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Cultural globalisation, institutional diversity and the unequal accumulation of intellectual capital

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National economies used to be characterised by cultural standardisation and social protection. Globalisation pushes cultural standardisation beyond the boundaries of national states and induces a global dilution of the standards of social protection. At the same time, if national economies specialise according to their comparative institutional advantage, global economic integration may help promote institutional diversity and variety in welfare policies. However, the institution of a global system of intellectual property rights may seriously limit the 'biodiversity' of capitalism and imply a global revenge of a new international form of Taylorism. The overall result may be a very unequal accumulation of intellectual capital. Paradoxically, the modern global economy may end up sharing some aspects of the agrarian societies that have been displaced by modern nation states.

Key words: Global economy, Global development, Cultural standardisation, Social protection, Institutional diversity, Intellectual property rights
JEL classifications: F020, O340, P140, P510

1. Introduction

Is globalisation pushing the world towards a single model of capitalism characterised by a more unequal distribution of the intellectual assets embodied in individuals and in commodities such as patents, copyrights and trademarks? What can national governments and international organisations do to promote a more egalitarian access to the acquisition of intellectual capital?

Globalisation is a complex phenomenon and the answer changes according to the particular mechanisms on which we focus our attention. Even when we restrict our analysis to the problems considered above, the answers are complicated by the fact that each mechanism involves different tendencies. Before trying to guess the aggregate trends, an

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accurate explanation of the overall changes taking place involves a preliminary analysis of the implications of each mechanism.[1]

Globalisation involves pressure to overcome national cultures in the name of a global culture. In this respect, there is a paradoxical continuity between nationalism and globalism. They are both aimed at some form of cultural standardisation associated with the development of markets. Moreover, globalisation is also related to a strong pressure towards economic integration. Finally, globalisation can be seen as a new world order entailing the worldwide standardisation, definition and enforcement of some legal rights and, in particular, of intellectual property rights.

All three of these aspects of globalisation have important, and often contradictory, implications for the distribution of intellectual assets. This paper dedicates a section to each of them.

In the next section, we focus on cultural standardisation and on the complex relation between globalism and nationalism. While worldwide cultural standardisation may imply a more equal distribution of intellectual assets across countries, it can divide the citizens of the same nations into 'cosmopolitans' and 'provincials'. Differential access to world culture can become a traumatic division in a culturally convergent world. Moreover, unlike a national economy, globalisation cannot rely on any form of social insurance deriving from national solidarity. Thus, if globalisation completes the process of economic integration started by nationalism, it does so without relying on the forms of social protection against the risks related to the workings of markets that characterised the national state.

In Section 3, we consider the relation between economic integration and the institutional diversity of capitalism. Increasing economic integration may lead to the survival of the fittest forms of economic organisation compatible with the rules of the globalised economy. It may, therefore, favour convergence towards a single model of capitalism. However, economic integration may cause an increasing institutional divergence among national economies because each nation may specialise in those sectors where it has a comparative institutional advantage. Thus, in an integrated global economy, different distributions of intellectual assets can characterise different countries. Globalisation, conceived of as increased economic integration, may even be compatible with an increased variety of national distributional arrangements.

Finally, in Section 4 we consider the fact that globalisation is also related to a worldwide system of property rights and, in particular, to the establishment of global private property rights on reified intellectual assets. When we focus on these various aspects of globalisation, we reach different conclusions. In this third case, globalisation implies a pronounced decrease in the 'biodiversity' of capitalism and has some universal implications for the distribution of intellectual assets. Because of stronger intellectual property rights, non-owners have a disincentive to invest in the related specific skills beyond that arising from lack of access to the ownership of physical capital. We shall argue that the global privatisation of intellectual assets can explain both the relative decline of advanced capitalist economies based on marginal 'bottom-up' innovation processes and the increasing difficulty that some developing countries experience in catching up with the industrialised nations.

In the concluding section, we consider the possibility that the overall result of globalisation may be a return to some inequalities paradoxically similar to those of the

[1] From this point of view, the methodology used in this paper, is consistent with Lawson (1997) and most essays contained in Lewis (2004).

agrarian societies that were replaced by modern national economies, and we try to indicate some policies that might bring about a more egalitarian distribution of intellectual assets.

2. Globalism, nationalism and cultural standardisation

Gellner defined nationalism as a movement aimed at establishing a coincidence between ethnic and political communities: 'one national state, one national culture!' has been the political motto of nationalism.[1] The role of nationalism has, indeed, been the diffusion and the popularisation of a developed culture with a written language, that has often replaced a large number of dialects, stratified class idioms and behaviours, and all sorts of traditions.

The stagnation of agrarian societies allowed the endless repetition of the same production process. From one generation to the next, their members could perpetuate the same jobs based on the same skills. Cultural diversity stabilised these roles. It limited both horizontal and vertical mobility and allowed the endless reproduction of the 'social fabric' over time. In agrarian societies, production and distribution were hierarchically organised according to cultural and social ranks. Cultural diversity was both a condition and a result of stagnation. It caused the stagnation of society by depriving it of the incentives associated to social mobility. At the same time, stable configurations of cultural diversity were favoured by the stagnating structure of society. This vicious circle made the development of an industrial society particularly hard, and certainly not given by some form of historical necessity.

Indeed, two very special conditions, which emerged quite casually in two countries (England and France) during the traditional rearrangement of agrarian societies, enabled the formation of a mobile industrial society: the clear prevalence of a high culture over a vast number of traditions and dialects and, at the same time, the almost undisputed dominance of a state whose leaders were somehow related to this high culture.

The 'marriages' of the British and French states with their respective high cultures created the conditions for the development of factor mobility and all sorts of markets. Typically, merchants and other groups, whose interests were related to the extension of trade, allied themselves with the Sovereign to enhance the power of a nation state. The nation state standardised languages, traditions and laws and eliminated the numerous barriers that feudal lords had imposed to limit mobility. Other countries (for instance Germany and Italy), though having only a 'bride' (the high national culture) and no 'groom' (a potential nation state) very soon followed the same path. National unity was achieved despite adverse conditions for a marriage between the state and a high culture. Others lacked both the bride and groom and found it difficult to imitate this model of development. In their case, nationalism meant ethnic wars and, sometimes, even ethnic cleansing.[2]

After a while, cultural homogenisation and development produced a self-reinforcing equilibrium, different from the self-sustaining interaction between cultural diversity and stagnation that had characterised agrarian societies. Cultural homogenisation allowed rewards for productive and innovative effort independently of the social and geographical

[1] See Gellner (1983, 1998, 1999). Pagano (1995) considers various theories of nationalism while Pagano (2003) gives an overall evaluation of the 'political economy' of Ernest Gellner. As Gellner recognised, his theories were influenced by Carr (1945).

[2] While giving an important role to economic factors, Gellner considers ethnic identities and nationalistic feelings to be an important cause of modern conflicts. In this sense, his theory is in sharp contrast with the 'neoclassical theory of conflict' that centres on the trade-off between production and appropriation. For an evaluation of this theory, see Cramer (2002).

positions of individuals. It created strong incentives to develop the economy. Moreover, while the rewards for success were enhanced by cultural homogenisation, the risks of failure were decreased by it. Because of cultural homogenisation, each investment in human capital became more liquid and, in case of failure, more easily reversible to alternative uses. In the process of creative destruction, successful creation was now richly rewarded while, at the same time, the costs of destruction and failure were substantially decreased by the enhanced reversibility and liquidity of human skills. Development and continuous structural change backfired on cultural homogenisation. If the emergence of mobility and markets required some minimum degree of cultural homogenisation, their development implied a large further increase in cultural homogenisation that, in most cases, caused a deepening of the feelings of national solidarity.[1]

While the national state had originated this self-reinforcing process, it had opened a Pandora's Box of cultural and economic winds that could hardly be contained forever within the boundaries of nation states. Some national states (Britain with its Commonwealth and the USA with its federal system, with its frontier and with its melting pot of different ethnic groups) developed a sense of 'global mission' and started doing to other languages and traditions what the nation state had done within its own boundaries.[2] The advantages of mobility and cultural standardisation could now be reaped at a global level.

Globalisation marks a new age. It is different from the empires that have in the past unified politically relevant parts of the known world. The Roman Empire and, after that, the Holy Roman Empire (as well as the Byzantine and the Ottoman empires) never posed a comparable challenge to cultural diversity. They kept the universal culture and the lingua franca as the distinctive mark of the ruling classes. Modern globalism spreads the dominant culture well beyond a ruling minority and, in this respect, decreases inequalities between countries.[3]

The nature of modern globalism is also fundamentally different from nationalism. The slogan of the Nationalists—'one national culture, one national state'—is not replaced by the motto 'one global culture, one global state' but rather by the slogan 'one global culture, one global market' or, in other words, for most 'globalists', the political governance of the market is not relevant.

The political unity of the nation allowed the possibility of using both cultural homogenisation and some forms of social protection to decrease the risks associated with the market economy.[4] In the case of nationalism, some social protection and a process of

[1] Cultural homogenisation and solidarity are, thus, two complementary aspects of nationalism. At the same time, they are also substitutes in the sense that they can act as alternative insurance devices against the risk associated to the specialisation of skills in a mobile market society. On this point see D'Antoni and Pagano (2002).

[2] According to Hardt and Negri (2000), the importance of the role of the USA in the process of globalisation has been enhanced by its differences from traditional nation states that stressed the role of ethnic identity. The legitimacy of the power of the USA has rather been based on the belief in the superiority of the American way of life marking the boundary between the civilised world and the various realms of evil. In this sense, US power is different from the 'ethnic imperialism' typical of the traditional national states. It is rather aimed at establishing an inclusive Empire that should group together all the 'civilised world'. Since 'civilisation' should not have limits in his struggle against the forces of evil; also the Empire (unlike the old forms of 'ethnic imperialism') should have no limits.

[3] It is not inconsistent with this view that integration may first occur among nations sharing the same civilisation (common history, traditions and readings). However, it is an open issue whether this should be considered as a first step for integration among these civilisations or lead to disruptive clash among civilisations (see Huntington, 1997).

[4] Within certain limits both cultural standardisation and social protection can be used as forms of social insurance against a job loss (for a formal model see D'Antoni and Pagano, 2002).

cultural homogenisation developed in tandem as forms of insurance against the risks of the market specialisation that was taking place. While cultural standardisation could make human skills more 'liquid' and decrease the risks of specialisation, social protection (in the form of unemployment benefits and employment safeguards) could offer an alternative insurance device when high productivity required illiquid specific skills. The national state could offer this second form of insurance as well, since the risks involved by the specialisations characterising the different sectors were not strongly correlated. This meant that production could be diversified in a considerable variety of sectors; otherwise, the nation would be putting too many eggs in too few baskets.

In the absence of a reliable system of 'international insurance', nation states could balance the gains from trade due to international specialisation against the risks entailed by reduced product diversification.[1] Balancing these two factors involves an 'optimal degree' of specialisation, one less pronounced than that implied by the 'gross' gains stressed by the standard theory of comparative advantage. The 'net' gains of international specialisation should also take into account the fact that the costs of supplying internal social protection rise with a decrease in the diversification of the national economy. Unfortunately, this 'optimal' level of specialisation may be difficult to achieve in a globalised economy. Each single individual moves to the sectors that have become more profitable as a result of international trade and thus gains the full benefits of the increased specialisation. By contrast, each individual also shares with all the other individuals of the same nation the increased risk associated with the decrease in the number of productive sectors,[2] and may well 'free ride' on the supply of the public good of collective social security. Even if national governments are aware of the divergence between the private and social 'net' benefits of specialisation, they may find it difficult to devise policies that can align individuals' interests with the national interest. An 'international tragedy of the commons' could easily spread, thus increasing insecurity in the global economy.

Unlike nationalism, globalism cannot provide economic integration where the risks of specialisation in the mobile (and sometimes volatile) market economy are matched by forms of redistribution and social protection. Also, the use of cultural standardisation—the other instrument by which national economies have traditionally insured their citizens against the risks of market mobility—is seriously impeded in an internationally integrated economy.

In the global economy, access to the dominant cultural standard is much more unequally distributed than it was in the national economies of the past. This inequality creates a division between workers endowed with mobile intellectual assets that are easily employable in the global economy and those who have skills that are less mobile and more specific to the national economy. The first group of workers—the 'cosmopolitans'—may find it relatively more convenient to replace social protection with cultural standardisation as a form of insurance and to opt out of the mutual insurance system that characterises nation states. Because of their mobility, the 'cosmopolitans' become difficult to tax. Their relatively easy exit from a national system of mutual insurance makes it even more difficult to finance the traditional forms of social protection supplied by the nation state, and worsens the situation of those workers—the 'provincials'—who cannot use

[1] Guimaraes (2003) provides a survey of the links between specialisation and vulnerability.

[2] The argument is developed in Bowles and Pagano (2006). Michele Di Maio has pointed out that the issue is not only the quantity of the sectors but also their quality. Some sectors may be characterised by more fungible core competencies than others. See also Di Maio (2006), which contains a complete account of the trade-off between specialisation and social protection.

access to the global cultural standard as a (partial) substitute for social protection (Bowles and Pagano, 2006; D'Antoni and Pagano, 2002).

The present globalised world ends up exhibiting some paradoxical similarities to ancient agrarian societies. In addition, in many countries today, a cosmopolitan elite speaks a new Latin that cannot be used as a working language by the majority of the population, and is more integrated with the elites of other nations than with the citizens of their own country. Both the horizontal and vertical redistribution policies, which distinguished the classical nations from the institutions of agrarian societies, relied on a common culture and on a political entity, which were both a source and a result of their identity.[1] The vanishing importance of national identity favours regional differentiation and resistance to horizontal redistribution. Moreover, within each region, it increases cultural differentiation and social opposition to vertical redistribution policies among different ethnic groups. Thus, paradoxically, in an increasingly integrated world, regional and ethnic disintegration take place simultaneously, corroding the cultural unity and solidarity of many nations. While some of the old forms of inequality tend to re-emerge, the nation states, facing a shirking tax base and increasingly correlated risks, are not able to offer their citizens the security that differentiated their 'imagined communities'[2] from the hierarchical agrarian societies that they had replaced.

3. Comparative institutional advantage and the 'biodiversity' of capitalism'

While cultural globalisation and economic integration mark common tendencies of the modern economy, it is still an open issue whether the different national economies tend to converge towards a single model of capitalism.

We define a model of capitalism by referring to the nature of its property rights and of its technologies and resources. The features of their interactions shape them and can be used to distinguish one form of capitalism from another.

Technology and the nature of resources tend to be biased in a well-defined direction by property relations. At the same time, some property relations tend to prevail where some types of technology and resources are prevalent in the economy. Thus, the relations between technology and property rights tend to be self-reinforcing and to define 'organisational equilibria'[3] that are, in many respects, related to the Marxian concept of the mode of production as well as to recent new-institutional and radical theories. Indeed, each of these two theories can throw some light on one of the two directions of causation that characterise the interaction between property rights and technology.

[1] Individuals have always been characterised by multiple identities competing with each other (Sen, 2006). In a global economy, national identities are more easily out-competed by alternative identities, including religious, ethnic and regional identities. Despite the pessimism due to recent history, one can still hope that a universal human identity could also gradually emerge as an appealing alternative to the weakening national identities. While identities compete against each other, rational choice theory cannot easily provide a satisfactory explanation of the particular identities that are chosen by the individuals (Pagano, 1995).

[2] The definition of nations as 'imagined communities' is due to Anderson (1991) who points out that their 'glue' is not the face-to-face interaction of the standard smaller communities but a solidarity stemming from a common past and a shared culture.

[3] We characterise these self-reinforcing relations as organisational equilibria in Pagano (1993, 2001B) and Pagano and Rowthorn (1996) where we study the formal conditions under which multiple equilibria exist and are stable. In Earle *et al.* (2006) we show that, for a sample of Central European firms, the relation running from property rights to technology is stronger than the opposite relation. The relation between rights and technology can be seen as a case of institutional complementarity (Aoki, 2001, p. 396). Complementarities do not only characterise the relationship between rights and technology but also the relation between rights and other legal positions (Pagano, 2000, 2007A, 2007B).

Radical economists have often emphasised the first relation of causation.[1] They have claimed that technology is not neutral and that it is conditioned by existing social arrangements. However, this relation of causation can also be understood by referring simply to a well-known principle of standard neoclassical theory: that changes in the relative costs of factors (including their agency costs) imply the substitution of the factor that has become more expensive for the one that has become cheaper. Changes in property rights (and, more generally, changes in the legal positions that characterise different governance systems) imply changes in the relative cost of using factors. For instance, some of the agency costs of using difficult-to-monitor and specific factors are cancelled out by the strong incentives that are associated with ownership. Thus, when property rights change, non-owning high-agency-cost factors are replaced by owning high-agency-cost factors. In this sense, as many radical economists have indicated, technology is not neutral but, rather, is biased in a particular direction.

The second relation of causation can be related to the New Institutional analysis.[2] This approach has clarified how ownership and control tend to go to the most specific and difficult-to-monitor factors because, thanks to ownership and/or other safeguards and incentives, these factors can cancel out a great deal of agency costs. However, we have just seen that ownership biases the technology, making owners more specific and difficult to monitor. Thus, it biases technology in such a way as to make ownership self-sustaining. When this bias is sufficiently strong, a plurality of ownership systems can be self-sustaining. In this case, we have multiple 'organisational equilibria' and there is no guarantee that the most efficient system will prevail.

Under different capitalist systems, political struggles and social compromises can shape the rights of agents in particular ways. Thus, the self-reinforcing complementarity of these rights with particular technologies may explain the multiplicity of capitalist models that may emerge as a result of specific political conditions. We shall now consider how these self-reinforcing complementarities can be used in a stylised way to represent how some models of capitalism worked in the post-World War II period up to the 1980s.[3]

The USA can be roughly approximated by a 'Taylorist–Fordist' model based on the self-reinforcement between a particular set of rights (P_A) and technologies (T_A) where P_A and T_A can be characterised as follows:

- P_A, a distribution of rights that gives shareholders and management strong liberties, including the liberty to fire workers easily. Workers are vulnerable to this liberty and have no right to a well-defined occupation or to a generic job within a certain firm. The firm can be traded as a commodity and a new management, taking over the organisation, can easily break the implicit contracts with the workers.

[1] Radical contributions to the literature start with Braverman (1974) and Marglin (1974) and Rowthorn (1974) and include Bowles (1985), Bowles and Gintis (1986), Edwards (1979), Pagano (1985, 1991) and Putterman (1982). They emphasise that property rights and power relations shape technology and the organisation of labour. On the concept and role of power, see also Bowles and Gintis (1999), Bowles, Franzini and Pagano (1999) and Pagano (1999).

[2] The New Institutionalist School stems from Coase (1937, 1960) and the very important includes the contributions of Alchiam and Demsetz (1972), Jensen and Meckling (1976) and Williamson (1985). They see the firm and its property-rights structure as an efficient alternative to the market mechanism and to the problems arising from contractual incompleteness. The new property rights school (Grossman and Hart, 1986; Hart, 1995; Hart and Moore, 1990) shares this 'second best' efficiency explanation of economic institutions.

[3] We postpone the analysis of the more recent changes to the last section.

- T_A, the centralisation of knowledge in the hands of management and on top-down coordination and innovations; workers at the bottom of the hierarchy perform very detailed jobs and execute tasks in accordance with very narrow and rigid instructions.

While, for a New Institutional economist, T_A would determine P_A efficiently, radical economists would support the hypothesis that P_A was determined by the political conditions prevailing in the USA and that these had a great influence on the choice of T_A. The weak rights of workers biased the technology towards solutions such as the assembly line where workers perform extremely detailed jobs that are easy to monitor and require no specific skills. In turn, this 'biased technology' (T_A) made it efficient to have an organisation of production where only top management and shareholders had strong rights (P_A) in the organisation. In these conditions, a self-reinforcing organisational equilibrium (P_A,T_A) is likely to have emerged.

The Japanese and the German models of capitalism departed from the US model in two different ways. Both models relied on some decentralisation of knowledge and bottom-up innovation. However, the Japanese model was based on organisational rights, while the German model was characterised by the existence of occupational rights.[1] As a consequence, the skills and the technology that were developed were biased in two different directions.

The Japanese model was also based on two complementary rights and technologies. These had emerged as a consequence of the political shocks undergone by Japan after the end of World War II. At that time, the double crack-down on the traditional *zaibatsu* capitalist families and then on the centralised unions produced the *keiretsu* system. In this system, the workers had quite strong rights but only within the organisation—a circumstance that favoured the development of organisational skills and backfired on organisational rights, reinforcing their institutional stability. More precisely, the post-war Japanese model has been based on:

- P_J, a distribution of rights limiting some shareholder and management liberties, including the liberty to fire workers who hold the right to a job of an unspecified nature in the organisation. Main banking and cross-shareholding isolate the firm from the stock exchange and protect the workers' implicit contracts from the risk of takeover.
- T_J, the decentralisation of a great deal of knowledge and some bottom-up co-ordination and innovation; workers have to rotate between different jobs and acquire remarkable firm-specific skills as well as an overall vision of the way in which production could be improved.

Again, a New Institutionalist would maintain that T_J determined P_J efficiently. However, one can easily maintain that the Japanese model of corporate governance derived from strong political shocks that made the workers' rights within the *keiretsu* (P_J) possible. These rights are likely later to have induced a complementary technology (T_J) and, eventually, a self-sustaining organisational equilibrium (P_J,T_J).[2]

[1] In Japan workers had organisational rights, mainly in terms of job tenure and work organisation, within a certain company. By contrast in Germany the workers had (also) occupational rights on a certain activity, which should satisfy the same standards and the same job definition across all the companies. Japan approximated a 'company workers' variety of capitalism' while Germany was close to a 'unionised variety of capitalism' as defined in Pagano (1991).

[2] Barca *et al.* (1999) consider the role of the political shocks due to World War II and the subsequent occupation by the American army who reformed radically (and, sometimes, with unintended consequences) the Japanese system.

Once the Japanese system was established, both directions of causation had an important role. On the one hand, in this equilibrium, workers accumulated tacit information (which made monitoring by outsiders difficult) and specific skills because some of their agency costs (those usually associated with the employment of difficult-to-monitor and specific resources) were cancelled out by their organisational rights and by their identification with the organisation. On the other hand, these 'technological' characteristics made it efficient to have the Japanese model of workers' corporate rights. Numerous bottom-up incremental innovations were one of the most appealing aspects of this model, which in the 1980s was considered the main challenge to US economic domination.

The German model is also rooted in the political circumstances that characterised the history of that country. In this case, centralised employers' and employees' associations have for a long time run the economy together with a centralised banking system. A consensus on the nature of the 'social market' characterised both the Christian Democratic and the Social Democratic Party and it allowed the (West) German state to run the economy in cooperation with these two centralised associations.[1] The existence of these political actors allowed economy-wide rights for the workers. While Japanese workers were safeguarded against the specificity of their skills by rights at firm level, German workers were (also) directly safeguarded against the firm-specificity of their skills.[2] Job specifications were set and standardised by the employers' associations and the unions, with the help of the state, which also organised an excellent system of vocational education consistent with the agreed job requirements. These types of arrangement allowed the development of skills that were 'occupational specific' but, at the same time, 'general purpose' in the sense that they could be applied in a large number of firms. Again, a self-reinforcing interaction characterised the relation between technology and rights. A system of occupational rights (P_G) made it convenient to develop a technology (T_G) based on general-purpose skills. At the same time, the very existence of this technology made it efficient to develop the institutions that provided the rights and safeguards (P_G) for the numerous general-purpose skills employed under this technology (T_G). An organisational equilibrium (P_G,T_G) emerged. In this equilibrium (P_G) and (T_G) have the following characteristics:

- P_G, a distribution of rights limiting some shareholder and management freedoms including the freedom to organise some aspects of the division of labour and of job specification. Unions and employers' associations acquire the right to interfere in the organisation of production of each single firm. Codetermination with union representatives holds for firms with more than 200 employees. Banks have an important role in

[1] Fioretos (2001) points out how the consensus on the nature of the German economy has shaped the common approach to the European Community of both the two major German parties and has distinguished them from the similar common approach of the Labour and Conservative parties in Britain. This continuity and these national differences can only be explained by looking at the different characteristics of these two economies. For their analysis refer also to Wood (2001).

[2] Estevez-Abe *et al.* (2001) observe that Germany is characterised by both high unemployment protection and by high employment protection. Thus, there is some inducement to acquire both industry-specific and firm-specific skills. They observe (p. 152) that 'high unemployment protection is also important in so far as it allows workers to turn down job offers outside their previous industry or occupation. If compelled to a accept a job offer outside the worker's core competencies, either because of low benefits or a strict requirement to accept almost any job offer, this undermines the worker incentives to invest in industry-specific skills'. Thus, according to them, it lies somewhere in between a model of 'company workers' capitalism' characterised by a system of 'organisational rights' and a model of 'unionised capitalism' characterised by occupational rights. The characteristics of these 'ideal-types' of capitalism are outlined in Pagano (1991).

corporate governance through credit, direct acquisition of shares and proxy voting. They make it very difficult for hostile takeovers, while their presence on many boards of directors also favours coordination between firms.

- T_G, the decentralisation of a great deal of knowledge and some bottom-up coordination are also characteristic of the German system; jobs are standardised across firms in such a way that when workers change organisation they can find equivalent occupational slots in other firms since these share a similar division of labour.

If we accept this schematic representation of the three major capitalist economies (at least as they could be represented in the post-World War II war period up to the 1980s), we may ask whether globalisation would necessarily mean a convergence towards a single model of capitalism.

The arguments that we have developed in this section may, indeed, have the opposite implication. Recall that the different models of capitalism rely on different rights that change the agency costs of using factors and induce self-reinforcing technologies. If the different rights existing in the three major capitalist economies implied different factor prices, they also implied that each one of them had a different institutional comparative advantage. Thus, following the predictions of standard economic theory, they should have specialised in those sectors where they held a comparative advantage and should have increased their overall institutional specificity.[1]

Thus, globalisation is likely to have two different effects on the 'biodiversity' of capitalism:

a. It increases inter-country institutional diversity by favouring the specialisation of each country in those sectors where it has a comparative institutional advantage.
b. It decreases intra-country institutional diversity because each country tends to abandon those sectors that are not favoured by its institutions.

Thus, as a result of globalisation, the variety of models of capitalism should not tend to decrease. For instance, the USA should make its institutions even more specialised in goods and processes requiring top-down coordination and innovation, while Germany and Japan should have their institutions specialise in different goods and processes requiring bottom-up coordination and innovation. All models could coexist and even increase their institutional differences, exploiting the well-known principles of comparative advantage.[2] Thus, in principle, egalitarian distributions of intellectual assets, including the access to acquisition the assets embodied in workers, are not necessarily in conflict with globalisation in so far as they allow a comparative advantage that can be exploited in the world economy. Indeed, a consequence of the analysis that has been proposed in this section is that globalisation could push some nations towards a more egalitarian distribution of intellectual assets and others towards a pattern of increasing inequality.

[1] Vespasiani (2002) uses the concept of organisational equilibria to define comparative institutional advantage. Similarly Pagano (2001A) considers the different system of property rights and their agency costs as an important source of comparative advantage that may lead to an increase in the biodiversity of capitalism. A full-blown analysis of comparative institutional advantage (and of its importance in solving the paradoxes of the theory of international trade) is carried out by Hall and Soskice (2001). A stimulating survey of the relevant literature is offered by Belloc (2003).

[2] For instance, this principle is consistent with the idea that Italy would exit from sectors requiring large firms and become entirely a small-firms economy. The present crisis of the corporate governance of Italian large firms is also consistent with the same principle. On this issue see Pagano and Trento (2003).

4. The privatisation of intellectual capital: Taylorism's global revenge?

The argument of the preceding section rests on the idea that globalisation relies only on mechanisms of cultural and economic integration and does not also involve a tendency to establish a unique system of global rights in some spheres of the economy. If this latter tendency prevailed, the line of reasoning of the preceding section would produce the opposite result. In such a case, countries could not specialise according to their system of rights and according to their institutional comparative advantage. They could only develop along the lines of the unique organisational equilibrium imposed by the world economy. In this section, we shall advance the hypothesis that the tendency to establish a dominant system of rights has become relatively more marked in recent years. We shall argue that this tendency explains the difficulties of some advanced capitalist economies in coping with American competition as well as the increasing inability of some developing countries to catch up with the countries that are close to the frontier of technological progress.

In the 1980s, the USA was eager to imitate some characteristics of Japanese and German capitalism. In a surprisingly short period, by the end of the 1990s, the situation was dramatically reversed. German and Japanese political leaders were busy reforming their economies, and imitation of some of the institutional features of the US economy became a popular and appealing policy. Indeed, the pressure in this opposite direction of change has been strong enough to challenge the idea that globalisation can preserve the institutional diversity of the advanced capitalist countries.

One of the relevant ingredients of this dramatic change is likely to be related to the fact that the process of globalisation involved not only cultural and economic integration but also the establishment of a global system of intellectual property rights.

In the 1980s, the USA was suffering from the relations that existed between the different models of capitalism. Because of their top-down character, American innovations could be easily imitated and improved on by the bottom-up innovation systems of Germany and Japan. While the USA (which was also closer to the so-called 'frontier of knowledge') could make path-breaking innovations, it could make relatively little money from them. Major innovations were often publicly known and were not protected by any international system of intellectual property rights. By contrast, marginal continuous bottom-up improvements could not easily be imitated thanks to the 'tacit' nature of the skill of workers and technicians, and were the crucial factor in making high profits. The closer the improvements were to production, the more difficult was their imitation. Continuous feedback from the problems of production and continuous attention to all the possible improvements were the best way to make money. These circumstances seemed to imply a permanent superiority of the bottom-up German and Japanese systems over the top-down US system.

This superiority was, however, grounded on a double assumption: of the difficult appropriability of intellectual assets, and of the easy appropriability of physical assets. Indeed, traditional theory, in claiming that the catch-up of late industrialisers was possible and even likely, was also implicitly based on the same assumptions: countries at the technological frontier put effort into producing knowledge that was then made freely available to other countries. The latter could, then, conveniently specialise in imitation and marginal improvements. However, the introduction and strong enforcement of intellectual property rights could have reversed this situation.

Intellectual assets are characterised by the fact that many agents can use them simultaneously. This generates the well-known trade-off between static and dynamic

efficiency (where static efficiency implies that intellectual assets should be made available to all agents, whereas dynamic efficiency implies that the rewards should be given to the producers of these assets). Non-rivalry in consumption makes the definition and enforcement of private property rights over intellectual assets much more difficult than that over physical assets. The enforcement of private property right over a physical asset can be easily done at local level. So long as the asset is not removed from some limited physical location, one can be sure that non-owners are not unlawfully using the asset elsewhere. By contrast, the enforcement of intellectual property rights cannot be done at local level. Monitoring an intellectual asset in a certain location has no consequence for the unlawful use of the same asset in other locations. Unlike private property rights over physical assets, private property rights over intellectual assets requires global enforcement and, in some respects, a global legal system. Globalisation may also mean the political process that constructs such a global legal system.

Strong enforcement of intellectual property rights was not possible in the 1980s. The Soviet empire was not willing to respect this type of 'capitalist right' and the gap created by the Soviet Union made enforcement in other capitalist countries rather difficult. Moreover, the confrontation with the Soviet Union implied that the Americans could not be too tough with their political allies and police the enforcement of intellectual property rights (except when they were related to the production of weapons). The situation changed dramatically in the 1990s. The end of the Soviet empire allowed the enforcement of intellectual property rights. An intellectual property right could now really become the global right to exclude all others from the use of a piece of knowledge.

Globalisation as a global definition and enforcement of (mainly intellectual) property rights may have very striking consequences for the nature of capitalism and its institutional diversity.

The definition and enforcement of global intellectual property rights implies a reversal of the idea that the catch-up countries can free-ride on the efforts of countries at the technological frontier.[1] On the contrary, the latter can impose a high cost on the former by charging high prices for the use of new knowledge.

Here, we meet again a paradoxical aspect of intellectual property rights: the same necessity for global enforcement that makes this sort of property right so difficult to enforce also makes exclusion from its benefits much more damaging than exclusion from the benefits of physical assets.

In the case of physical assets, even in a situation of incomplete contracts, non-owners may be willing to make the human capital investments necessary for making better use of or improve the characteristics of these assets. Machines are unlikely to be so specific as to be unique. If someone cannot use their human capital with the present machine, similar machines are likely to be found elsewhere in the economy and their skills are not usually wasted. In any case, unless the physical ownership of the machine has been bundled with the intellectual property of its design, some other producer can eventually build it.

[1] As in the title of Chang's (2002) book, advanced countries can, in this way, kick away the ladder used by catching-up countries. Intellectual property rights can be seen as global tariffs, which protect goods well beyond the boundaries of the producing country. In this respect it is rather ironic that intellectual property rights have been included in the World Trade Organisation regulations as a condition to liberalise trade. Whereas some goods, mainly produced by developing countries, must respect the rules of international competition, intellectual assets enjoy strong global tariffs. It is as if the export of some crops was not only restricted, but the liberty of production itself was severely limited in other countries. This argument is developed in Pagano (2007A).

The same is not true when the most important inputs for production are intellectual assets. In this case, non-owners face the problem that the human capital may be highly specific to an intellectual asset, because intellectual property rights involve a global right to exclude others from its benefits, and similar productive assets cannot be made available in the global economy without violating the rights of its owner.

An application to intellectual assets of the new property rights approach should imply that ownership of intellectual assets should go to the agents that are best able to make use of them.[1] Even if this second best is very far from first best (because so many non-rival users are excluded from the benefits of the intellectual asset), it is still very unlikely to be achieved by actual markets. There, because of transaction costs of all sorts, the opposite often happens: only the agents who own the intellectual assets have sufficient safeguards to develop the ability to improve them. Only the individuals or the firms who already own the preceding version of a certain piece of software (that is, the most important input for producing the next version) will have adequate incentives and safeguards to produce improvements of the software. Thus, countries, owning a high initial stock of property rights, are likely to develop more intellectual abilities and to acquire even more intellectual property in a self-reinforcing virtuous circle.

Even large multinationals owning a fair amount of intellectual property (and a corresponding amount of bargaining power) are sometimes trapped in 'anti-commons' tragedies owing to the fact that the dispersion of intellectual property rights makes it impossible to have results that could otherwise be easily obtained.[2] If these disincentives exist for big firms, which are already endowed with large amounts of intellectual property, they are very often insurmountable obstacles for most developing countries and have proved to be a serious disadvantage even for countries such as Germany and Japan.[3]

An initial unequal distribution of intellectual property generates a self-feeding process and it is much more likely to produce increasing inequality than an initial unequal distribution of physical assets.[4] The new accumulation mechanisms of 'intellectual capitalism' favour, in the most dramatic way, those countries that are initially rich in privately-owned intellectual assets. In so far as globalisation has meant the application and enforcement of global intellectual property rights, it has favoured the USA, which had the

[1] For a more detailed account, together with an alternative view, of the relationship between intellectual property rights and the new property rights see Pagano and Rossi (2004).

[2] See Heller and Eisenberg (1998). For an introduction to the problems concerning IPR, see Gallini (2002).

[3] This explanation does not claim to be exclusive and, often, wrong macroeconomic policies have been an even more important cause. However, when one refers to the form of capitalism that characterised these countries, one should explain why the same models of crony capitalism that were crippled by moral hazard problems in the 1990s did so well in the preceding decade; this important criticism of the neo-liberal approach is forcefully made, with particular reference to South-Korea, by Chang (2000). Other aspects of globalisation have contributed to the increased inequality between countries and within countries—a tendency that, as Wade (2004) has pointed out, has not been offset by the rapid growth of China and India. The growth of these two countries as well as their increasing internal inequality is consistent with the new regime of international property rights. On the one hand the decentralisation of production to these countries is very convenient, because of the abundance of cheap labour, and it is pushed by the new model of 'global Taylorism' favoured by stronger intellectual property rights. On the other hand, because of their political and economic power, China and India can, in some sectors, ignore intellectual property rights more easily than other countries when this fits their interests.

[4] Joe Stiglitz (2002, p. 245) observes, 'after all, knowledge is the most important input into research, and stronger intellectual property rights can increase the price of this input'. Thus, in spite of the well-known positive effects of intellectual property rights on the creation of new knowledge, because of strong intellectual property rights 'the rate of progress and innovation might actually be impeded'. One can add the observation that in a world of incomplete contracts this negative effect may be unequally distributed: it may be very mild for owners of substantial pieces of knowledge and very strong for non-owners.

largest amount of 'reified' intellectual capital and, in particular, much upstream science-based intellectual capital[1] (which is very difficult to commoditise without a global system of intellectual property). In our view, this helps to explain the reversal of relative economic performances from the 1980s to the 1990s and indicates that the present world order may favour this trend.[2]

Moreover, there is another sense in which the introduction of global intellectual property rights has meant a revenge of the American model. Until recently, one could have easily maintained that a system of top-down coordination and innovation was bound to be beaten by a bottom-up system. The first issued precise instructions and routines that could be easily imitated while the second was based on marginal bottom-up improvements that often relied on tacit knowledge and uncodified routines that made imitation difficult. The privatisation of intellectual property makes it possible to protect knowledge centralised in an American-type organisation and makes it difficult to exploit the advantages of marginal bottom-up improvements. The latter will often be limited (or even forbidden) when agents, using the knowledge they have, need to produce under a precisely detailed licence, and may have little impact on the production of new knowledge.

In other words, intellectual property rights allow for separation between conception and execution. This separation has always been one of the most important principles of Taylorism (Braverman, 1974) and, indeed, in the 1980s it seemed to be also its most serious limitation. Intellectual property rights make conception the source of a form of non-human capital, and often the source of the most important and valuable non-human assets. Execution is then driven by privatised intellectual capital in a way that even Taylor (with his rigid idea of 'task' as the basis of scientific management) would have found difficult to predict. Thanks to the introduction of global intellectual property rights, the top-down American system of Tayloristic coordination and innovation was not only able defend itself against the challenge of the bottom-up systems devised by other capitalist countries; it might also prove to be the best system for the rapid 'original accumulation' of commoditised intellectual capital. This type of capital has quickly become (think of the growth of Microsoft) the most dynamic element in capitalist accumulation. Even if many clouds (think of Linux) upset this picture, no strong wind has yet shaken the growing domination of global commoditised intellectual capital. One cannot exclude the possibility that a new form of 'global Taylorism' may prevail as the unique form of organisational equilibrium of the future world economy.

5. Conclusion: egalitarian policies in the global knowledge-intensive economy

Bowles (2004) suggests that human history may be divided into three fundamental stages: hunting; agriculture and industry; and knowledge-based production. According to him, only the middle period was well suited to private property rights. The first and the last periods share the fact that the crucial factors (the hunted giraffes and ideas) would not easily allow a standard definition and enforcement of private property rights. Moreover, in both cases, the yields were sometimes so big, relative to the size of the community, that it

[1] From the analysis of patents, the USA can be shown to occupy a more upstream position than Germany (See Estevez-Abe *et al.*, 2001, pp. 174–5).

[2] However, this prediction is in terms of models of capitalism and not in terms of specific countries, which can change their own institutional arrangements. For instance, major institutional changes have taken place in Germany and Japan.

was inefficient to exclude others from their consumption.[1] Egalitarian policies may be favoured by the very nature of the modern knowledge-intensive economy for reasons analogous to those that prevailed in the early hunting stage. The knowledge-intensive economy could, in this way, reconcile humans with the fundamental aspects of their nature, which were shaped in their disproportionately long hunting stage.

We have seen that the difficulty of 'owning' ideas is indeed related to the fact that the catch is so big that everyone in the world could share its fruits. Ideas are bigger than the biggest giraffe: unlike the case of giraffes, one individual consuming an idea does not decrease, by even the smallest amount, the consumption of another individual. However, the enormous size of 'intellectual venison' also implies that the exclusion entailed by private intellectual property is much more dramatic and pervasive than the exclusion associated with the private property of physical capital or land.

Unfortunately, ideas can be turned from free giraffes into domesticated cows owned by 'gigantic intellectual farms'. Thanks to the ownership of a large number of ideas, these 'gigantic intellectual farms' can produce an increasing number of 'domesticated ideas' and at the same prevent anyone else in the world from breeding 'similar animals'.[2] If this domestication of ideas succeeds, the modern globalised world may end up showing some paradoxical similarities with the agrarian societies that were replaced by the national capitalist economies: a vertical and horizontal cultural diversity, a lack of social security and solidarity and a new cosmopolitan aristocracy (whose rents derive from financial investments and intellectual property).

Egalitarian policies should challenge the inequalities associated with the privatisation of knowledge and with differential access to global culture. Some of these policies should be carried out at world level and may entail strong conflicts among countries rich in intellectual assets and countries that have very little access to these assets. For good reason, the international system of intellectual property rights is increasingly challenged by people worried by the rise of world inequality.

While globalisation weakens rights in the intellectual capital embodied in individuals (which characterised the 'bottom-up' learning processes of the Japanese and German models), it strengthens the rights in disembodied intellectual capital and increases inequality in two ways. On the one hand, disembodied intellectual capital can be much more easily concentrated in the hands of a few individuals than can capital that is embodied

[1] 'The information-intensive economy of the future may more closely resemble the economy of the mobile foraging band in human prehistory rather than the economy of grain and steel that displaced it. Pursuing good ideas with practical applications is a costly and uncertain project, much like hunting a large game. Success is rare, but its fruits are immensely valuable. The private appropriation of the prize is both difficult to accomplish and socially wasteful' (Bowles, 2004, p. 501). Other authors have also considered the contradictions and the waste entailed by the extension of property rights to knowledge. See, for instance, Vandana Shiva (2001), Chang (2002) and Pagano and Rossi (2004).

[2] The new golden rush to acquire pieces of intellectual private property has now moved from the exploitation of traditional mines, such as those yielding software patents and gene patents, to that of business methods. The dangers arising from the privatisation of the products of this new 'intellectual pit' are very evident. A glimpse of the world of business-method is offered by Stix (2003) who considers the case of U.S. Patent 6,329,919 covering (cited in Stix p. 20) 'an apparatus, system and method for providing reservations for restroom use'. In 2001 the Patent and Trademark Office 'deemed IBM's electronic toilet queue worthy a patent'. However, after that Patent Commissioner James Rogan order a reexamination last year, IBM relieved itself of the patent. Stix (p. 20) reports that the English *Guardian* observed that perhaps the 'The Company known as Big Blue does not want to be known as Big Loo'. According to him, a similar review 'might be counseled elsewhere for other business-methods patents, such as those for cutting hair, conducting an auction or privatising government'.

in individuals' personal skills. On the other hand, the privatisation of intellectual capital replaces what used to be a global public good available to all individuals, with a private good available only to a few.

However, there are many other things that, in the context of a knowledge-intensive globalised economy, single countries can do to increase equality among their citizens.

We have seen that unequal access of individuals to global intellectual standards is one of the reasons for which, unlike nationalism, globalism could reproduce (somewhat like the old agrarian societies) a divide between a cosmopolitan aristocracy and a local provincial underclass. Nation states can favour equality and development by giving access to global intellectual standards to all their citizens. The attachment to and the investment in national culture should not be an obstacle to the integration of the population in the global economy and in the emergent global civil society.

Moreover, while the new 'cosmopolitan aristocracy' may be willing to replace redistribution and other form of social protection with the 'liquidity' of their skills (which can act as an alternative form of insurance), the state should try to decrease inequality by providing social protection to the 'less liquid' individuals who can be more easily hit by the unpredictable movements of global markets. In this respect, national integration into the global economy should be based on the 'net benefits' arising from comparative advantages. These net benefits should include the risks of specialisation in the different sectors, and should enable the state to provide forms of social protection. The divergence between the private and social costs of specialisation provides an important justification for an active state policy of managing and sometimes limiting specialisation when it involves the downsizing of core competences of the economy. The state should encourage specialisation in sectors where core competences are fungible and may be easily used in other sectors in cases of crisis. Alternatively, international integration should require that global institutions provide the mutual insurance among different sectors that has been typically supplied by nation states and would, therefore, involve some federalist political integration of these states. In other words, while unfettered economic integration would require that an international welfare state came into existence, a more realistic 'second best alternative' could be provided by some combination of limited globalisation, social protection supplied by national welfare states, and some forms of international political cooperation enhancing the feasibility of the national systems of social protection.

Finally, nation states should consider that, in the globalised economy, the redistribution of assets (and, in particular, of intellectual assets) could change the comparative institutional advantage of their economy. If national governments became aware of the complementarity between the redistribution of assets and the nature of the comparative institutional advantage of their country, they might try to design policies to enhance both equality and efficiency. In the knowledge-based economy, a more widespread access of many individuals to intellectual assets might in many circumstances increase both productivity and equality, and allow a more favourable balance between the gains and risks of international specialisation.

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