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The Positive Economics of Corporatism and Corporate Governance

by

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Abstract:

This paper presents a positive model which shows that institutional setups on capital and labor markets might be intertwined by politicoeconomic forces. Two politicoeconomic equilibria arise from our model, one with little protection of insiders on capital and labor markets, and another one with an institutional bias toward favoring insiders on both markets. Coherent and relatively homogeneous societies, where binding commitments enjoy greater feasability, are more likely to be found in the latter, corporatist equilibrium, whereas fragmented, heterogeneous Anglo-Saxon societies fit better into the former category. These predictions of the model receive considerable support in our cross-country empirical analysis, thus being potentially important for the current debates concerning the reforms of labor markets and of corporate governance systems.

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I. Introduction

While mass unemployment continues to be high up on the agenda for economic policy in most continental European countries, structural reforms of the labor market prove to be notoriously difficult to implement. In fact, tough labor market reforms appear to be less likely at the turn of the millennium than a reversion to strengthening already existing corporatist structures in the spirit of the often praised Dutch role model.[1] Germany is probably the most conspicuous example of such a development. This means that reducing unemployment is not sought via raising competition on the labor market but rather via a centralized consensus-oriented policy approach with a substantial amount of government involvement. Hence, it is at this point highly unlikely that radical labor market reforms similar to those in Great Britain or in New Zealand will be undertaken soon to achieve a level of labor market flexibility and competitiveness that prevails say in the U.S. This is the case despite of the impressive employment growth in the 1990s in the U.S. with a record low unemployment rate of only 4.0% in early 2000. The resurgence of social democratic rule in continental European countries in recent years is the most visible indicator supporting such an assessment.

Labor market deregulation hurts entrenched insiders, i.e., those holding regular jobs, at least in the short to medium run which makes them opposed to such an undertaking.[2] It follows that as long as insiders are the majority in a democratic society such a supply-side approach to the labor market is hardly politically feasible. However, the importance of complementarities in reforming the labor market has been highlighted recently in the literature[3] and the example of countries such as the U.S., Great Britain, and New Zealand shows that a more competitive labor market is a feasible institutional setting under certain country-specific circumstances. It is striking that implementing competition on the labor market appears to be mainly a viable option in Anglo-Saxon countries, which also have quite a different institutional setup on the capital market. Labeling managers and entrepreneurs as insiders on the capital market, insider protection on both, capital and

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[1] The Netherlands have certainly been highly successful in reducing official unemployment rates. It is, however, an open question whether they have actually created new jobs on a large scale or merely divided up already existing jobs more equally among the population.

[2] The appropriation model of Caballero and Hammour (1998) along with recent empirical evidence in favor of a long-run elasticity of substitution between capital and labor which exceeds the threshold value of one (Berthold, Fehn, and Thode 1999) show, however, that insiders themselves might benefit from a deregulated labor market in terms of wages and employment opportunities in the long run.

[3] See e.g. Coe and Snower (1997), and Saint-Paul (1998a).

labor markets, is much less prevalent in Anglo-Saxon countries compared to its omnipresence in continental European countries.[4] This relationship between institutional setups on labor and capital markets has received little attention in the literature so far although it appears to be a potentially important factor in explaining cross-country differences in the evolution of these institutions.

Preferential treatment of insiders on labor and capital markets might be part of an encompassing corporatist deal to shut out competition on both markets. This comes at the expense of shareholders, and insofar as it leads to larger unemployment, the unemployed outsiders as well as current and future tax payers are negatively affected. The differences between Anglo-Saxon and continental European capital markets are almost as stark as those on the labor market. The former ones are stock market based, with relatively clear-cut accounting rules, with disperse ownership of the many large public firms, with institutional investors such as large pension funds playing an important role, with managers' policies being relatively tightly aligned with shareholders' interests through their income depending greatly on stock market performance and by the threat of hostile takeovers, and last but not least with there being a vibrant venture capital market which allows a high degree of entrepreneurial activity.

In contrast, continental European capital markets tend to be still, though to a decreasing degree, dominated by large banks, which entertain close relationships with large firms not least via extensive cross shareholdings. Corporate governance largely rests with these banks via proxy voting, blockholding of shares is widespread, but management has nonetheless a lot more room for discretionary maneuver, inter alia due to opaque accounting rules, and management is not expected to maximize merely shareholder value. Stakeholder interests matter, as is exemplified by the German codetermination law, and finally the size and importance of the venture capital market is still negligible by Anglo-Saxon standards. Recent contributions on corporate governance show that another, albeit related, difference pertains to the degree of investor protection which both systems provide, and that these differences have important repercussions on the development of the capital market and of the ownership structure of firms. In short, Anglo-Saxon capital markets accord in general a substantially larger degree of effective legal protection to providers of capital, in particular to providers of risk-bearing equity or venture capital.[5]

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[4] See e.g. Bebchuk and Roe (1999), Coffee (1999), and Roe (1999).
[5] See La Porta et al. (1997), (1998), (1999a), and (1999b).

It is in this respect interesting to note two things. First, similar to economists working on labor market issues and the European unemployment problem the corporate finance literature in contrast to the end of the 1980s nowadays mostly recommends regulatory changes which would push the institutional setup on financial markets closer to the one found in Anglo-Saxon countries.[6] Second, progress in this direction is in both cases very slow and may have even reversed in recent years on the labor market. While this may be puzzling from a neoclassical point of view, where the most efficient institutions should prevail in the medium to long run, this might turn out to be less surprising from a political economy point of view. Preferential treatment of insiders on both markets might be part of a corporatist deal between unions and managers/entrepreneurs, which are inter alia represented by employers' associations, to restrict competition on both markets and to confine it to the politically less controversial product market. Such a deal might be especially tenable in societies which possibly due to historical experience crave for stability and little income differentiation. It is well known, that the Anglo-Saxon institutional setup on both, the labor and the capital market, tends to produce greater variability in incomes over time and across people. However, the more such a corporatist institutional arrangement infringes on economic efficiency, the less stable it is likely to become.

To discuss whether the institutional setups on labor and capital markets are indeed intertwined by politico-economic forces, the paper is organized as follows. Section II presents a positive model which produces multiple politicoeconomic equilibria concerning employment and investor protection. Section III delivers a cross-country empirical analysis of the model. Section IV provides conclusions.

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[6] For the labor market, see e.g. Lindbeck (1996), Nickell (1997), Siebert (1997), and Fehn (1997); for financial markets, see e.g. Bebchuk (1999a), Black and Gilson (1998), Kortum and Lerner (1998), Levine and Zervos (1998), and Hellmann and Puri (1998).

II. A positive model relating employment to investor protection

1. Structure of the model

In the following, a simple politicoeconomic model relating employment to investor protection is presented.[7] The main purpose of the model is to show that there are two distinct types of politicoeconomic equilibria that can be expected to arise. There are three types of agents in this model: workers W, entrepreneurs E, and investors I. Total initial endowment of each group with wealth is A_W, A_E, and A_I respectively, and wealth is evenly distributed among the members of each group. Furthermore, workers have a unit endowment of labor time per period, and the human capital of entrepreneurs is indispensable for setting up and running firms.[8] Hence, the total number of firms in the economy is equal to the available number of entrepreneurs m. Each firm is assumed to require n workers to operate, so that the total number of workers amounts to $N = nm$. Each firm furthermore needs k units of capital, with $k > A_E / m$, so that entrepreneurs need external financing. The policy space consists of two issues, protection of workers against dismissal via firing costs f, and of the degree l to which shareholders as investors are protected by law and its enforcement against ex post appropriation by entrepreneurs and possibly also workers. Both, f and l, are normalized to values between zero and one.

The timing of events is assumed to be as follows (figure 1). Time runs from $t = -1$ to $t = 3$, so that there are five time periods to consider. In $t = -1$, entrepreneurs found firms by hiring n workers and by acquiring k units of capital. They devote all their personal assets to their own firm and raise the remaining capital by selling risky equity stakes of their newly founded firms. The percentage stakes of risky shares, that entrepreneurs, investors, and workers hold of each firm, are called b_E, b_I, and b_W respectively. The supply of share capital is assumed to be perfectly elastic and there is an excess supply of share capital, i.e., total supply of share capital by investors and workers always exceeds demand by entrepreneurs. Investors and workers can also buy riskless bonds which yield a return that is for simplicity normalized to zero.

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[7] The models builds on Pagano and Volpin (1999).
[8] Entrepreneurs are in principle identical to managers because the human capital of both is usually necessary for running a firm and because managers also usually hold nowadays shares of their firm. However, a difference stems from the fact that entrepreneurs and not managers found new firms.

Figure 1: The timing of events

$t = -1$	$t = 0$	$t = 1$	$t = 2$	$t = 3$
firms are set up by hiring labor and by acquiring capital, labor and financial contracts are signed	legislation on employment and investor protection is passed	1st production cycle ends, initial output is produced and initial wages are paid	innovation shock occurs, workers are reallocated, firing costs are paid out, new labor contracts are signed	2nd production cycle ends, final wages are paid, entrepreneurs divert money and pay out shareholders

Source: Adapted from Pagano and Volpin (1999).

Investors are assumed to be risk neutral so that they are indifferent between holding shares and bonds if both yield the same rate of return. In contrast, workers are risk averse so that they demand a risk premium for holding shares. Hence, if investors dispose over sufficient financial means to cover all demand for external financing by entrepreneurs, i.e., if $A_I > km - A_E$, only investors hold shares but not workers who then end up holding only riskless bonds. Otherwise, stock prices fall so that it becomes attractive for workers to step in and provide the missing share capital. Investors must in any case at least break even in expectation, so that $(1 - \boldsymbol{b}_E)V \geq k - A_E / m$ must hold, where V is the value of the cash flows of each firm paid by entrepreneurs to all their respective shareholders including themselves net of the amount D that they diverted from the firm previous to paying out shareholders. Entrepreneurs thereby obtain an extra private benefit B. The size of these private benefits and therefore also V are endogenous, because they depend on the extent to which the legal regime prevents entrepreneurs from diverting money into their own pockets via investor protection $\boldsymbol{l}$ and on firing costs f. Legislation on employment and investor protection is passed in $t = 0$. Investor protection boils down to shareholder protection as there is assumed to be no agency or risk problem concerning bonds.

Production takes place in two production life cycles which start in periods -1 and 2, and end in periods 1 and 3. The first production cycle is extremely simple. Entrepreneurs initially hire workers with a contract for the first production cycle which ends in $t = 1$. Hence, in $t = 1$ initial output is produced and initial wages w are paid. The representative firm's output in the first production cycle is $Y_1 = yn$, with y being the initial productivity of each worker.

Labor contracts can be renegotiated in $t = 2$, when a shock in form of a technological innovation is assumed to hit the economy. The advent of computers to this hypothecial country could be such an innovation shock. This shock makes the fraction x of all workers more productive by a margin Δ, while the productivity of the remaining $1 - x$ workers remains the same. Furthermore, the same fraction x of all entrepreneurs is capable of mastering the management problem of not only identifying those workers who have become more productive, but of also actually making use of their higher productivity. The identity of these ex post capable workers and entrepreneurs is ex ante unknown. These capable entrepreneurs can use their edge concerning the new technology to increase their profits by substituting less productive workers with workers whose productivity has been boosted by the innovation shock. Hence, xm entrepreneurs have an incentive to restructure their firms, which are denoted as good firms, whereas incompetent entrepreneurs run bad firms. Each competent entrepreneur wants to lay off $(1 - x)n$ low-productivity workers, so that the total number of workers who are about to be laid off is $(1 - x)n\,xm$. The good firm has to pay to each of them a firing cost of f due to the legislation passed in $t = 0$.

High-productivity workers who find themselves in bad firms with incompetent entrepreneurs want to leave these bad firms and join good firms. There are $(1 - x)m$ such bad firms and each of them has xn capable workers who want to leave. Hence, the total amount of workers who voluntarily quit bad firms amounts to $(1 - x)n\,xm$, and is thus exactly equal to the number of workers laid off in the good firms. Assuming for simplicity zero mobility costs for all workers, good workers leave bad firms if the wage which good firms offer them exceeds their wage in the bad firms. This is indeed the case if due to competitive pressure the good firms cannot practice wage discrimination, i.e., they have to pay the same wage to all their high-productivity workers. In order to prevent high-productivity workers from mimicking that they are low-productivity workers, good firms have to raise their wages in $t = 2$ at least by the amount f. It is assumed that competitive pressure is high enough on the labor market so that $w + f$ is indeed the wage paid to all high-productivity workers who end up working for good firms. Hence, assuming that workers laid off by good firms are rehired by bad firms at the standard wage w, they in fact end up having the same income during the second production cycle as high-productivity workers. In contrast, the $(1 - x)^2 nm$ low-productivity workers, who worked from the start for firms, which turned out to be bad ones, only earn w in the second production cycle.

As good firms pay newly hired high-productivity workers a wage of $w + f$ and have to pay f to each bad worker laid off, such a substitution process is evidently only profitable

for good firms if the boost in productivity of certain workers is assumed to be large enough so that $\Delta > 2f$ holds. This is henceforth assumed to be the case. Profits of good and bad firms, $\boldsymbol{p}_{2i}, i = G, B$, in the second production cycle amount to:

$$\boldsymbol{p}_{2G} = n(y + \Delta) - (1 - x)nf - n(w + f),$$ (1)

$$\boldsymbol{p}_{2B} = ny - nw.$$ (2)

Profits of bad firms in the second production cycle are of course equal to profits of all firms in the first production cycle. Furthermore, profits of good firms obviously exceed profits of bad firms due to our assumption that $\Delta > 2f$ holds.

This allows us to calculate total firm values $V_i, i = G, B$ of good and bad firms in $t = -1$, which are the sum of profits in both production cycles minus diversion D by entrepreneurs:

$$V_G = n(2y + \Delta) - (1 - x)nf - n(2w + f) - D(\boldsymbol{I}),$$ (3)

$$V_B = 2n(y - w) - D(\boldsymbol{I}).$$ (4)

The expected value V of a firm in $t = -1$ is finally equal to:

$$V = xV_G + (1 - x)V_B.$$ (5)

Hence, legislation in $t = 0$ concerning the level of investor protection and the level of firing costs affect *V* as intuitively expected in a positive and negative way respectively:

$$\frac{\partial V}{\partial \boldsymbol{I}} = -x\frac{\partial D}{\partial \boldsymbol{I}} - (1 - x)\frac{\partial D}{\partial \boldsymbol{I}} = -\frac{\partial D}{\partial \boldsymbol{I}} > 0,$$ (6)

$$\frac{\partial V}{\partial f} = x[-(1 - x)n - n] = -xn(2 - x) < 0.$$ (7)

Furthermore, second order partial derivatives are:

$$\frac{\partial^2 V}{\partial \boldsymbol{I}^2} = -\frac{\partial^2 D}{\partial \boldsymbol{I}^2} < 0,$$ (8)

$$\frac{\partial^2 V}{\partial f^2} = 0.$$ (9)

2. Utility functions of agents

The next step is to pin down the utility functions of the three types of agents and to map them in the (l, f)-plane. Investors simply maximize their end of period-3-wealth:

$$U_I = b_I \, V(l, f). \tag{10}$$

Hence, the utility of investors depends positively on l and negatively on f:

$$\frac{\partial U_I}{\partial l} = b_I \frac{\partial V}{\partial l} > 0 \tag{11}$$

$$\frac{\partial U_I}{\partial f} = b_I \frac{\partial V}{\partial f} < 0. \tag{12}$$

The indifference curves of investors are positively sloped and of concave shape in the (l, f)-plane, which can be seen explicitly by setting the total derivative of their utility function equal to zero, and by taking the second order derivative of the result:

$$\frac{df}{dl}\Big|_{\bar{U}_I} = -\frac{\dfrac{\partial V}{\partial l}}{\dfrac{\partial V}{\partial f}} > 0 \tag{13}$$

$$\frac{d^2 f}{dl^2}\Big|_{\bar{U}_I} = -\frac{\dfrac{\partial V}{\partial f} \cdot \dfrac{\partial^2 V}{\partial l^2}}{\left(\dfrac{\partial V}{\partial f}\right)^2} < 0. \tag{14}$$

It is assumed that workes equivalently maximize their income in period 3. It needs to be kept in mind that out of all nm workers, the share $(1-x)^2$ are low-productivity workers who work from the start for firms which ex post turn out to be bad. They only receive the wage w during the second production cycle, while the complement of $2x - x^2$ workers receive $w + f$:[9]

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[9] One could of course include negative components for work effort but that would not affect the results as long as disutility from work is independent from f and l .

$$U_W = \boldsymbol{b}_W V(\boldsymbol{1}, f) + w_1 + w_2 = \boldsymbol{b}_W V(\boldsymbol{1}, f) + w_1 + (w_1 + f)(2x - x^2) + w_1(1 - x)^2. \quad (15)$$

Hence, partial derivatives with respect to $\boldsymbol{1}$ and f are as follows:

$$\frac{\partial U_W}{\partial \boldsymbol{1}} = \boldsymbol{b}_W \frac{\partial V}{\partial \boldsymbol{1}} > 0. \quad (16)$$

$$\frac{\partial U_W}{\partial f} = \boldsymbol{b}_W \frac{\partial V}{\partial f} + 2x - x^2 = x(2 + \boldsymbol{b}_W xn - 2\boldsymbol{b}_W n - x). \quad (17)$$

Workers gain from higher investor protection as long as they hold some shares. In contrast, the sign of the partial derivative of workers' utility with respect to firing costs is undetermined because there are two opposing effects. Workers profit directly from higher firing costs as they raise their expected income from working in the second production cycle, but they lose out as shareholders because all shareholders are negatively affected by higher firing costs. It is from now on realistically assumed that the former effect dominates the latter effect so that workers gain from higher firing costs. This is in particular the case if workers share of equity holdings as denoted by $\boldsymbol{b}_W$ is small:

$$\frac{\partial^2 U_W}{\partial \boldsymbol{b}_W \partial f} = xn(x - 2) < 0. \quad (18)$$

Under the assumption that utility of workers does indeed depend positively on firing costs, their indifference curves are downward sloped and convex in the $(\boldsymbol{1}, f)$-plane:

$$\frac{df}{d\boldsymbol{1}}\Big|_{\overline{U}_W} = \frac{-\boldsymbol{b}_W \dfrac{\partial V}{\partial \boldsymbol{1}}}{\boldsymbol{b}_W \dfrac{\partial V}{\partial f} + 2x - x^2} < 0, \quad (19)$$

$$\frac{d^2 f}{d\boldsymbol{1}^2}\Big|_{\overline{U}_W} = \frac{\left(\boldsymbol{b}_W \dfrac{\partial V}{\partial f} + 2x - x^2\right)\cdot\left(-\boldsymbol{b}_W \dfrac{\partial^2 V}{\partial \boldsymbol{1}^2}\right)}{\left(\boldsymbol{b}_W \dfrac{\partial V}{\partial f} + 2x - x^2\right)^2} > 0. \quad (20)$$

Finally, the utility function of entrepreneurs needs to be discussed. Entrepreneurs are also assumed to maximize their income in period 3 which is composed of their income as

shareholders of their own firms plus the private benefits B they derive from diverting the amount of money D from the firm previous to paying out shareholders:

$$U_E = b_E V(l, f) + B[D(l), l]$$

(21)

It is assumed that the level as well as the marginal gain of private benefits B from managerial diversion D depend negatively on the degree of investor protection l: $B_l < 0$ and $B_{Dl} < 0$. It is furthermore assumed that private benefits depend positively on the amount D which is diverted, $B_D > 0$, but at a decreasing rate, $B_{DD} < 0$, and that diversion is inefficient, i.e., $B(D, l) < D$. Hence, D is an endogenous variable, and before it is possible to proceed it must be shown how D depends on l and b_E. The optimal amount of D is obtained by solving:

$$\arg\max D = b_E V + B(D, l)$$

(22)

Due to equations (3) - (5), this problem is equivalent to solving:

$$\arg\max D = -b_E D + B(D, l)$$

(23)

The first order condition is:

$$\frac{\partial B(D, l)}{\partial D} = b_E$$

(24)

The result can be obtained by solving implicitly for D, but it is immediately clear that the intuitive result obtains under our set of assumptions concerning B, namely that the optimal level of diversion by entrepreneurs D depends negatively on both, investor protection l and the size of their own shareholdings of the firm b_E.

By making use of the result in equation (24), we can show that the utility of entrepreneurs does indeed, as expected, depend negatively on investor protection and firing costs:

$$\frac{\partial U_E}{\partial l} = b_E \frac{\partial V}{\partial l} + \frac{\partial B}{\partial D} \cdot \frac{\partial D}{\partial l} + \frac{\partial B}{\partial l} = \frac{\partial D}{\partial l}\left(\frac{\partial B}{\partial D} - b_E\right) + \frac{\partial B}{\partial l} = \frac{\partial B}{\partial l} < 0,$$

(25)

$$\frac{\partial U_E}{\partial f} = b_E \frac{\partial V}{\partial f} < 0.$$

(26)

Hence, the indifference curves of entrepreneurs are downward sloping in the (l, f)-plane:

$$\frac{df}{d\boldsymbol{l}}\Big|_{\bar{U}_E} = \frac{\boldsymbol{b}_E \frac{\partial V}{\partial \boldsymbol{l}} + \frac{\partial B}{\partial D} \cdot \frac{\partial D}{\partial \boldsymbol{l}} + \frac{\partial B}{\partial \boldsymbol{l}}}{-\boldsymbol{b}_E \frac{\partial V}{\partial f}} = \frac{\frac{\partial B}{\partial \boldsymbol{l}}}{-\boldsymbol{b}_E \frac{\partial V}{\partial f}} < 0$$

. (27)

It is at this point important to keep in mind that the parties are asked about their preferences concerning legislation ex post in $t = 0$, after capital has been raised by entrepreneurs. As capital is raised in $t = -1$, any agency costs due to low ex ante investor protection have already been borne by entrepreneurs at the outset and are sunk at $t = 0$.

Assuming furthermore that the degree of investor protection affects private benefits of diversion negatively at an increasing rate, indifference curves of entrepreneurs are concave in the $(\boldsymbol{l}, f)$-plane as would be expected with two bads:

$$\frac{d^2 f}{d\boldsymbol{l}^2}\Big|_{\bar{U}_E} = \frac{-\boldsymbol{b}_E \frac{\partial V}{\partial f} \cdot \frac{\partial^2 B}{\partial \boldsymbol{l}^2}}{\left(-\boldsymbol{b}_E \frac{\partial V}{\partial f}\right)^2} < 0$$

. (28)

Given that $\boldsymbol{l}$ and f are normalized to lie between zero and one, it is straightforward to identify the bliss points of the three types of agents. Investors like investor protection and dislike employment protection so that their bliss point BP-I in the $(\boldsymbol{l}, f)$-plane in figure 2 is $(1,0)$. Workers like both, investor protection and employment protection, so that the bliss point of workers BP-W is $(1,1)$. Finally, entrepreneurs dislike both, investor and employment protection, so that their bliss point BP-E is $(0,0)$. The three contract curves connect the two bliss points involved in any particular contract curve. The contract curve between entrepreneurs and investors CC-EI is therefore the horizontal section on the $\boldsymbol{l}$-axis connecting the bliss point for entrepreneurs $(0,0)$ and the one for investors $(1,0)$. In contrast, the contract curve between investors and workers CC-WI is the vertical line connecting the bliss point of investors $(1,0)$ and the one for workers $(1,1)$. Finally, the contract curve between entrepreneurs and workers CC-WE is uward-sloped and cuts through the square as it connects the bliss point for entrepreneurs $(0,0)$ and the one for workers $(1,1)$. CC-WE is given by the connection of all points where the indifference curves of workers and entrepreneurs, IDC-W and IDC-E, are tangent to each other. It is for simplicity drawn as a straight line but this need not be the case.

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Figure 2: Indifference and contract curves
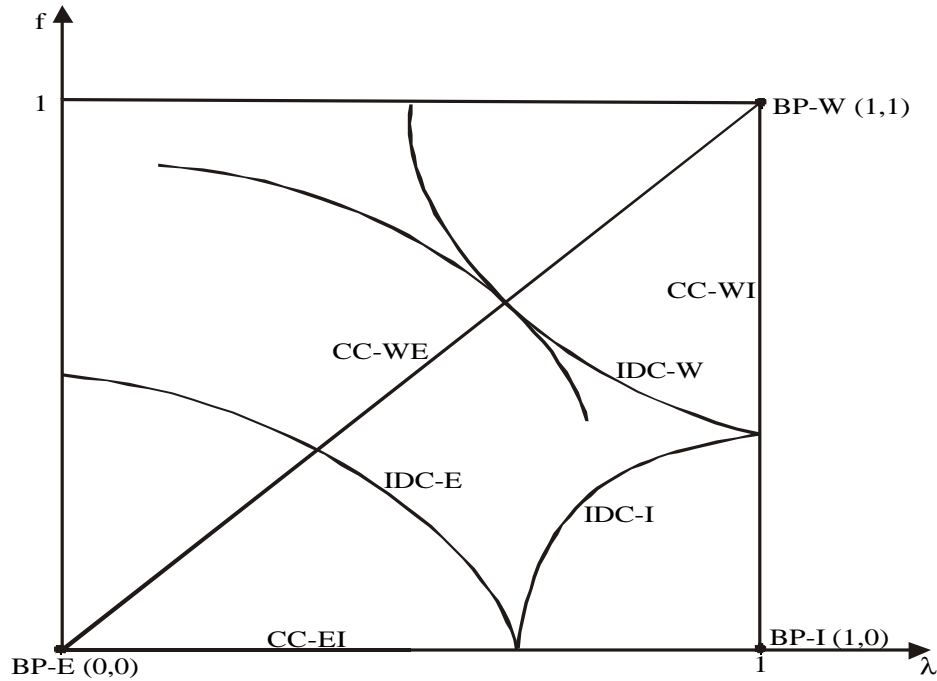
3. Multiple politicoeconomic equilibria

We are now ready to turn to the question of which politicoeconomic equilibria arise from this setup. The electorate or parliament is asked to cast a vote on both issues, employment and investor protection, in $t = 0$. It is assumed that for any legislation to pass, it needs to be approved by at least two out of these three interest groups: workers, entrepreneurs, and investors. This could in principle be the result of both, direct democracy or representative democracy. In the latter case, interest groups push delegates to vote according to their preferences.[10] Investors and entrepreneurs have the same preferences concerning employment protection legislation because low employment protection legislation allows large restructuring of firms in $t = 2$, and investors and entrepreneurs reap as shareholders the benefits from restructuring. However, they have opposing preferences on investor

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[10] Under direct democracy there could be a problem if workers on their own represent an absolute majority and do therefore not need the support of any one of the other two interest groups. The representative democracy case with interest groups pushing political parties to vote in their interest therefore fits better. This is in particular the case because, albeit workers are usually more numerous, their per capita financial wealth is smaller compared to the other two interest groups, so that their per capita ability to sway parties according to their preferences by donating money is also lower.

protection because low investor protection allows entrepreneurs to partially appropriate investors ex post. In contrast, workers prefer higher investor protection and in particular higher employment protection, so that they have the same preferences on investor protection as investors in general but stand alone on the issue of firing costs.

The result of the democratic decision process depends crucially on the voting and bargaining procedure. If neither bargaining between interest groups nor binding precommitments concerning their voting behavior nor joint voting on both issues at the same time are possible, the solution is obtained immediately. Both issues will then be put on the table sequentially and such an atomistic society with little coherence will always choose this type of institutional setup which is favored by two out of these three interest groups. There will be maximum investor protection with $I = 1$, because this is the value preferred by investors and workers, while employment protection will be minimal with $f = 0$, because investors and entrepreneurs want firing costs to be as small as possible. Hence, the bliss point of investors $(1,0)$ is chosen. This outcome and the underlying assumption about the type of society tends to reflect Anglo-Saxon countries and in particular the U.S.

An alternative scenario is a voting procedure where bargaining between parties and credible precommitments are possible and where there is therefore de facto a joint vote on both issues at the same time. Again, if two parties can agree on a joint vote, their preferred institutional setup is chosen. On first sight, this would imply that the politicoeconomic solution can lie on any one of the three contract curves, depending on which coalition forms, and with the precise solution on either one of the three contract curves hinging on the relative bargaining power of the two coalition partners involved. However, there exist at least three arguments why the coalition between entrepreneurs and workers is especially likely to form. First, compared to entrepreneurs and workers, investors are a very heterogeneous group of people with diverse interests and with a large free rider problem. Similar to consumers, it is more difficult for investors to organize and to form a powerful lobby than it is for entrepreneurs and workers since each investor usually has rather little at stake. This is in particular the case in countries, where the distribution of wealth is relatively egalitarian. The more equal the wealth distribution in a country is, the greater is the number of people involved in holding shares and the smaller is each one's interest in a good protection of shareholders.

Second and related, a significant part of investors usually consists of foreigners in highly developed countries and under the rapidly progressing globalization of capital markets. It is immediately evident, that the interests of such people, who are not even living in the country concerned, matter less in the political decision-making process. They hardly contribute to forming a powerful political lobby protecting investors' rights (Coffee, 1999).

The third argument why investors are probably shunned as coalition partners is rooted in the well-known time-inconsistency or credibility problem.[11] The likely consequence of an ex-post dropout of one of the coalition partners is a return to the previous scenario with simple sequential decisions on both issues without any coalitions or political bargains involved. But we already showed that under such an atomistic setup the bliss point of investors is going to be chosen. Hence, in an environment with bargaining at the outset investors can always gain by pretending to enter into a coalition and to agree on a compromise with either entrepreneurs or workers, only to later on renege on this agreement so that they will in fact attain their bliss point. However, rational entrepreneurs and workers of course anticipate that assurances of investors cannot be trusted and that investors suffer from a credibility problem.

In sum, in a bargaining environment with coalitions of interest groups being crucial for the institutional outcome, a situation we will henceforth denote as a corporatist setting, it can be expected that investors are kept out of coalitions and that entrepreneurs and workers are the key interest groups. Such an assessment also seems warranted by casual observation of what appears to be characteristic of corporatist continental European countries. Such a coalition between entrepreneurs and workers will of course try to realize a point on its contract curve CC-WE with the precise position of the outcome depending on their relative bargaining power. The greater is the relative bargaining power of workers, the closer the location of the solution will obviously be to the blisspoint $(1,1)$ of workers. However, as entrepreneurs and workers usually both wield substantial bargaining power in highly developed OECD countries and in particular in continental European countries, the solution is to be expected somewhere in the middle. What really counts, though, is the distinct difference to the previous politicoeconomic equilibrium $(1,0)$: a coalition between entrepreneurs and workers will strike a bargain which involves substantially less investor protection and substantially more employment protection. Hence, there are two distinct

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[11] See Kydland and Prescott (1977), and Barro and Gordon (1983).

politicoeconomic equilibria. The fragmented Anglo-Saxon society will choose the bliss point of investors with high investor and low employment protection, while corporatist continental European societies can be expected to choose a point on the contract curve between entrepreneurs and workers, therefore setting employment protection higher and investor protection lower.

4. Predictions and extensions of the model

Our politicoeconomic model predicts that there should be a negative relationship between employment and investor protection across countries. Fragmented, non-corporatist societies should exhibit low firing costs but high investor protection. Anglo-Saxon countries and in particular the U.S. seem to roughly fit into this category. In contrast, more coherent, corporatist societies should exhibit political deals between insiders on labor and capital markets, the latter being entrepreneurs and managers of large corporations. This dealmaking between insiders can be expected to produce high firing costs and little investor protection thus restraining market forces on both, the labor and the capital market. This result appears to accord rather well with continental European countries but also with Japan. Note, however, that this outcome was derived by referring to economic incentives with the government not being an independent actor. Rather, the government is regarded as fulfilling the wishes of the majority of the electorate and/or of powerful interest groups. The result is not based on ideology, but ideological forces would work into the same direction. In particular Roe (1999) has argued that countries with strong social democratic traditions want to tame market forces in order to subdue income variability across people and over time because they crave for greater stability. Countries with strong social democratic traditions might place larger emphasis on equality relative to economic efficiency. It is apparent that ideological convictions in continental European and especially Scandinavian countries are much more rooted in social democracy compared to say the U.S.

Still, as it stands at this point, our model is too restrictive for describing corporatism on the labor and the capital market in the real world. To start with, firing costs are only one way of protecting insiders on the labor market against market forces such as adverse shocks. Further instruments which aim at essentially the same goal are unemployment insurance, welfare benefits, active labor market policies, centralized wage bargaining, and minimum wages. Unemployment insurance guarantees insiders a certain level of income

protection for a limited period of time if insiders are laid off despite of high firing costs. In fact, Buti et al. (1998) argue that firing costs and unemployment insurance can be regarded as substitutes in their very purpose of protecting insiders, but with unemployment insurance inferfering less with structural change. Welfare benefits of course step in once unemployment insurance runs out. Active labor market policies protect insiders against structural change in helping them to adjust their skills to the changing needs of the market. Actual active labor market policies are hardly ever designed to directly raise the competitiveness of outsiders vis-à-vis current insiders.[12] Centralized wage bargaining and minimum wages are both instruments to reduce wage differentiation at the lower end of the wage distribution thus protecting insiders against rapid and great wage reductions in case the forces of structural change work to their disadvantage. In sum, all five policy instruments are in addition to firing costs typical ingredients of corporatist arrangements on the labor market.

Similarly, low investor protection is just one way of favoring insiders on the capital market. Insiders on the capital market also want to be protected against interference in their decisionmaking. Hence, shareholder rights and as a consequence the whole stock market can be expected to be less developed in corporatist countries. Opaque accounting rules which give entrepreneurs/managers large leeway to manipulate stated profits are another way of shielding insiders on the capital market from interference by outsiders. Furthermore, entrepreneurs and managers want to be protected against competition by new firms and against takeovers by other firms which might lead to their dismissal. Hence, the venture capital market along with the market for mergers and acquisitions should be larger in non-corporatist countries compared to corporatist countries. In addition, such corporatist institutional arrangements on the capital market are especially tenable if workers themselves are not invested to a large degree in the capital market. Otherwise, they would be more interested in a high yield on capital and in shareholders' rights. Claims to pension payments are of course the major asset of workers, but only funded pension systems and not pay-as-you-go pension systems give workers a stake in the functioning of capital markets. Hence, a corporatist institutional deal should correlate negatively with the degree of funding of the pension system. Finally, a corporatist institutional setup on the capital market interferes with shareholders' rights to the benefit of stakeholders. To mitigate the resulting problems of corporate governance and of high agency costs a greater concentration of

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[12] See Calmfors and Skedinger (1995), and Saint-Paul (1998b).

ownership of firms is to be expected in corporatist countries, while dispersed ownership of public firms should occur more often in non-corporatist countries.[13]

III. A cross-country empirical analysis

In the following, we explore whether the alleged relationships between labor and capital markets in general, and in particular the negative link between employment and investor protection predicted by the model can be found empirically in a cross-country analysis. To this end, we assemble data on labor and the capital market settings in up to 26 OECD countries. The data comes from various sources and largely refers to the situation in the early- to mid-1990s. Time series information on most of these institutional information is not available, so the analysis is confined to the cross-country differences at one point in time. Since, as argued above, labor and capital market arrangements ususally include a range of measures, instruments, and regulations, and since our goal is to gain a comprehensive image, we refrain from relying on a single indicator for each factor market. Instead, we use a whole set of variables, each of which captures a certain feature of the overall institutional settings.[14]

1. Assessing labor market and capital market arrangements

To characterize labor market arrangements we use a total of 13 indicators. Their coverage ranges from the direct protection of employees against dismissal or "exploitation" to the wider labor market environment including unemployment insurance, labor market policies, and the wage setting process.

The first variable used to reflect direct protective measures is the OECD's (1999a) summary index of the strictness of employment protection legislation (EPL), which after its latest revision covers the situation in 26 member countries in the late 1990s.[15] While this index includes regulations for regular and temporary employment as well as collective

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[13] See Bebchuk (1999b), and Coffee (1999).

[14] See Table 1 (Appendix) for a detailed description of the variables used and their sources.

[15] As the OECD (1999, 50) points out, there has been "considerable continuity" in employment protection practices in most countries over the 1990s, so the information conveyed in the indicator may roughly apply to the 1990s as a whole.

dismissals, it does not cover other direct protective measures such as working time regulation, employees representation rights, minimum wages. We therefore supplement the EPL index by an index of labor standards (OECD, 1994b and Nickell and Layard, 1998) that includes these aspects in addition to EPL measures.

To assess the wider labor market environment, we start with the unemployment compensation system. We measure the generosity of income support available to an unmarried unemployed in his first month, second year, and fifth year of unemployment, respectively, by so-called net replacement rates (OECD, 1999b). We also calculate aggregate expenditure on passive labor market policies (unemployment compensation plus expenditure for early retirement for labor market reasons) per person unemployed as a percentage of GDP per member of the labor force as an aggregate indicator of the generosity of the compensation system. In addition, we take into account that there are usually eligibility requirements for the unemployed to access the benefit system such as minimum contribution periods, minimum age, work-availability, and willingness-to-work requirements or stricter rules for job quitters. The tightness of these requirements is indicated by the proportion of the registered unemployed who actually receive unemployment benefits (OECD, 1997a). Apart from compensation via unemployment insurance or via social assistance schemes, it is important to note that a sizable fraction of all persons who lose their job in the "primary" labor market in many countries quickly cease to be officially registered as unemployed by getting enrolled in publicly financed employment programs such as public employment services, training schemes, subsidized employment, youth or disabled programs. We measure the availability of this type of support — which not only has an income- but also a help-for-skill adjustment-component — by the aggregate expenditure on active labor market policies per person unemployed as a percentage of GDP per member of the labor force (Martin, 1998).

Table 1: Describtion of the Labor Market and Capital Market Variables

Labor market variables

Employment protection index	Index of the strictness of employment protection legislation in the late 1990s. Source: OECD (1999a), Table 2.5, ("Overall EPL strictness, Version 2").
Labor standards index	Index of labor standards in the period 1985-1993 enforced by legislation on working time, fixed-term contracts, employment protection, minimum wages and employees representation rights. Source: OECD (1994b) and extended in Nickell/Layard (1998), table 2.
Net replacement rate 1st month, second year, fifth year	Unemployment benefits (after tax, including social assistance benefits, family and housing benefits) received 1997 by in a single unemployed person in the 1st month, the second year and the fifth year of unemployment, resp., in percent of the previous wage. Source: OECD (1999b), Annex Table A.1.
Relative spending on passive labor market policies	Expenditure on passive labour market measures (unemployment compensation plus expenditure for early retirement for labor market reasons) (source: OECD, 1999a, Annex Table H), divided by standardized unemployment rates (source: OECD 1999c). Own calculations. The variable is average of this ratio over the periods 1995 to 1997.
Unemployment benefits received/number of unemployed	Unemployment benefits recipients in percent of registered unemployed. Source: OECD (1997a), Table 6. The variable is the average of the data for 1990 and for 1995. Own calculations.
Relative spending on active labor market policies	Expenditure on active labor market policies per person unemployed as a percentage of GDP per member of the labour force. Source: Martin (1998), Table 2. The variable is the average of the data for 1990 and for 1996. Own calculations.
Minimum wage to average wage	Ratio of minimum to average wage 1991-1994. Source: Nickell and Layard (1998), Table 5.
Union coverage	Index of union coverage, early 1990s. Source: Nickell and Layard (1998), Table 3.
Union coordination	Index of union coordination, early 1990s. Source: Nickell and Layard (1998), Table 3.
Employer coordination	Index of employer coordination, early 1990s. Source: Nickell and Layard (1998), Table 3.
Index of the degree of centralization	Centralization ranking. Source: Nickell and Layard (1998), Table 3, cited from Calmfors and Drifill (1988).
Index coverage, centralization, coordination	Index of the country rankings for union bargaining coverage, centralization and coordination. Own calculation from the data in OECD (1997b), Table 3.3. The variable is constructed by first taking the average of the rankings in 1990 and 1994 for each of the three aspects (bargaining coverage, centralization and coordination) and then calculating the average over the three aspects.

Capital market variables

Shareholder rights (antidirector rights)	Index of the legal system's protection of minority shareholders against managers and dominant shareholders. It includes regulations on voting rights attached to shares, rights that support the voting mechanism against interference by insiders and rights to call extraordinary shareholder's meetings. Source: La Porta et al. (1998), Table 2.
Stock market capitalization held by minorities/GNP	Ratio of the stock market capitalization held by minorities to gross national product, 1994. Source: La Porta et al. (1997), Table II.
Domestic firms listed/population	Ratio of the number of domestic firms listed in a given country to its population, 1994. Source: La Porta et. al. (1997), Table II.
Funds raised/GNP	Total funds raised by venture capital firms 1994. Source: OECD (1996) Table 1. The variable is this data divided by GNP in 1994, own calculations.
Early stage investment funds/GNP	Early stage investment funds in each country outside the United States, total venture capital funds for the United States. Authors claim these to be most comparable. Source: Gompers and Lerner (1999), Table 1.5. The variable is this data divided by GNP in 1994, own calculations.
M&A/population	Ratio of the number of M&A deals in a country to its population. The variable is the average of this ratio over the period of 1990 to 1996. Source: Pagano and Volpin (1999), own calculations from The Merger Yearbook and IMF (1999).
Assets of pension funds/GDP	Assets of pension funds in percent of GDP. Source: OECD (1998), Table V.1. The variable is the average of the data for 1991 to 1996.
Ownershipstake of three largest shareholders on the 10 largest private non-financial firms	Mean ownershipstake of three largest shareholders on the 10 largest private non-financial firms. Source: La Porta et al. (1998), Table 7.
Creditor rights	Index of the legal system's protection of creditors in case of a firms liquidation or reorganization. Source: La Porta et al. (1998), Table 4.
Debt finance/GNP	Ratio of the sum of bankt debt of the private sector and outstanding non-financial bonds to GNP in 1994, or last available. Source: La Porta et al. (1997), Table II.

As argued above, corporatist labor market arrangements may not only be designed to protect those in regular employment against dismissal and/or the income losses associated with it but also to shield them against the competition from labor market outsiders. The means are collective wage bargaining systems and mandatory minimum wages which both serve to reduce wage differentiation. To account for the latter, we take figures for the ratio of the minimum to the average wage from Nickell and Layard (1998). To measure the degree of centralization of the wage bargaining process, one needs to incorporate how many workers are covered, the level at which bargaining takes place, and the degree of coordination among unions and among employers. We use country rankings for the degree of union coverage, the degree of centralization as well as union coordination and employer coordination from Nickell and Layard (1998). As a check-test we use country rankings for bargaining coverage, centralization, and coordination from OECD (1997b) and calculate a summary measure of the degree of centralization by taking the simple average over the three rankings.

With respect to assessing the degree of investor protection on capital markets, we employ a total of 11 indicators. The most direct measure is probably the index of shareholder rights constructed by La Porta et al. (1998) from an analysis of a number of countries' legal rules concerning shareholders voting power, ease of participation in corporate voting, and legal protection against expropriation by management. Since each aspect effectively measures the strength of the legal position of shareholders in relation to that of the firm's management, La Porta et al. call their indicator more precisely an index of "antidirector rights".

However, as pointed out above, low investor protection may manifest itself also indirectly, especially via the characteristics of the capital market. Overall stock markets as well as special parts of them can be expected be less developed in corporatist regimes. We try to account for the first effect by measuring the size of the stock market by the ratio of market capitalization to GNP and the number of domestic firms listed in relation to the population (both La Porta et al., 1997). We also expect the venture capital market to be less developed and mergers and acquisitions to be less vibrant in countries with low investor protection. As our first indicator of the size of the venture capital market we use the number of funds raised by venture capital firms in 1994 in relation to GNP (OECD, 1996). However, due to diverging national statistical definitions for what counts as a venture capital investment, total funds may not be a reliable estimate of the relative size of the venture capital market's size (Schertler and Stolpe, 2000). We therefore use additional data

published in Gompers and Lerner (1999) on early stage investment funds in 1995 of which the authors claim that they are internationally comparable. Concerning the level of mergers and acquisitions we extend the data presented in Pagano and Volpin (1999) on the number of deals per capita in the period 1990-1997 to our larger country set. Moreover, we use the average volume of pension funds' assets from 1991 to 1996 in relation to GNP (OECD, 1998) as a quantitative indicator of the orientation of the pension system towards a funded as opposed to a pay-as-you-go system. We also employ data on ownership concentration, measuring the combined ownership stake of the three largest shareholders in a country's ten largest nonfinancial firms (La Porta et al., 1998), to capture this possible part of a corporatist capital market arrangement.

Casual observation suggests that in more corporatist societies like in those of continental Europe banks tend to have a more prominent role in financing corporate investment than in Anglo-Saxon countries (see Rajan and Zingales, 1995, for empirical evidence). For Germany, for instance, it is often argued that the close ties between the large banks and non-bank businesses, with bank managers often sitting in firms' supervisory boards, are part of the overall corporatist arrangement (Baums, 1996). We would therefore expect that a high protection of workers' interest goes along with a dominant position of banks. To assess whether this is the case in our sample, we include a variable that measures the position of creditors according to the countries' legal codes. La Porta et al. (1998) for instance find that creditor protection is strongest in German-civil-law countries. It is their overall index of creditors' rights in case of a firms liquidation or reorganization after default that we use. Moreover, we include a variable that measures the magnitude of debt finance in relation to GNP (La Porta et al., 1997).

2. Results

Figure 3 presents a view on some of the data. It shows cross-plots of our index of employment protection legislation against the variables measuring shareholder rights, availability of venture capital, mergers and acquisitions activities and the degree of funding of the pension system. As indicated by the dotted lines, for each of the capital variables the negative relationship indicated by our model seems to exist. Clearly, some more formal statistical analysis has to show whether the apparent correlations are indeed non-random.

Figure 3: Employment Protection Legislation and Selected Capital Market Variables
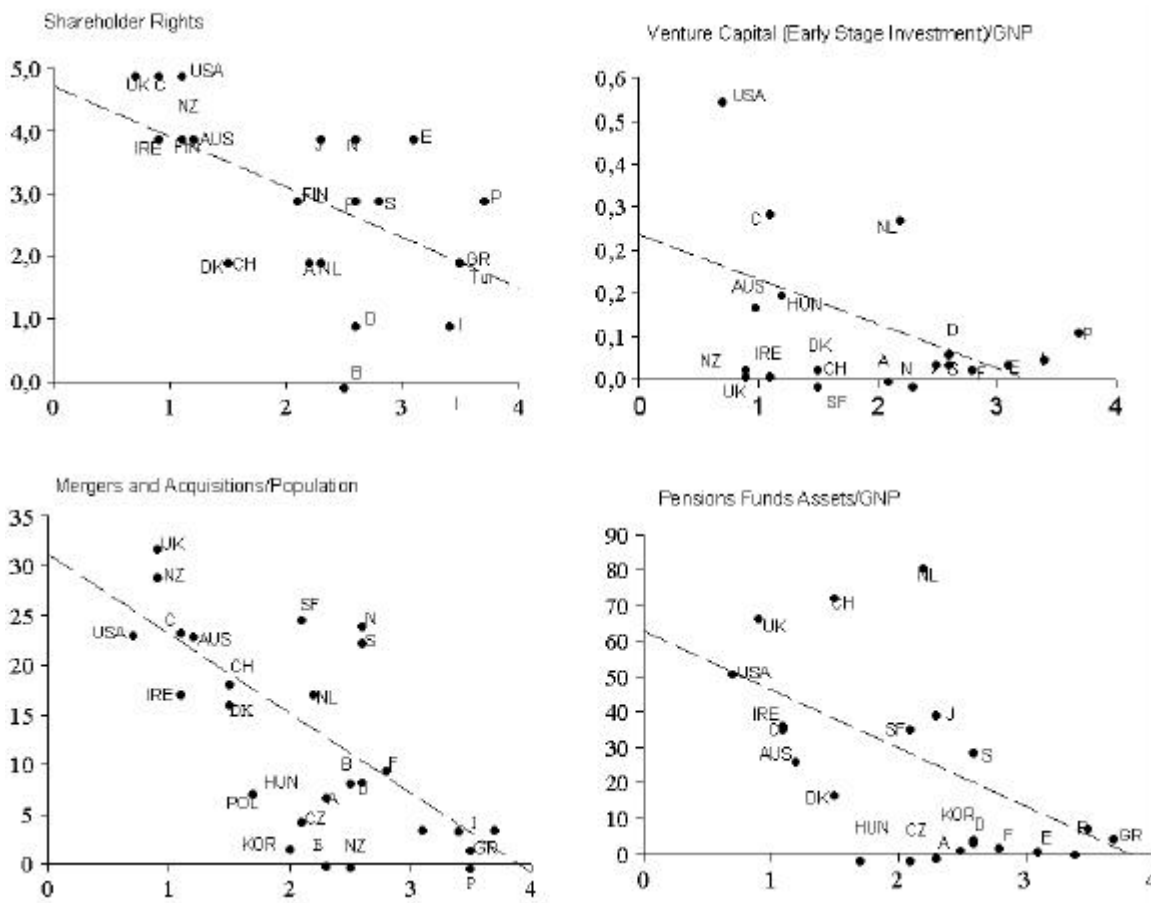
To this end we regress each of our labor market variables on each of our capital market variables. Since we have 14 labor market and 10 capital market indicators, we test a total of 140 relationships. Each regression also includes a constant and the log of GNP per capita in 1994. The latter variable is included to control for the effect that richer countries may have higher standards of employment protection simply because they can afford to have them, i.e., the demand and the supply for employment protection is realistically assumed to be increasing in income. Each equation is checked for serially correlated and non-normally distributed residuals and White's (1980) heteroscedasticity-consistent standard errors are used to compute inference statistics. As data availability differs across countries and indicators, so does the number of observations used in the regressions; the range is between 18 and 26 observations, in most cases it is about 20.

The results of the regressions, given in Table 2, are highly supportive of the theory that high employment protection goes hand in hand with low investor protection. Starting with the labor market indicators, we find that our indices of employment protection legislation and labor standards are significantly negatively correlated with virtually all of our proxies for investor protection. The same holds for our indicators of the centralization of the wage bargaining process. Both the individual indicators for union coverage and coordination, employer coordination, the degree of centralization, as well as the overall index which was constructed from a different source, produce significant correctly signed relationships. This points to the conclusion that lower investor protection is usually accompanied by a centralized wage bargaining process, which is indeed a crucial ingredient of all corporatist regimes. For the mininum wage as well as for our indicators of the unemployment insurance system, the negative relationships seem to be weaker but also existent. The postulated negative relation between investor protection and unemployment benefits comes out most clearly for the indicators based on aggregate spendings on passive and active labor market policies while it seems to be rather diffuse when net replacement rates are used as proxies.

As regards our indicators of the capital market setting, we conclude that M&A-activity and ownership concentration seem to be weaker indicators of a corporatist/non-corporatist capital-market setting than the other investor protection proxies. In addition, we find that a significant correlation between the creditor rights variable and the labor market variables can only be established in two cases. The share of debt finance in GNP, which was used as a further proxy of the creditors position, was found significant more often but in most cases with a negative sign. If a relative high proportion of debt finance were an indicator of a corporatist capital market arrangement, the relationship should be positive. We therefore tend to conclude that the idea that a strong position of creditors, especially banks, along with heavy reliance on debt financing are key elements of corporatist arrangements, is not supported by our data.

IV. Conclusions

It is the key result of the paper that institutional structures on capital and labor markets are not independent from each other, but that they are rather strongly intertwined by politicoeconomic forces. Our model predicts that there should be a positive relationship

between insider protection on labor and capital markets across countries. This theoretical result received strong support by our empirical analysis. Hence, non-competitive corporatist structures are not restricted to the labor market but rather also extend to the institutional setup on capital markets. In fact, considering that the lack of a well-functioning venture capital market negatively affects the creation rate of new firms, the degree of competition on the product market is also reduced. Indeed, a recent study by Nicoletti, Scarpetta, and Boylaud (1999) found that barriers to entrepreneurship are largest in countries where employment protection is most stringent, even though they did not take differences in institutions on capital markets such as the availability of venture capital into account at all. Hence, based on their empirical analysis our results might generalize to even include the product market as well.

The analysis also showed that it is insufficient to argue that the laws are the way they are due to legal heritage and that any fundamental changes would contradict the basic principles of corporatism or Rhineland capitalism. While corporatist regimes can be viewed as supertankers on the open sea in the way that they are very slow in adjusting their course in reaction to unexpected events such as changes in the economic environment, it should be kept in mind that politicoeconomic incentives rather than tradition is the main obstacle against drafting better laws.

The question therefore inevitably arises how are these politicoeconomic incentive structures going to change, thus possibly breaking the ongoing stalemate. The theoretical analysis points to at least four potentially important channels. First, the rapidly advancing process of globalization in particular of capital markets makes the corporatist equilibrium less and less viable. The opportunity costs of maintaining institutional structures which are biased toward insider protection simply rise with globalization. Countries featuring unattractive institutional structures for investors forego foreign direct investments under the conditions of globalized capital markets thus creating a positive externality for those countries where foreign direct investments are diverted to. Second, the accelerating speed of structural change toward the service and information technology sectors, i.e., the much-discussed move to the "new economy", which is of course also tightly linked to the globalization process, raises the economic benefits of an institutional environment which facilitates structural change and undercuts the viability of clinging to the status quo. Third, pressure on continental European welfare states is mounting to reform their pension systems in the direction of more funding and a smaller pay-as-you-go component. However, such a development will make elaborate investor protection and a well-

functioning stock market more important to ordinary workers thus broadening the electorate in its support. Fourth, the political clout for better investor protection will also increase with more widespread capital or profit sharing of workers, a tendency which can already be observed especially in fledgling firms of the "new economy".

In sum, the corporatist institutional setup on capital and labor markets in continental Europe is under increasing pressure to adapt to the new conditions shaped by globalization and rapid structural change. Changes are likely to occur first on capital markets, while institutions on labor markets can be expected to display greater inertia and to therefore lag behind. Yet, the more capital markets will have adjusted in the direction of the Anglo-Saxon model, the less sustainable will also the corporatist arrangement on labor markets become, as a crucial ingredient of the politicoeconomic equilibrium in favor of insiders will have vanished. Hence, the recent boom on continental European stock markets especially in the segments for smaller companies like the "Neuer Markt" in Germany as well as the upsurge in venture capital might pave the way for a drastic overhaul of the overall corporatist continental European model.

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Table 2: Ordinary Least Squares Regressions of Indicators of the Labor Market Setting on Indicators of the Capital Market Setting

Labor market setting		Capital market setting										Signif. coeff.
		Shareholder rights (Antidirector rights)	Size of stock market		Venture Capital		M&A/ Population	Assets of pension funds/GNP	Ownershipstake of three largest shareholders on the 10 largest private non-financial firms	Creditor rights	Debt finance/ GNP	
			Stock market capitalization held by minorities/GNP	Domestic firms listed/ population	Funds raised/ GNP	Early stage investment funds/GNP						
Employment protection/Labor standards												
Employment protection index		-0.515	-2.287	-0.035	-447.552	-2.300	-0.063	-0.020	3.934	-0.117	-0.697	8
		(-6.445)**	(-5.046)**	(-9.152)**	(-12.012)**	(-2.728)**	(-5.384)**	(-2.985)**	(3.707)**	(-0.558)	(-0.991)	
	N	22	22	22	20	20	26	23	22	22	21	
	R²/BJ/DW	0.64/0.54/2.09	0.40/1.83/1.73	0.57/1.77/1.90	0.48/2.28/1.24	0.13/0.63/1.92	0.50/1.99/2.33	0.34/1.17/1.48	0.36/0.93/1.77	0.13/2.42/1.85	0.13/2.26/1.59	
Labor standards index		-1.176	-5.790	-0.071	-930.844	-5.884	-0.092	-0.043	9.734	-0.272	-1.642	7
		(-4.695)**	(-4.991)**	(-4.313)**	(-2.856)**	(-2.367)**	(-1.725)*	(-2.137)**	(3.067)**	(-0.500)	(-0.803)	
	N	20	20	20	19	20	20	19	20	20	19	
	R²/BJ/DW	0.55/0.15/2.03	0.40/0.56/1.66	0.39/2.19/1.50	0.30/0.64/1.25	0.17/0.53/2.25	0.19/0.38/1.91	0.29/0.97/1.66	0.31/1.18/1.57	0.05/0.82/1.60	0.06/1.25/1.74	
Unemployment benefits/Active labor market policy												
Net replace- ment rate 1st month		-2.609	-8.737	-0.304	-3.232e+003	1.413	-0.284	-0.035	10.119	-2.459	7.645	1
		(-1.161)	(-0.945)	(-2.231)**	(-1.713)*	(0.094)	(-1.068)	(-0.305)	(0.490)	(-1.116)	(0.830)	
	N	21	21	21	20	20	25	23	21	21	20	
	R²/BJ/DW	0.22/0.16/1.00	0.18/0.13/1.09	0.30/1.21/0.87	0.20/0.40/0.94	0.12/0.34/1.17	0.20/0.69/1.64	0.09/1.18/1.23	0.17/0.14/1.06	0.19/0.17/1.03	0.13/0.47/1.16	
Net replace- ment rate second year		-10.928	-0.333	-0.473	3775.813	-64.641	0.366	0.078	-12.058	1.308	22.513	3
		(-4.002)**	(-0.019)	(-6.159)**	(1.399)	(-2.082)**	(0.913)	(0.427)	(-0.273)	(0.371)	(1.424)*	
	N	21	21	21	20	20	25	23	21	21	20	
	R²/BJ/DW	0.81/0.01/1.90	0.02/2.63/1.91	0.81/0.63/2.08	0.06/1.91/1.40	0.52/0.97/2.62	0.06/2.31/2.13	0.03/3.15/1.79	0.03/2.51/1.85	0.03/2.38/1.89	0.07/2.09/1.97	
Net replace- ment rate fifth year		-0.329	10.725	0.033	3641.662	-48.017	0.607	0.108	-15.126	6.950	16.901	3
		(-0.085)	(0.658)	(0.189)	(2.099)**	(-1.699)*	(1.997)	(0.721)	(-0.403)	(2.476)**	(1.334)*	
	N	21	21	21	20	20	25	23	21	21	20	
	R²/BJ/DW	0.24/1.33/2.07	0.25/1.31/1.92	0.24/1.19/2.07	0.30/0.59/1.80	0.25/0.62/1.90	0.25/1.56/2.23	0.19/1.48/2.05	0.24/1.41/1.94	0.34/0.62/1.75	0.27/1.84/1.79	
Relative spending on passive labor market policies		-0.026	-0.162	-0.000	0.986	-0.381	0.000	-0.001	0.324	0.010	-0.255	4
		(-1.588)*	(-2.530)**	(-0.613)	(0.055)	(-4.597)**	(0.153)	(-1.052)	(1.998)**	(0.436)	(-1.918)**	
	N	22	22	22	20	20	26	23	22	22	21	
	R²/BJ/DW	0.78/1.09/1.97	0.78/1.46/1.89	0.73/1.02/1.54	0.74/0.59/1.57	0.82/1.53/1.64	0.74/0.72/1.38	0.78/0.28/1.62	0.79/1.29/2.23	0.74/1.06/1.49	0.53/1.24/2.01	
Unemploy- ment benefits received/ number of unemployed		-2.345	-2.150	0.329	4899.612	-22.286	1.144	0.280	28.994	4.594	-6.625	3
		(-0.556)	(-0.111)	(1.991)**	(2.239)**	(-0.356)	(2.498)**	(0.942)	(0.703)	(1.317)	(-0.290)	
	N	20	20	20	19	19	20	19	20	20	19	
	R²/BJ/DW	0.03/0.19/2.10	0.02/0.24/2.14	0.07/0.97/2.37	0.08/0.71/1.93	0.02/0.92/2.18	0.18/1.53/1.91	0.09/0.35/1.88	0.04/0.37/2.19	0.05/0.30/2.17	0.02/0.32/2.12	
Relative spending on active labor market policies		-0.153	-0.711	-0.009	53.256	-1.107	0.011	-0.003	0.615	0.043	-0.854	5
		(-2.654)**	(-1.867)**	(-1.768)**	(0.571)	(-1.842)**	(0.944)	(-0.739)	(0.605)	(0.419)	(-2.275)**	
	N	21	21	21	20	20	25	23	21	21	20	
	R²/BJ/DW	0.15/0.33/2.57	0.09/0.74/2.66	0.09/0.65/2.44	0.02/1.05/2.24	0.12/0.84/2.49	0.10/1.23/1.84	0.06/0.97/2.07	0.02/0.86/2.50	0.01/1.10/2.31	0.18/0.90/2.21	

Table 2 continued

Labor market setting		Capital market setting										signif. coeff.
		Shareholder rights (Antidirector rights)	Size of stock market		Venture Capital		M&A/ Population	Assets of pension funds/GNP	Ownershipstake of three largest shareholders on the 10 largest private non-financial firms	Creditor rights	Debt finance/ GNP	
			Stock market capitalization held by mi- norities/GNP	Domestic firms listed/ population	Funds raised/ GNP	Early stage investment funds/GNP						
Wage setting												
Minimum wage to average wage		-0.031 (-1.529)*	-0.339 (-2.528)**	-0.002 (-1.083)	-15.306 (-0.899)	-0.023 (-0.141)	0.001 (0.306)	-0.003 (-1.980)**	0.401 (1.534)*	0.034 (1.065)	-0.263 (-2.429)**	3
	N	21	21	21	20	20	21	20	21	21	20	
	R²/BJ/DW	0.24/1.74/2.49	0.36/2.21/3.00	0.21/1.18/2.47	0.21/1.35/2.49	0.18/1.11/2.62	0.19/0.84/2.58	0.35/1.76/2.61	0.26/2.20/2.75	0.22/1.33/2.49	0.25/3.13/2.62	
Union coverage		-0.277 (-3.178)**	-1.157 (-6.247)**	-0.011 (-2.019)**	-149.270 (-2.000)**	-2.205 (-2.288)**	-0.023 (-1.905)**	-0.008 (-2.033)**	2.270 (2.463)**	-0.081 (-0.716)	-0.780 (-2.464)**	9
	N	20	20	20	19	20	20	19	20	20	19	
	R²/BJ/DW	0.47/0.57/1.79	0.67/2.96/2.81	0.59/0.42/2.24	0.67/1.93/2.38	0.33/1.69/2.28	0.21/3.34/1.75	0.70/0.81/2.36	0.28/2.52/1.90	0.49/3.25/2.48	0.61/2.02/2.10	
Union coordination		-0.160 (-1.815)**	-1.664 (-3.783)**	-0.010 (-1.326)	-280.412 (-6.132)**	-1.650 (-2.177)**	-0.023 (-1.873)**	-0.017 (-2.902)**	1.888 (1.728)*	0.143 (0.775)	-0.964 (-2.636)**	7
	N	20	20	20	19	20	20	19	20	20	19	
	R²/BJ/DW	0.14/0.18/2.00	0.33/0.34/2.48	0.11/0.65/1.75	0.24/0.22/2.54	0.15/0.62/2.13	0.15/0.75/2.09	0.40/1.37/1.84	0.15/0.21/2.21	0.09/1.15/1.67	0.34/1.11/1.41	
Employer coordination		-0.294 (-3.075)**	-1.862 (-3.772)**	-0.014 (-2.280)**	-196.617 (-2.420)**	-2.493 (-3.760)**	-0.015 (-0.879)	-0.012 (-2.551)**	3.099 (3.572)**	0.100 (0.589)	-0.746 (-1.642)	7
	N	20	20	20	19	20	20	19	20	20	19	
	R²/BJ/DW	0.54/2.24/1.95	0.58/0.93/2.38	0.42/1.12/1.75	0.36/1.23/1.93	0.49/1.46/2.57	0.36/0.93/1.95	0.42/0.97/2.14	0.51/1.41/2.12	0.34/0.92/1.72	0.33/0.71/1.98	
Index of the degree of centralization		-0.820 (-1.150)	-8.691 (-2.194)**	-0.026 (-0.588)	-957.915 (-2.284)**	-13.280 (-2.373)**	0.024 (0.249)	-0.075 (-1.757)**	12.045 (1.508)*	1.935 (1.848)**	-4.414 (-1.527)*	6
	N	20	20	20	19	20	20	19	20	20	19	
	R²/BJ/DW	0.06/1.02/2.10	0.18/1.15/2.45	0.01/1.05/2.01	0.06/0.97/2.28	0.15/1.12/2.30	0.00/0.76/2.07	0.16/1.48/2.21	0.09/0.60/2.33	0.17/1.04/1.66	0.12/0.74/1.74	
Index coverage centralization coordination		2.303 (3.870)**	12.697 (4.313)**	0.132 (3.165)**	2392.886 (4.392)**	17.666 (3.473)**	0.190 (1.788)**	0.098 (2.735)**	–19.713 (–3.140)**	0.127 (0.106)	5.232 (1.664)*	8
	N	19	19	19	18	19	19	18	19	19	18	
	R²/BJ/DW	0.47/1.00/1.59	0.42/1.39/2.01	0.30/0.88/1.14	0.25/2.43/1.78	0.29/1.39/2.12	0.17/0.48/1.68	0.31/0.19/1.83	0.27/0.74/1.78	0.02/0.99/1.42	0.10/0.65/1.44	
signif. coeff.		8	10	9	9	10	6	8	6	2	5	

Notes: Each coefficient indicates the regression coefficient of one of the labor market variables on one of the capital market variables, a constant and the log of 1994-per capita-GNP.

t-statistics in paranthesis based on heteroscedasticity robust standard errors, ** indicates significance at 5%, * at 10%.

N indicates the number of observations the regression is based on.

R^2 is the coefficient of determination.

BJ is the Bera-Jarque test statistic for residual non-normality.

DW is the Durbin-Watson test statistic.