Economic Prosperity and the Dynamism of Economic Institutions[1]

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1. Introduction

When first working on economic growth in the 1960s I began seeing necessary roles for certain institutions [2] – but soon moved on to the microeconomics of macro fluctuations. In the 1990s, though, the "transition" in Eastern Europe after the end of communism in Russia and of market socialism in Poland and Hungary, pulled me back to institutions and institutional systems (Phelps 1991, 1993, 1994). Since then, a deepening impression of mine that something is seriously wrong with economic institutions in *western* continental Europe has kept me working in this critically important yet under-studied area (Phelps 1997, 2002b).

This lecture sets out for a diverse audience a broad thesis on *economic*

[1] This chapter is based on the Shaw Foundation Distinguished Lecture, Institutions and Economic Performance: Aspects of the Globalization Question, Singapore Management University, 23 January 2003, and a lecture given at the Royal Institute for International Affairs, Chatham House, London, 18 March 2003. The material presented here is also drawn from "The Continent's High Unemployment: Possible Institutional Causes and Some Evidence," a keynote address to the conference Unemployment in Europe, CESifo, Munich, December 7, 2002, and various lectures, "Globalization and Development: the Desirability and Difficulty of Finding the Right Institutions," delivered in Bangkok, Beijing, Tianjin, Shanghai and Singapore, in January 2003.

[2] One paper argued that innovations would not be in much demand if business managers lacked the education to appraise them and learn how they are used (Nelson and Phelps 1966). Another paper argued that innovations would be in scant supply if the economy lacked institutions to do the R&D they required – though I didn't consider which institutions would be best (Phelps 1966).

performance – in general and in continental western Europe in particular. A high-performing economy enables its participants to go beyond living long and keeping healthy and secure to engaging in careers offering problem-solving and personal growth. The best performers tend to have it all: high productivity, rewarding work and broad inclusion in business – and consequently relatively high wages, low unemployment and high participation – while the poorest performers generally fall well short in all respects.[3] This suggests that some countries have acquired some elixir boosting performance that is absent in the others, putting them at risk of bad performance in all or most respects. My thesis is that the property I call *dynamism* is that force – and that its absence accounts for the relatively poor economic performance in all or nearly all its dimensions found in some of the large OECD economies. Further, some economic institutions are very good, even essential, for adequate dynamism and thus for good performance and some other institutions are very bad, stifling dynamism and thus impairing economic performance.

I will present to you my (crude) empirical findings so far on this thesis – my tentative identification of some institutions that appear to be vital for dynamism. Yet clarity on the conceptual side is crucial. When we view countries' performance as a function of their set of prevailing institutions, what ought the main dimensions of performance to be? If dynamism is not just another name for the growth rate (of GDP per

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[3] That would seem not to be so, since published measures of productivity in Belgium and western Germany, for example, are quite high, their other performance measures notoriously low. But the Europe-wide *mean* of measured productivity is *not* relatively high and the national measures need *correction* for favorable demographics. (The under-inclusion of low-productivity workers arithmetically increases a country's measured output per employee (and thus its average wage) without increasing the marginal productivity (and thus the wage) of any employee.) In general, high levels of true productivity adjusted for differences in inclusion tend to be *positively* associated with high levels of inclusion, thus high rates of labor-force participation (among men, if not always women), and also with high job satisfaction, thus low unemployment rates. This is largely true even without any demographic correction to the productivity measure: In the league of the 12 large OECD economies, the Big 4 on the European continent – the western part of Germany, France, Italy and Spain – rank poorly in the last two respects and, as a group, not notably well in true productivity; the U.S. ranks well in all respects and the U.K. well in two.

worker or per hour) what does it mean? And how is it generated?

1.1 Another Kind of Theory

Before I begin – a remark on the kind of economics involved here, which may interest trained economists. In traditional economics, which is neoclassical, the market economy is monolithic and differentiated only in inessentials. From this perspective, communism's fall left "the market economy" the undisputed ideal system. In countries that fall short of a market economy in one or more ways the needed reforms would establish rights and the rule of law in their enforcement: the right of households to freely and safely accumulate savings deposits and other credit instruments without the hazard of expropriation, the right of enterprises to set wages and prices to maximize profits without interference by the central government, and the general right to sell to the highest bidder and buy at the best offer. This is the program of neo-liberalism. Supply-side economics goes further, emphasizing the excess burden of the welfare state and political pork-barrel spending, which work through high marginal tax rates to constrict incentives to work and save. This view inspired much research – my first efforts included – on the causes of the rise of unemployment (1977 to 1985) and the relative decline of productivity (in the 1990s) in continental western Europe.[4] It underlay calls for liberalization – for lower tax rates, fewer rigidities – to remedy the Continent's ills.

But from the perspective of the economics I call modern and structuralist, the free and secure exchange of goods for one another, of labor services for goods and of present goods for future goods are *not remotely sufficient* to account for the high level of basic rewards that some economies in the world have provided to participants; hence, the neo-liberal program to pound deviant economies into the market economy mold could leave them short of high performance. The reason is that the neoclassical conception of market

[4] See my earlier work (Phelps 1994), Layard, Nickell and Jackman (1991) and Blanchard (1991).

economies omits the process of *knowledge formation*, which has been central in all countries to high rewards from business life (and crucial to the world's frontier-level of technology as well), and therefore sees it as safe to abstract from the ownership and owner control of enterprises, discovery, entrepreneurs and financiers, the resulting innovations and their diffusion. In real life, economies' markets are imbedded in one or another operating system of economic institutions that governs the creation, development and diffusion of new knowledge. The economies seen as approximately market economies have differed markedly in the economic institutions on which they operate: today, some are quite capitalist in their operating system and some are heavily corporatist – most having a mixture of capitalist and corporatist institutions. Some of these institutions may have impacts on the rate and direction of knowledge formation that are of great importance for economic performance. I begin now by discussing the meaning here of performance.

2. Economic Performance as the Performance of Economic Institutions

When we speak of good performance we mean good performance *under the circumstances* – in other words, *given what cannot be controlled* except possibly at large cost. Though negative market forces and burdensome social policies create difficult circumstances for an economy, it might be performing well in those conditions, just as an athlete may fail to set a record or a personal best owing to adverse conditions and yet be performing well, even brilliantly.

Symmetrically, an economy may have set records over a period rich with possibilities and yet have performed badly considering those circumstances. We do not enter in the record books the times of runners who have had a strong wind at their back since we are trying to measure human performance, not speeds per se. Analogously, the phenomenally low unemployment and rapid growth reached in West Germany, France and Italy in the 1960s or by Japan in the 1980s do not fairly indicate the statistics that would have been registered in normal conditions. When the economic tail winds died down first on the western European continent in the late 1970s and then in Japan around 1990 we got a fairer picture of the performance levels of which these economies were capable in normal, standardized conditions.

Inter-country differences in raw performance data may be misleading indicators of countries' relative performance, since natural endowments such as population size, land mass and climate may have had a significant net influence on the data. Labor productivity in the U. S., for example, is reduced by the extremes in climate but increased by its size and fertile soil (Gordon, 2002). But these fixed effects are no reflection, good or bad, on the organization of the U.S. economy.

What we are interested in is how well a country is doing with the things it *can* control – with enough time and effort, at any rate. And those things are, most importantly, the institutions that it chooses – thus its economic institutions, its social policies and possibly its political institutions. (Perhaps we might also include social or cultural institutions with which the government (or society) seeks to promote or combat various cultural attitudes; but such institutions may tend to be only weakly effective on the whole.) If that is right, the true measure of a country's economic performance, which must correct for the things that it cannot possibly control, measures the *effectiveness of their institutions* in generating performance – particularly their economic institutions. So the *causes* of the poor economic performance in most of continental western Europe, in Japan and Latin America are *institutional* causes. And even if that were not so, the main *solutions* for those problems would involve *institutional reform*, not incremental adjustments of policies – adding roads or ports, rearranging tax rates, cutting pensions, etc., which might make a noticeable difference for performance but not a critical one.

Most recent reform issues are explicitly about particular institutions – in Europe and America as well as the third world. Are some of the differences in economic institutions between the Continent and the Anglo-Saxon world responsible for the Continent's poor relative performance in recent years? Ought the United States, following the recent abuses and scandals, adopt Europe's business accounting system? France's two auditors of every corporation's books? Germany's two-tier corporate board? Britain's non-executive corporate chairmen? In every country decisions are made from time to time on whether to make institutional changes or to try leaving them unchanged until the next decision.

In many, if not most, cases, adopting one or more new institutions will mean copying those institutions as found in other countries. That some institutions spread from country to country, while some others retreat, is a phenomenon that is central to the globalization debate. Later I will observe that one economic system went awfully far in the 20th century – a system profoundly different from capitalism.

I need now to lay out a conception of good economic performance – what I believe it consists of – and to explain why I believe dynamism is essential for such performance. Then I will take up the evaluation of the two surviving *systems* of economic institutions and the valuation of some *individual institutions* that belong to one or both of these systems.

3. Four Main Performance Characteristics

We can hardly say that a country needs reform or restructuring , much less argue for a particular kind of institutional change, without a well-conceived idea of what kind of performance a country ought to judge its economy by and to aim for.[5] For

[5] Tentatively I would suggest we think of countries as maximizing their economic performance subject to some social, or economic-justice, constraints. Rawls (1971) could be interpreted as justifying institutional changes that improve general economic performance until further such improvements could be expected to produce gains for some at the expense of losses to others.

me, economic performance in a country consists of at least four primary elements: the economy's *productivity level* with its associated wage level, the *novelty* and consequent *challenge* encountered in the economy's jobs, the breadth of citizens' *inclusion* in all this, and the *robustness* of the economy to downside shifts in market forces. I regard these as the *performance characteristics* of an economy as currently organized. Other things equal, such as performance in some social dimensions (justice, political life etc.), a country will favor changes in its economic institutions that *increase* the level of productivity and thus wages or *increase* the stimulation that workers find in their jobs or *increase* the degree of the availability of jobs or *increase* the economy's resistance to long slumps in economic activity. (Increases in characteristic with no decreases in the others is an unambiguous improvement in economic performance.)

These *primary* elements together with technology, culture, and market conditions determine various *secondary* indicators: the earnings from jobholding, employee loyalty and other measures of job satisfaction, participation rates and unemployment rates. For example, an improvement in each of these four elements, I would argue, acts to lower unemployment. A lift to (the path of) productivity, in normal cases, tends to raise wage rates and, in so doing, to shrink unemployment (as long as wealth does not catch up). Greater job satisfaction obviously boosts employee loyalty and good will – reducing rates of quitting, shirking, absenteeism and other pathologies – and that tends to lower the natural rate of unemployment. Changes in institutions serving to widen inclusion also tend to reduce unemployment among those whose inclusion has been only marginal, sporadic, precarious. And reduced risk of deep downturns, besides shaving off some of the peaks in the unemployment series, encourage firms to invest more in their employees and workers to invest more in their own skills, both possibly reducing unemployment rates in good times.

The quality of the work experience deserves huge emphasis here, in my judgment. For a well-performing economy the economic institutions must create the opportunity for the working-age population to find and take up challenges, to explore and discover their talents, and to expand and widen their capabilities – in short, the opportunity for personal development. This self-realization is a "primary good" in the nomenclature of John Rawls (1971), it was the apex of achievement in the scheme of Abraham Maslow (1943) and resonates with the "capabilities" of Amartya Sen (1999). I don't doubt it is what Thomas Jefferson (1776) meant in the Declaration of Independence with his memorable term "the pursuit of happiness." Certainly it is the kind of life extolled by the American school of philosophical pragmatism: William James (1907), the Frenchman Henri Bergson (1907), with his *élan vital* and "becoming" as against "being," and John Dewey (1922), with his emphasis on problem-solving. Some trade-offs may exist among the four elements of performance; however, at *given* levels of the other three, the maximum personal development should be sought (subject to the clarification in footnote).

However, it is seldom the case that a country's score in this characteristic is out of line with its performance on the whole. The distribution of characteristics across the population of economies appears to share a pattern found in the attributes across persons. People who are outstanding in one thing tend to score well in other things: they are longer-lived, better looking, more knowledgeable, better musicians, better athletes and so forth. There is not the statistical independence one might expect. This suggests there is one pervasive force greatly affecting a wide range of abilities. My sense is that there is a similar phenomenon operating on the economic performance characteristics of countries: Those having relatively high levels of job satisfaction, including personal growth from the work experience, as reflected by relatively low unemployment and relatively high participation (males as well as females), have average or above-average productivity levels – United States., Netherlands, Denmark, Luxembourg, Switzerland, Sweden, United Kingdom, Australia and Ireland.

Table 1: Performance Indicators

	Market Output per hour worked	Men in the labour force, as percentage of working-age men	Percentage Decline in the Stock Market, Aug 2000 to Aug 2002
United States	100	87	36
France	92	75	42
Germany	92*	82	49
Italy	--	74	42

* West Germany

Table 1 below shows output per man hour indices for the business sector in the Continent's Big 3 and the U.S. recently constructed by Robert Solow and Martin Bailey from 1992 data on firms obtained by McKinsey.[6] Table 1 also shows OECD statistics on the employment rate of men, which I interpret as a sign, however inadequate, of the degree to which people find the available jobs engaging and a source of their development. The U.S. scored higher in all respects than West Germany, and the latter scored a bit higher in all respects than Italy.[7] So it is possible, I think plausible, that there is *one force* that explains why some OECD economies, including the Big 3, suffer

6 Martin N. Bailey and Robert M. Solow (2001).

7 Comparisons with eastern Europe, for example, Poland, with the Mediterranean, for example Turkey and Morocco, and Latin America, for example Argentina, show *far* lower productivity, *far* higher unemployment and *far* lower participation, generally speaking.

lower economic performance than some others and explains why there are still others with even lower economic performance. What might that force be? I have an answer.

4. The "Dynamism" Required for High Performance

For an economy to present opportunities for mental challenge and personal growth – thus to do well in the second dimension of economic performance and to score well on unemployment and participation – there have to be frequent episodes of *change*, synchronous or not across industries. There have to be new ideas for ways to produce goods or for new goods to produce so that there will be new problems to be solved and new capabilities attained. If these are forthcoming, jobs will present new challenges from time to time or new kinds of jobs will arise or both. This sort of experience is what Joseph Schumpeter (1911) defined as economic development – a stochastic process of discrete, disruptive and novel changes in methods and goods, *not* a process of continuous, anticipated economic growth.[8]

But this is not the whole story. Society does not want arbitrary, mindless change – not if its productivity cost would generally exceed any accidental productivity benefit; society wants *purposeful* change that aims for productivity benefits exceeding the costs. So I would say that there have to be institutions that permit and foster a high degree of *dynamism*, where we can think of dynamism as the normal, or average, flow of *well-directed* innovation. Greater dynamism would involve more innovations (per unit time) to select among *or* better selection or both. Here my dynamism parts company with Schumpeter's development.[9] Schumpeter's development centers on *entrepreneurship*

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[8] He defined it as "new and discontinuous changes in uses of labor (p. 95, 1932 edn.).

[9] He did not make such purposefulness part of his definition of development since, for him, an entrepreneur's project was assured financing if (and only if) it was economic – if it passed the Fisherine present-value test conducted in the well-informed and knowledgeable financial

and dynamism is *entrepreneurship* + *financiership*. A high level of dynamism requires the art of financiers to improve the process of selection of proposed innovations by applicant-entrepreneurs, not just the insights and vision of entrepreneurs.

Note that this dynamism is *not* measured by the growth rate of output or of labor productivity. While America's economy is becalmed at the present time, that is not a reliable sign that it has lost its dynamism. Symmetrically, when western continental Europe was growing phenomenally fast in the 1960s and some years after, that was not a sign that the Continent possessed extraordinary dynamism (and that this steady dynamism is now masked by countervailing market forces or a policy of tight money or excessive public spending that have weighed on the growth rate). I am inclined to believe that the Continent had about the same amount of dynamism then as now – however, times past are not my subject here.

5. Capitalism and Dynamism

In spite of its inherent imperfections, economists have generally viewed capitalism as generating just such dynamism owing to its openness to innovations of entrepreneurs at start-ups as well as established firms and to its discipline in restricting innovations (for the most part) to those with expectations of profitability.

The proto-theory of that dynamism, of course, was Joseph Schumpeter's early model of capitalism. (Schumpeter, 1911) He took away the role of innovator from the great scientists and navigators, whom the German school had cast in the part, and placed it with business people. When an idea with seeming commercial promise struck, the businessman, seeing the chance for "fame and fortune," became an "entrepreneur,"

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market he took for granted. His 1939 book states that financiers identify the good bets (p.90, 1964 edn.).

starting up a new operation ("as a rule embodied...in new firms"[10]) to develop and launch the innovation. Commercially successful innovations would tend to drive out some older operations – the Darwinian process he called "creative destruction." But that early model, which left out a great deal, did not persuade critics of capitalism that it was superior in dynamism to some other system. In the Interwar years it came to be claimed that socialism could do it better: state enterprises could have entrepreneurs and state banks could finance the best ideas.[11] Next the corporatism begun in Italy – a system of significant state control without state ownership – was claimed to be the superior organization for harnessing the economy to the national interest.

The debate over systems stirred the development by several European intellectuals of a rudimentary *theory* in which the dynamism hinges on – or is at least strongly fostered by – institutions of capitalism. Mises, sparking the property-rights school, said that the "motive force" of capitalism's entrepreneurs was their unfettered maximization of their own profits; this was a force that socialism sought to do without[12] – and, we can add, that corporatism sought to hamper with barriers to entry and political bargaining. Hayek said that capitalism's entrepreneurs were not appointed, not even licensed: they were self-selected, inspired by their particular experience and emerging visions; thus capitalism opened itself to the experience and knowledge of many participants, potentially all of them – a pluralism of potential entrepreneurs.[13] Mises also

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[10] Schumpeter (1911), p. 66 (1934 edn.).

[11] Actually Schumpeter had touched on the question. "[I]n principle," he wrote, "entrepreneurial motives could be taken care of by other [non-pecuniary] arrangements." (p. 94) But he doubted the willingness of socialism to do that and deplored social reformers' neglect of "stimuli."

[12] Ludwig von Mises (1922, 2nd ed. 1932). He denied making the criticism that pricing is too complex a matter for socialism to administer, crediting it instead to the eclectic Hayek.

[13] A standard citation is Hayek (1945). More central is his later "Competition as a Discovery Procedure" (1978).

noted that an entrepreneurial project is not objectively valued until launched and tested in the market. The creative leaps of entrepreneurs involve what M. Polanyi called "personal knowledge," or tacit knowledge, which isn't in books and thus goes beyond what can be communicated or acquired in familiar terms.[14] For that reason, as Frydman et al. say, heads of socialism's state banks or corporatism's big banks, being accountable to the state or much of the nation's depositors, would be uncomfortable accepting a relatively novel project for financing.[15] (If they were given such decisions, they could engage in self-dealing, claiming truthfully or not that the rejected applications were even more uncertain than the accepted one.) For the same reason, even in capitalism no particular financier could not be expected (contrary to Schumpeter) to rank the economy's whole set of investment projects, since no one would have a general background. So it is crucial that an entrepreneur in seeking financing have access to a pluralism of financiers. Similarly, by analogy, entrepreneurs must have access to a pluralism of managers from whom to pick the one most in tune and with the right background.

In summary, the rudimentary theory of capitalism's dynamism was that it provided having the insights and powers of observation to be good entrepreneurs with the *incentive* to innovate; and, crucially, with the *access* to product markets, to diverse suppliers of finance willing to bear the uncertainty of entrepreneurial projects and to a diverse pool of educated managers capable of coping with new products and markets.

The subsequent literature argues that, to a degree, capitalism has shown some good adaptations to many of the problems facing the prospective users and the prospective financiers of potential innovations. If they lack the necessary education to grasp its use and see its benefits, the intended users of a demanding innovation would not

[14] Michael Polanyi (1962). A forerunner was entrepreneurs' "animal spirits" in Keynes (1936).

[15] See Roman Roman and Andrzej Rapaczynski (1994); Frydman et al. (2001); Phelps (1991).

risk early adoption of it, so the process of diffusion would be slowed or blocked; and, knowing that, innovators would leave such demanding innovations on the back burner, thus reducing the flow of innovation. [16] Happily, most, if not all, of the economies that appear to possess relatively high dynamism, perhaps recognizing the external benefit of higher education for the economy's dynamism, have instituted universities to supply the necessary education and an appreciable proportion of the labor force has foreseen the gains for themselves from acquiring it.

Big banks in general, especially state banks, came to be recognized as poor institutions for lending and investing to innovators owing to the accountability burdens on them, and have been largely replaced by venture capital and large corporations. [17] Venture capitalists have fashioned a sequential mode of financing the entrepreneur they are backing.[18] They also make use of a stock market in which to dispose of his shares through an initial public offering. Established firms that have reached large size also play a role. Although start-ups are the best institution where innovations are highly novel, large size has the advantage in bringing out a highly expensive innovation, which they can finance internally out of retained earnings, new share issues or bond sales.[19] Moreover, the large corporation may contract with small firms for a part of its development of an innovation. This is not to suggest that all problems have been solved or will be. Large corporations run by CEOs with unrivalled firm-specific information and specialist knowledge as well raise issues of how the direction these managers want to

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[16] See Nelson and Phelps (1966).

[17] A state investment bank or the sort of big bank characteristic of corporatism would tend to reject the greatly innovative proposals since it couldn't handle the greater ambiguity of the evidence on behalf of these. See the work of Roman Frydman and Andrzej Rapaczynski (1994).

[18] Richard Nelson and others saw the value of sequential decisions in the 1960s.

take the corporation is to be evaluated by shareowners and when a change of management is appropriate.[20]

Finally, precisely because of the enormous scope that capitalism provides for initiative – without governmental pre-authorization – by firms, including new entrepreneurs starting up firms, and by financial entities, the more capitalist economies possess a welter of company law, regulatory law and bureaucratic rulings providing avenues, or mechanisms, through which entrepreneurs and investors or lenders can operate with some protections from one another.[21] Without these institutions much valuable investing and lending would be stunted or scared off. Thus capitalism and the "free market," if that means a minimalist government that Hayek took the term to mean, are not synonymous. These highly regulated systems *are* capitalist as long as there is wide initiative to investors to take over or sell companies without the permission of the state, wide initiative to a pluralism of firms to exit or enter at will without deterrent penalties or ad hoc obstructions to exit or enter at will, and wide initiative to a pluralism of investors and lenders to decide on the projects of entrepreneurs to be financed without chronic or sporadic government interference.

I find this perspective on the conditions for dynamism very helpful. Some countries have lower economic performance than others because they have *fewer*, if any, institutions *supporting* the latitude and initiative of entrepreneurs and financiers or *more*

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[19] See Amar Bhidé (1999).

[20] Keynes (1936) famously raised the question of whether society ought to go along with an economy ruled by the "animal spirits" of entrepreneurs, which, he implied, are susceptible to wide swings. Needless to say, this issue is one of several that are beyond the scope of this lecture. I would mention that it is briefly taken up in Phelps and Zoega (2001), section 5.

[21] There are regulations setting forth standards of disclosure and transparency to protect investors from business fraud and theft (called "tunneling"), bankruptcy laws to protect firms from creditors, and so forth.

institutions *obstructing* or *diluting* this scope and incentive, and suffer as a result a dearth of dynamism. However, an attempt to explain performance differences in terms of a monolithic Capitalism, Corporatism and Socialism would not be coherent. No real-life country uses only institutions of one system and none of the other two. And some capitalist institutions may be an evolutionary mistake, ineffective for generating dynamism or a hindrance. So we must study individual institutions. These are our raw materials.

Yet some institutions appear to tend to be in a cluster with others, which suggests a degree of complementarity – some of them supporting the others in one country and having no role, hence possibly absent, in another country. So we cannot dispense with the concept of systems; we just need to recognize variations among them and possibilities of substitutions. Furthermore, economic institutions and their potential systems are not the only ones that matter for performance.

6. The Continent's Corporatism, Culture and Social Policy

Although my emphasis here is on *economic* institutions – operating institutions might be a better term, I see *three* kinds of institutions as potentially important determinants of an economy's dynamism: 1st, the *operating system* of the country's economy, with its mix of economic institutions – the focus of the Interwar theorists. 2nd, the country's *cultural attitudes*, which are institutions of a sort. 3rd, the country's broad *social* policies and attendant institutions, such as entitlements legislation. Each category presents a spectrum within which a country must lie. OECD economies appear to range widely within each spectrum.

6.1 The Operating System

Every market economy requires a platform, or infrastructure, of economic institutions on which to operate. As I noted when I began (p. 3), even the most *minimalist* market economies, such as the theoretical "market socialism" on the drawing board in the 1930s, operate with such institutions as property rights and the rule of law. (No one would work to bring home the bacon if gangs were legally free to intercept it and no one would save if the state were constitutionally free to confiscate savings.) The OECD economies, all of which are basically market economies, have those institutions.

Advanced types of market economies, however, go far beyond those basic legal institutions. Moreover, the advanced market economies, including those in the OECD, have not converged to the same operating system – not even approximately. The predominance of *private ownership* is universal in the OECD but the degree of *private control* varies considerably as between the more capitalist and the more corporatist economies. That is potentially important for understanding the relative economic performance of continental western Europe since the present-day operating systems appear to be far more corporatist in *most* continental countries, for all of their capitalist elements and vestiges, than the systems in such comparator economies as those of the U.S., U.K., Canada and Australia.

Corporatism, whatever its precise goals and institutions, was understood from its start to represent a sharp break from capitalism: a shift to much greater government "coordination" and involvement generally in the operation of the economy than existed in highly capitalist economies. It spread far and wide in some three decades. Leaving aside forerunners of corporatism antedating capitalism, the earliest systems labeled corporatist, or corporativist, were instituted on the Continent, starting in the Interwar period: first Italy in the 1920s, then Germany, Spain and Portugal in the 1930s, and France in the 1940s. Early on, corporatism also reached Argentina and Brazil, as well as Japan and Korea. The institutional make-up of these corporatist economies and later ones has since evolved, some seeing revivals of some capitalist institutions, others a widening of their corporatism, and a few countries a bit of both. But their corporatist institutions have endured.[22]

To what end this corporatism? What are the goals that corporatist institutions and public policies are (or at any rate were) intended to advance? Corporatist thought, as it had evolved by the 1920s, like socialist thought on the Continent, was a reaction to the Continent's capitalism, which in a few decades had fast become a huge force driving activity, growth and resource allocation generally.[23] It was a reaction to several things about capitalism, including the individualism it expressed, the inequity seen in large gains to entrepreneurs at the seeming expense of others far less fortunate and its perceived inefficiencies, real or misconstrued. (Though the link is not integral to my thesis, I would add that this antipathy for capitalism and the appeal of increased state control were part of the broad movement on the Continent, which had been mounting for decades, against the liberalism and modernity of the 18th century Enlightenment – Hume, Smith, Voltaire, Rousseau, Madison, Franklin, and Kant, among others.) In particular, corporatist and socialist thinkers alike saw capitalism as unscientific: a rudderless system leaving resource allocation up to the actions of uncoordinated entrepreneurs and financiers, thus resulting in great uncertainty and wide swings; and damaging systems for

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[22] From this perspective Karl Polanyi's globalization "from Napoleon to Hitler" looks to be more the spread of corporatism than that of capitalism, which lost much of its initial gains.

[23] It was not until the end of the century that certain capitalist institutions regained the state of development they had reached in 1913 (Rajan and Zingales, 2003).

third parties, even second parties, since decisions of entrepreneurs, investors and creditors were made without negotiation with other parties – hence an unsettling system and one threatening arbitrary upheavals to the status quo, to the existing order.[24] State ownership plus extensive state control was the socialists' solution, of course, while corporatists touted their "third way" as combining some benefits of private ownership with benefits from state limits on owners' power.

The main conflict needing mediation for Interwar advocates of corporatist systems was the conflict between industrial capital and labor. This signaled concern about wage setting and job creation through investment activity, private or public. (When corporations did badly they risked being nationalized.) Postwar interpreters of these same economies made more explicit the broad meaning of corporatism, referring to mediation of conflicts among the "social partners," including mediation between the individual firm and its own employees. This signaled protecting jobs at the individual firm from the desires for economies by the firm's owners and, in turn, protecting established firms from aspiring new entrants. The terminology evolved too. The term *social market economy* came to be used to denote this evolved corporatism.

The existing corporatist systems, therefore, are essentially systems with predominantly private ownership that contain new institutions and modifications of capitalist institutions in order to diminish the force of capitalism – to limit or control the otherwise uncontrolled and uncoordinated actions of entrepreneurs, investors and financiers in the interest of reducing uncertainty and insecurity – while trying insofar as

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[24] Unlike the socialists, corporatists did not emphasize capitalism's failure to build economic independence, or self-sufficiency, among ordinary workers and foster their development through their work experience; and they complained of the "materialism" of capitalism – and of socialism. Yet in the countries practicing corporatism neither business nor labor has appeared detached from material performance. High productivity and employment have been valued.

possible or practical to maintain adequate economic performance through compensatory efforts to stimulate investment hiring, and productivity gains.

These institutions exist at three levels. First, there are *systematic* penalties, impediments, prohibitions and mandates impacting on entrepreneurs and firms generally intended to damp down "creative destruction." Best known are the extensive requirements on entrepreneurs in the form of a long series of licenses and permissions to be obtained in order to start up a new plant or new firm. Least known are the requirements for consultation by corporate management with workers councils on matters of relocation or change of the business model, such as entering a new industry and exiting the existing one. There is also the well-known employment protection legislation imposing pecuniary penalties on firms in the form of lengthy separation pay for employee layoffs.

At a second level is an infrastructure of institutions with which the government can undertake more informal initiatives and interferences regarding wages, employment and investment. The corporatist economies typically exhibit a tripartite structure containing a network of large corporations, of large labor unions and of large banks – a structure over which the central government can loosely preside through relatively easy communication and interactions with the networks. Public officials having the clout of the central government, sometimes including government shareholdings, can thus negotiate with the corporation heads, the union leaders and the heads of the banks over contemplated takeovers, investment projects, entry and exit. (Corporate ownership tends to produce a large core owner, preferably from an established family, who can well defend the owners against the unions, other corporations and the government.[25]) A

[25] See Mark Roe (2002).

familiar modus operandi of corporatist control effectively taxes the monopoly profits of the domestic banks or provides state loan guarantees in order to create reduced-cost loans for favored investment projects or enterprises.

An informal method of corporatist influence that is of a decentralized kind surrounds each corporation with a set of "stakeholders," such as community representatives and local labor leaders. They may be able to block the opening of a new plant or the closing of an old one through the power of their organization, even if they have no legal authority to bar what they oppose.

At the third level are failures of omission or commission to support the adequate development of certain capitalist institutions: the organized stock exchange (which provides listing rules raising the standards for accounting and governance as well as its liquidity), provisions for corporate control, and educational institutions for managerial talent. Since the main aim behind corporatist systems is to avoid the creative destruction of unbridled capitalism, corporatist governments are not motivated to build up these capitalist institutions. They allow the organized stock exchange to languish with a handful of firms (stock market capitalization relative to GDP went into a steep decline with the advent of corporatism, fleetingly regaining 1913 levels at the end of the 1990s.) They do not facilitate and often oppose hostile takeovers and foreign takeovers generally. And they provide support for universities oriented toward the public sector rather than to commerce and finance.

To summarize: Corporatist systems, while using markets for the purchase and sale of goods and assets generally, possess a network of insiders arrayed to regulate economic and social change. They use an arsenal of penalties, impediments, prohibitions and mandates directed at investors, entrepreneurs and financiers to try to limit and filter the undertakings and abandoning of corporate projects, the offers and refusals of finance, and the purchase or sale of companies and banks. They allow capitalist institutions, such as the stock market, to fall into desuetude. They also implement or facilitate mediation of conflicts between capital and labor and between business and the social partners through a tripartite structure of large corporations, large labor unions and big banks presided over by a large state bureaucracy. Each of these structures is run by elites who put a premium on the survival of existing firms, banks and unions, their ownership and officialdom. Corporatist systems thus have a bias toward the status quo.

Historically, the thrust of corporatism has evolved, even fluctuated, in several Continental countries. Prewar corporatism weakened labor unions in some European countries, even outlawing strikes and reducing (probably inflated) wages as part of an effort to restore employment levels. Postwar corporatism empowered unions through Italian *concertazione*, German co-determination (*Mitspreche*) through workers' councils and a nearly unqualified right to strike. On the other hand, the Netherlands, with the Wassenaar pact of 1983, apparently used the corporatist scaffolding to negotiate increased employment in return for wage restraint. Notwithstanding all this, the degree of "coordination" of a country's workers and of its firms in wage setting is still widely used as a *sign*, or proxy, of the intensity of its corporatism, whatever its substantive importance.

Whether the Continent's corporatism has proved a gain along the lines expected by its builders or instead a road to gathering losses is now hotly debated. Did the Continentals with their "third way" indeed find a method to tame capitalism, preserving existing jobs and firms and owners, without a prohibitive cost? One cost receiving much emphasis is that it lends itself to cronyism and corruption, in which contracts are won and resources allocated on the basis of connections and bribes rather than price competition. This is inefficient and inequitable. Another of its costs is its tendency to stimulate wasteful rent-seeking from the bureaucracies.

What is potentially more serious, if true, is that corporatism costs the economy some of its dynamism – how much, empirically, we don't yet know. In tilting the playing field against outsiders hoping to enter and in prolonging the life of established firms by checking the outflow of labor from them corporatism operates to deprive the economy of the innovations of the start-up firms that would otherwise have entered in order to launch their innovations. Innovating becomes a prerogative of established firms; but since the entrenched corporations do not fear displacement by a newcomer, they have little incentive to do the modest innovations that firms in a more competitive environment would feel impelled or inspired to do.[26] Furthermore, in operating almost intentionally to slow or to resist change except when there is a consensus for it, corporatism denies a great many business participants of the adventure, the mental stimulus and the succession of challenges at work on which business people will depend for their intellectual development and personal growth. And if jobs are less compelling and engaging as a result, there may result collateral damage in reduced labor-force participation and diminished employee morale, leading to increased unemployment. Corporatism prevents the economy from being as *developed* as it would be under an operating system hospitable to innovation. The corporatist economy is stultifying.

Yet perhaps some of the Continent's cultural attitudes and social policies are at fault here. And, in any case, we have to investigate whether inter-country differences in

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[26] Amar Bhidé observes that the entrenched firms found in corporatist settings exhibit the occasional willingness to gamble on a big high-science innovation with a probability of commercial success that is lower than what a firm in a capitalist environment would or could accept.

economic performance are so closely linked to the presence of corporatist institutions and to the absence of capitalist institutions that this stultification can be blamed for any part of the performance differences.

6.2 Cultural Attitudes

Another distinguishing feature of the setting in which continental European economies operate is their culture, which appears to contrast mightily with America's ethos of ambition, competition, self-help and initiative. There is still an antipathy in Europe toward money-grubbing, though not as strong, it appears, as it once was. As Hans-Werner Sinn remarked to me, a German would rather say he had inherited his wealth than have to say he made it himself. A theme in recent papers by Mark J. Roe is that, in Europe, there is relatively poor acceptance of outsize profits from successful investment projects, with the result that political structures arise to determine and stabilize the division among the social partners.[27] Investors receive little protection and gain little corporate control because there is little competition in product markets, so giving increased weight shareowner value would lead to increased mark-ups and output contraction. The bottom line is that entrepreneurs weighing entry would expect to have to hand over an appreciable share of the profit in the event that their venture succeeded while they could expect nothing in the event it failed.

European children, with exceptions, do not grow up with the same experiences as American children. In contrast to most children in Germany, France and Italy, American children generally begin baby-sitting for money at an early age, progress to summer jobs as waitresses and cashiers, and some reach more sophisticated jobs as camp counselors,

[27] Mark J. Roe (2002).

musicians and interns before they are out of their teens. This way they learn what is involved in work – the value of money (how hard it may be to earn it) and work's demands (the importance of discipline and teamwork) – and the gratification from earning one's own way. Europeans' sheltering their children from such early experience could inadvertently channel them away from business.

Another cultural difference is that American children leave home at 18, some earlier; the same is true in the U.K. They are largely self-supporting after that age, except for emergencies and college tuition. Continental offspring expect family support for as long as desired. A recent court case in Italy cites full and indefinite support as a legal right. Some economists explain that Europe's housing market does not permit the youth to move out. In any case, most Europeans see this continuing family support as healthy. It does appear true that European youth have a lower incidence of alcoholism and drug addiction than American youth. Critics of this dependency think it breeds an unduly large share of young people who have little sense of independence and who are unwilling to strike out on their own.

6.3 Social Policy

Social policy in western continental Europe has institutional features not found in the U.S. and even the U.K. Everyone knows that Europe's social insurance and social assistance systems tend to be more comprehensive than the one in the U.S. Europe's personal income tax is generally more progressive than the American one too.[28]

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[28] The U.S. also has a social welfare system – in a medical emergency those without insurance or documents are issued at once a temporary Medicaid card – but it is not as comprehensive and, in general, not as generous, though there are exceptions. The main lacuna in the American system is that low-wage employees are ineligible for Medicaid yet typically lack other medical insurance since their employers, whom the system offers a tax incentive to provide their

Regarding social insurance, it is pretty clear that the provision of so many benefits is a kind of wealth (I call it social wealth) that may very well weaken employees' attachment to their jobs and thus raise the unemployment rate.[29] However, it is not nearly as clear that this social wealth discourages entrepreneurship and thus dynamism. At the dawning of the welfare state, in fact, social theorists such as William Beveridge saw social insurance and assistance programs as fostering resilience, versatility and self-confidence. (On the other hand, self-employed entrepreneurs in most European countries gain little here, being ineligible for several of the social insurance benefits that employees can obtain.)

Progressive income taxation, that is, high tax rates on upper incomes, were originally seen (and perhaps still are) as a way to boost after-tax wages and employee morale at the low end and mid-range of the labor force; such effects might possibly reduce the unemployment rate. However, it is plausible that such income-leveling may cost the economy some loss of dynamism (in which case the progressivity may be harmful on balance to productivity, to job satisfaction, and to other aspects of economic performance). Conservative economists in America argue that entrepreneurs must invest money of their own in order to obtain the rest of the money from the venture capitalists and if the tax rates on their incomes are high (because they have high incomes), they will be unable to start up new companies.

For dynamism, the most problematic part of Continental social policy is something quite different. In the name of "social protection," meaning protection from capitalism, Continental social policy in some respects militates against innovation. The

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employees with medical insurance, find it too expensive to extend that insurance to their low-productivity employees. The states insist on a uniform insurance program for all employees and pile up insurance protections that the politicians believe their middle-income voters want.

exception culturelle, which is not confined to France, protects vested interests in the entertainment sector from overseas competition through quotas on TV programming and subsidies to established domestic producers. Moreover, this social protection is selective in a way that particularly hinders new entrepreneurs and thus reduces dynamism. A collaborator of mine, David Jestaz, points out that the French subsidies to the arts seldom if ever go to *new* producers to help them to enter the market with their new work – new filmmakers, new musicians, and so forth. Since the same entrenched producers and artists get each year's subsidies, potential new producers find it all the more difficult to break into the field. Another young economist, Rainer Fehn, points out an inverse relation among European economies between protection of investors and entrepreneurs on the one hand and protection of employees.[30]

If some or all of these things about the Continent's system, its culture and social policy, are true, then the continental countries, especially the Big 3, which have done so badly in the past decade, would do well to attempt some changes – not a wholesale revolution but selected changes, in some cases incremental changes – in the hope of sharply boosting the dynamism of their economies. Higher employment would be one of the benefits to result. But are they true? In life we sometimes have to decide without evidence but these are researchable propositions, most of them at any rate, so we would do well to look at the evidence we can find, beginning with the evidence at hand.

7. Inspection of Some Evidence

I can present a few pieces of evidence for some elements of my thesis on dynamism and its benefits for performance in the following Table.

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[29] This has been a constant theme of mine since my *Structural Slumps* (Phelps, 1994).

[30] Rainer Fehn and Carsten-Patrick Meier (2001).

INSERT TABLE 2

Part of the evidence is simply an imaginative reading of recent history, which is perfectly legitimate though not sufficient to convince. The Continent enjoyed rapid growth when it could exploit the yawning gap that had opened up between its technological practice and the best practice in the world – generally U.S. practice but later also Japan's practice in some of its export industries. This gave a misleading impression that its economy was structured for dynamism somehow – so much so that it would naturally become the world's leader in the levels of productivity, unemployment, participation and the rest. In fact, the dearth of dynamism became apparent once the gap narrowed to such an extent that investing of all kinds – in new employees, new plants, etc. – was no longer at the elevated levels necessitated in the catch-up phase. Then unemployment rates crept up inexorably to much *higher* levels than the range in which the rates fluctuated in the U.S. and the U.K. It is pretty compelling that what the Continent needs to spark higher levels of activity is a return to higher rates of such investing, though of course it will not be possible to get back to the rates of the 1960s.

Do the data give evidence that corporatism is largely behind the relatively weak performance of the Continent's institutional structures or is it the Continent's cultural attitudes or its social policy? I would point out that the large OECD economies that appear to me to be the most corporatist – Germany, Italy, Spain, France and Belgium – all have relatively high unemployment rates and most have low or average male participation rates; the economies that appear most clearly capitalist – U.K. and Ireland, the U.S. and Canada, New Zealand and Australia – all have relatively low unemployment rates and high male participation rates. On the productivity side there is some work to do to correct for various demographic influences; but it is not obvious that, say, clerical workers earn as much in the former group as they do in the latter group. It is true that the latter group have heavy welfare entitlements; but so does the U.K. and so do two other high-employment countries, the Netherlands and Sweden.

Yet it is fair to say that this recent experience is an inspiration for the dynamism thesis, not a test of it. What fresh tests can we submit the thesis to?

Here is one set of tests: Corporatist systems tend to inflate the share of gross income going to capital rather than labor by suppressing competition among incumbent firms and by controlling and impeding entry of new start-up innovators. This same monopolization plus the costs of the bureaucratic red tape and the unanimity-seeking required by investment projects also depress the value (per unit) put by CEOs on a marginal increase in the stocks of all or most of the various business assets (plant, equipment, job-ready employees, customers) in which firms must invest in order to make profits. This weakness in business-asset values results in turn in diminished investment in these assets by the business sector and thus reduced real wages, employment and entrepreneurship. Are these predictions borne out by the data? I think so. Capital’s share is far larger on the Continent, I believe, than in the U.S. and U.K. and share prices are, I believe, somewhat depressed *relative* to the stocks of business assets (in spite of the monopoly power created)[31]. And this has been the pattern for at least a decade or more.

Some novel ideas for empirical tests began arising in the course of a paper I published with Gylfi Zoega in 2001 on structural investment booms, which followed a shorter piece in the *Financial Times*.[32] The background to this research was the record-breaking investment boom in the U.S. over the second half of the 1990s, which was not explained by existing models (at least not models that tie the expected growth rate of productivity to recent growth). My modeling of the boom was based on the theory, given an intuitive expression by Spiethoff and Cassel, that asset values and thus investment activity jump *off* their accustomed saddle paths and *onto* (explosive) boom trajectories when there is the sudden expectation of new uses for capital (at normal rates of return) – in some new method, new product or new region – *at some future date*. These effects are apt to be "signalled" by the value of the *stock market* per basket of business assets or per unit of GDP. (In the unemployment equation studied in the 2001 piece this "normalized market cap" variable performed very well.) Thus market economies are excited by visions of a *future* lift to productivity. At least the more entrepreneurial ones are.

It also came to me that investment booms may be generally good (on balance) and are a sign of dynamism. A productively creative economy has the occasional investment boom followed by a spell of tidying up, learning by doing and the occasional research just as a productively creative person has the occasional rush of energy and focus, then returns to a relaxed and ruminative state.[33]

These thoughts led to a question: If some economies are more capable of

[31] I have in mind a fall in the share price *schedule* plotted against the size of the stock of the business asset or the representative basket of such assets.

[32] Phelps and Zoega (2001), 85-126. See Phelps (2000b).

[33] Phelps and Zoega (2001), section 5. See also Phelps (2000a).

responding to the prospects driving a boom than others, was there evidence that the countries having the strongest booms in the late 1990s had more entrepreneurial economies? More of certain capitalist institutions and fewer of certain corporatist ones? Yes. Some countries were clear boomers – the U.S., U.K. and Holland, with Canada, Australia and Sweden less so; others were non-boomers – Germany, Italy and Belgium most clearly – with Spain, Austria and France showing more life (but Spain's rise was a one-time benefit of hiring liberalization). Further, the *institutional endowment* among the boomers *differed markedly* from that of the non-boomers.

The data tend to confirm that a country was more likely to have seized the boom if it had capital markets providing entrepreneurs with access to venture capital and stock exchanges offering liquidity and transparency, product markets open to start-ups and to new entrants generally, and labor markets offering opportunities to hire and boss and fire employees without large and uncertain penalties and restrictions. The ranking of countries by strength of the boom correlates well with several institutional indicators: notably, the OECD index of bureaucratic red tape and the OECD employment protection index. It is also weakly correlated with that strange "index of corporatism" sometimes used, the degree of employer- and union-coordination in wage setting.

Two much more original results are, for me, most arresting. The proportion of the labor force having a university/college degree turned out to be strongly correlated with a country's ranking by strength of the boom. The inspiration to try this indicator came from the Nelson-Phelps paper.[34] That simple model of the diffusion of innovations emphasizes the facilitating role of advanced education in an entrepreneurial economy: managers have to use their education to solve the many problems that new ideas pose. A

[34] Nelson and Phelps (1966).

corollary I would add here is that *without* such problem-solving capacity in others, the supply of innovations will also suffer as well as the diffusion. Entrepreneurs will innovate fewer intermediate and final products if, expectably, their diffusion would be slowed or permanently limited by a dearth of sophistication among the managers, employees or households on whom adoption and use would depend. Furthermore, entrepreneurs, who may themselves not be of sterling educational attainment, can't design and launch commercial innovations without well-educated managers to address legal, technical, financial and even cultural problems that come up.

Another unexpected result was the stunning predictive power of a proxy for the prior development of the stock market – stock market capitalization in *1988* normalized by the GDP. There are three reasons for its importance, I believe. First, innovators often want a stock market for their financing or require a venture capitalist who will in future need to sell their shares to that market. Second, the listing of a firm's shares in a stock exchange is like a seal of approval the quest for which improves firms and thus boosts the price of the shares, since to gain listing the firm has to meet requirements for financial accounting – transparency, frequency, prompt disclosure – that the exchange finds advantageous to impose. Finally, the stock market establishes benchmarks indicating what various kinds of enterprises are worth, which helps investors in the private equity market.

The last exercise has been to examine how the *levels* of the various performance indicators, such as the unemployment rate and labor productivity, correlate across the (large) OECD economies with these institutional data. This work is in its infancy. An initial look at the data is provided in some recent reflections of mine.[35] I look at these

[35] Phelps (2003).

levels in a relatively normal year, namely 1995, just before the upheaval of the investment boom in several of our twelve economies – as if the economies were in a steady state that year.

Clearly, the cross-country patterns are favorable to my thesis that institutions fostering dynamism correlate positively with performance level and institutions blocking or inhibiting dynamism correlate negatively with performance.

8. Conclusions

Two conclusions seem to me reasonable to infer, however provisionally, from the rudimentary theory and preliminary evidence. First, a nation's *economic* institutions – not just the political/legal and the social institutions that have been receiving great attention in recent years – are *involved* in determining its economic performance. This has crucial implications for the kind of theory that economics must develop in the 21st century, as suggested in my introductory remarks.

Second, the disappointing economic performance on the Continent results in *substantial* part from the underdevelopment of some capitalist institutions and the presence of some unfortunate corporatist institutions. If that is right, steps to shrink the welfare state, such as trimming pensions or cutting social entitlements, while they might typically give a boost to employment and productivity, would not be transformative: investment activity would remain weak, jobs would still be boring, employment still low. Without more capitalist energy coming from greater entrepreneurial access and a better-functioning financial sector, revitalization of old Europe is not in prospect.

Table 2: The 1990s Investment Boom

	Mean Annual Growth Rate (%) of			Stock Market Capitalization as % of GDP	Red Tape Index	Union & Employer Coordination	University Degree Holders, as % of Labor Force
	Fixed Investment	Real exchange rate	Labour's share in GDP				
A strong general investment boom in evidence							
United Kingdom	10.8	8.5	2	80	0.5	2	21
United States	10.6	4.3	0.6	50	1.3	2	33
Canada	11.6	-2.2	1.3	45	-	2	37
Holland (1997)	7.6	0.9	0.3	40	1.4	4	22
Sweden (1997)	9.1	-2.4	2.1	50	1.8	6	28
Australia (1995)	8.5	-0.2	-0.4	50	-	-	24
Few signs of investment boom driving the expansion (if any)							
Austria	8.7	-1.4	0.1	13	-	6	8
Spain	8.8	-1.3	-0.7	25	1.8	3	16
France	6.2	-1.9	-0.3	25	2.7	4	19
Belgium	6	-1.9	-1.1	42	2.6	4	25
Italy	4	0.3	-0.7	18	2.7	4	8
Germany	3.6	-2.2	-0.1	22	2.1	5	23
Euro Zone	5.7	-1.5	-0.5	-	-	-	-

Source: OECD, *Economic Outlook* June 2000, Appendix and Chapter VII.

NOTES: Mean growth rate is the mean of the annual growth rates up to 1999 from 1996 or the start date given in parentheses. Investment is real gross private non-residential fixed capital formation. Compensation per employee is real total labor cost per person employed in the business sector. Labor’s share is compensation per employee to output per employee in the business sector; only the growth rates from 1996 are available. The exchange rate is an index of trade-weighted nominal rates deflated by consumer price indices. Market capitalization figures from Morgan Stanley Capital International are for 1988. The OECD red tape index is from The Economist, July 1999. Proportion of labor force with university degree is from the OECD.

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