained employee because an equally profitable new employee (can) not be obtained».

CONCLUSIVE REMARKS

To sum up an attempt is made to put another brick in the economic building concerning the complex relationship between concepts of social protection, production strategies and human capital.

A correspondence between level and type of social protection has been specified as has the level and type of human capital investment. Studying in depth the nature of this relation we should refer to the incentives on human capital investments produced by certain measures of social protection. At the same time, social protection constitutes a ‘beneficial constraint’ and implies some strategic complementarities with different production strategies that create, in turn, a competitive advantage for different skill profiles.

The classification reproduced is in agreement with literature on ‘varieties of capitalism’ and the re-make of Estevez-Abe, Iversen and Soskice’s exercise led us to a better and clearer identification of the clusters of countries.

In particular we have seen how a stronger employment protection favours more specific relations between employee and employer and how a robust network of social insurance is a prerequisite for a broader human capital investment.

A more ‘disaggregated’ comparative analysis (distinguishing the firms in terms of dimensions and sectors: agriculture/industry/tertiary, public/private...) constitutes a research proposal to be studied more deeply³⁴.

The other possible direction of investigation concerning the relation between the welfare state and economy has to be mentioned: the *demand* of social protection. The social preferences of the actors depend, in this view, from skills acquired (workers) and from industrial strategies pursued (employers).

A vision of the welfare state as an insurance device, and not only as an equity and solidarity provider, leads us to speak of an important implication: the relation between uncertainty perceived and demand of social protection³⁵. It’s common sense, in sociology, the idea that transformations in ways of production create and continuously modify, in several directions, the workers preferences and interests³⁶. In turn, such preferences could be at the bases of variations in political preferences and trade union and party requests (Manow, 2001). Demand of social protection should depend on risk exposure perceived, and risk, in turn, should be linked to the ‘portability’ of skills (Baldwin, 1992; Iversen and Soskice, 2001). As liquidity of skills is inversely related to specificity, workers with specific-assets face a higher

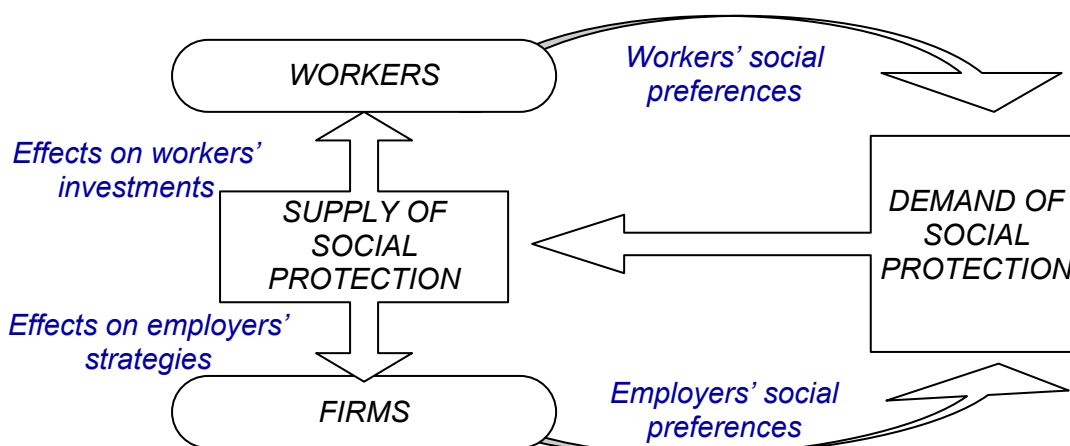
³⁴ This kind analysis seems to strongly related to manufacturing sector but some preliminary analysis in these fields seems to confirm this analytical approach and to consent new and more particular considerations, sector by sector.

³⁵ «In times of rapid structural changes, of greater openness that disrupts established economic relations... the workforce will need insurance against a ‘rainy day’» (Agell, 1999: 154).

³⁶ According to Kramer and Stephenson (2001), the social policy preferences mainly depend on four variables: the level and the typology of skills acquired, the industry to which they belong, the production strategies of a country and the level of existing social assistance.

risk of long-term unemployment in case of job-loss and thus have a stronger incentive to support social politics which protect them against this uncertainty. Social protection is seen, in other terms, as the result of a political decision, the result of a democratic process in which individuals vote for what they prefer and retain profitable³⁷.

In other words, if we started showing a causal relation from social protection to agents choices, we now hypothesize the causal nexus in the other direction: the welfare state as the result of pressures of the *demand* of social protection. A deeper analysis of the construction of workers and employers' social policy preferences, could therefore, be another profitable field of research for political sciences.



Distinguishing between *demand* and *supply*, in this world of mutual interaction is very complex and what appears is only the final result. Here we have institutional framework which establishes boundaries within which capitalistic systems develop themselves. On the other hand we can see the input factor in the economic process when we say that a particular capitalistic system demands (and causes) a particular answer from institutions. In this latter case it is the economy which sets the direction. The two approaches do not necessarily ruled out each other and a double nexus causal direction could exist: a sort of «organizational equilibria» (Pagano, 1993) which are reproduced and perpetuated through time.

³⁷ In the classical version (Meltzer and Richards, 1981) the average voter demands redistributive politics in accordance with his income: low income people demand more redistributive politics; on the contrary high income people prefer 'less politics' to not lose part of their wealth. In this paper we assumed that social preferences are affected by skill composition. Polanyi (1944) was one of the first to highlight the idea that social protection claims come from a need of refuge against the market 'tantrums'.

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APPENDIX

The variable *Employment Protection* is based on the evaluation of a series of indicators which measure the inflexibility of labour legislation (*Table A.1*). *Social Protection* approximates the net of social security of a country (*Table A.2*).

Table A.1: Construction of Employment Protection Index

Indicator for individual dismissals [5/12] ^{a)}	Regular procedures inconveniences [1/3]	Procedures Delay to start of notice	[1/2] [1/2]
	Notice and severance pay [1/3]	Notice Severance pay	[1/2] [1/2]
	Difficulty of dismissals [1/3]	Definition of unfair dismissal	[1/4]
		Trial period before eligibility	[1/4]
Unfair dismissal compensation after 20 years		[1/4]	
Extent of reinstatement		[1/4]	
Indicator for temporary employment [5/12] ^{b)}	Fixed-term contracts [1/2]	Valid cases other than the usual 'objective'	[1/3]
		Maximum number of successive contracts	[1/3]
		Maximum cumulated duration	[1/3]
	Temporary work agencies (TWAs) [1/2]	Types of work for which is legal	[1/3]
Restrictions on number of renewals		[1/3]	
Maximum cumulated duration		[1/3]	
Indicator for collective dismissals [2/12]	Definition of collective dismissals	[1/4]	
	Additional notification requirements	[1/4]	
	Additional delays involved	[1/4]	
	Other special costs	[1/4]	

a) it includes:

- procedures required for the decision to layoff; they include 1) notification of dismissal (i.e. after a series of warnings); 2) if written documentation, with dismissal reasons, is required; 3) if a third party (works councils, employee representatives or public authorities) has to be informed; 4) if dismissal can't be effective without the approval of the latter.

- required length of notice and mandate severance pay; these two indicators represent the most important component of the firing cost.

- standards about the difficulty of dismissal (definition of 'unfair' dismissals and penalties connected): the concept of just cause is useful to limit the capacity of the employer to dismiss a worker; what constitutes just cause for dismissal (fair or unfair dismissal) includes: 1) if the employer did all the efforts to avoid layoff; 2) if age, length of relationship and other social factors are considered; 3) the length of trial period during which the relationship can be interrupted by both parties without justification; 4) rights of workers to challenge dismissal in the courts and 5) the extent of reinstatement or if the court has the power to establish additional penalties (apart from severance payment).

b) The composite EPL is constructed for both regular and temporary employment, but our argument is only relevant for the former since neither employers nor employees have much of an incentive to invest in firm-specific skills when employment is time-limited.

The final and intermediate indexes are calculated as a weighted average of previous indicators after each indicator has been standardized to vary between 0 and 1.

The index is the one calculated, with the methodology described, by OECD (1999), *Employment protection and labour market performance*, *Employment Outlook*, and data refer to the mid '90s.

Table A.2: construction of Social Protection Index

Social spending [1/3] ^{a)}	Social spending as % of GDP (1995)	
The Gini Index [1/3] ^{b)}	Indicator of income distribution (1995)	
Unemployment Protection [1/3] ^{c)}	Criteria to accede to subsidies (qualifying conditions) Unemployment replacement rates Duration and dynamics of the subsidies	[1/3] [1/3] [1/3]

a) Source: OECD (1999), *Social Expenditure Database*.

b) Source: Eurostat web site.

c) Source: OECD (1996), *Eligibility criteria for unemployment benefits*, Employment Outlook and OECD (1995), *Economic and Social Data Set*.

The final and intermediate indexes are calculated as a weighted average of previous indicators after each indicator has been standardized to vary between 0 and 1.

The construction of the indexes concerning the level and type of skills is more difficult. In this field we have proposed some new elements as regards the work of Estevez-Abe, Iversen and Soskice (2001): new indicators (wage profiles and the worker's perception of skill liquidity) and a definition of average length of tenure and of the national training system based on different data (*Table A.3 and A.4*).

Table A.3: construction of Specific Skills Level

Average length of tenure ^{a)}	[1/4]
Share of 'specific training' in the national training system ^{b)}	[1/4]
Subjective perception of the workers about transferability of their skills ^{c)}	[1/4]
Indicator of deferred wage schemes ^{d)}	[1/4]

a) ECHP, question pe011: year of start of current job.

b) ECHP, question pt012: type of vocational education course: specific vocational training in a working environment.

c) ECHP, question ps003: good chances to find the new/additional job.

d) ECHP, question pi111: average wage and salary earnings: ratio between workers with short tenure (less than 2 years) and workers with long tenure (more than 16 years).

The final index is calculated as a weighted average of previous indicators after each indicator has been standardized to vary between 0 and 1.

Source: *European Community Household Panel* (1996), Eurostat.

Table A.4: construction of Industrial-General Skills Level

Level of educational, scholastic human capital ^{a)}	[1/5]
Level of professional human capital ^{b)}	[1/5]
Skilled workers as percentage of total workforce ^{c)}	[1/5]
Share of 'formal training' in the national training system ^{d)}	[1/5]
Subjective perception of the workers about transferability of their skills ^{e)}	[1/5]

a) ECHP, question pt007: share of graduates (university degree) in the 21-29 age cohort.

b) ECHP, question pt012: share of workers with certifiable skills in the 21-29 age cohort.

c) ECHP, question pe006: share of professionals, technicians and other skilled workers in the total workforce.

d) ECHP, question pt012: type of vocational education course: third level qualification such as technical college or specific vocational training at a technical school or college.

e) ECHP, question ps003: good chances to find the new/additional job.

The final index is calculated as a weighted average of previous indicators after each indicator has been standardized to vary between 0 and 1.

Source: *European Community Household Panel* (1996), Eurostat.

The four variables used are finally summarized in the following indexes.

Table A.5: the numerical indexes obtained

	<i>EPL</i>	<i>Social Protection</i>	<i>Level of Specific skills</i>	<i>Level of industrial skills</i>
GERMANY	0,703	0,829	0,718	0,688
DENMARK	0,405	1,000	0,356	0,971
NETHERLANDS	0,595	0,779	0,405	0,782
BELGIUM	0,676	0,767	0,574	0,595
FRANCE	0,757	0,815	0,767	0,541
UN. KINGDOM	0,243	0,556	0,396	0,441
IRELAND	0,297	0,515	0,509	0,516
ITALY	0,919	0,571	0,829	0,446
GREECE	0,946	0,659	0,920	0,305
SPAIN	0,838	0,748	0,671	0,675
PORTUGAL	1,000	0,576	0,784	0,357
AUSTRIA	0,622	0,731	0,582	0,578
FINLAND	0,568	0,954	0,463	0,810