ONZIEME RENCONTRE INTERNATIONALE DU GERPISA
ELEVENTH GERPISA INTERNATIONAL COLLOQUIUM

Les acteurs de l'entreprise à la recherche de nouveaux compromis ?
Construire le schéma d'analyse du GERPISA

Company Actors on the Look Out for New Compromises
Developing GERPISA's New Analytical Schema

11-13 Juin 2003 (Ministère de la Recherche, Paris, France)

THE EUROPEAN SOCIO-ECONOMIC MODELS OF A KNOWLEDGE-BASED SOCIETY: THE OBJECTIVES OF THE ESEMK PROJECT

Bruno AMABLE (CEPREMAP)
Yannick LUNG (GRES-E3i, Bordeaux and GERPISA)

The main purpose of the ESEMK project[1] is to discuss the possible emergence of a specific European socio-economic model of development in the context of the transition towards a knowledge-based society. The current situation in the European Union is characterised by the co-existence of diverse *socio-economic models* (Amable [2003]), i.e. specific institutional architectures at the macro-level, as well as diverse *productive models* (Boyer and Freyssenet [2002]), i.e. modes of organisation at the company level, even within a given sector. One may appreciate this diversity both at the macro and the micro/meso level from two points of view. It could be seen as a factor of competitiveness of Europe, following a broad evolutionary argument according to which diversity would preserve the ability to compete in a changing environment. It could alternatively be regarded as the sign of a lack of adaptation of European countries to the dominant trends currently affecting the most advanced economies.

The most important changes taking place in the World economy are customarily related to the emergence of *a knowledge-based society* and *globalisation*. The former stresses the fundamental role that knowledge accumulation and innovation play in the definition of competitiveness (Guellec [2002], Amable et al. [2002]); it is related but not identical to the increasing role that some 'weightless' activities (related to Information and Communication Technologies, ICT, and biotechnologies) play in modern developed economies. Globalisation expresses the strong pressures that the strife for competitiveness puts on national economies. A common thesis is then that the development of the knowledge-based society would require a specific set of institutions, which hints at the possible existence of *one* socio-economic model of development associated to the current trend of the World economy, to which would also possibly correspond a unique productive model at the company-level, in terms of production organisation, mode of corporate governance and type of employment relationship. The arguments could be rapidly summarised as follows: we are witnessing an intensification

[1] Specific Target REsearch Project submitted to the 6th EU Framework Programme, Priority 7.

of international economic relationships thanks to the deregulation of international trade, which increases competition on the product markets; and due to financial liberalisation, which facilitates investment flows and tends to generalise the principles of market-based finance worldwide. This latter trend exerts pressure on the pattern of organisation of corporations and management style (lean management and a specific pattern of corporate governance). ICT are supposed to drastically reduce market frictions and increase pressures on firms for both price- and innovation–competitiveness (Cairncross [2001]). Increased competitive pressure, changing skills requirements and capital mobility lead to changes in labour's bargaining position and deeply affect the employment relationship. Neither job security nor a generous social protection could be afforded in the 'new times'.

In fact, if the dominant trend is forced upon countries across the world, any delay in adapting to these new conditions leads, in this view, to a handicap in competitiveness, and the same would apply to firms who would fail to adapt their organisation to the dominant productive model. Indeed, the recent economic debates have focused on the comparison between the United States and Europe. Whereas the institutional environment of the USA is usually deemed adequate for the knowledge-based society, as witnessed by the superior macroeconomic performance of this country since the 1990s, the institutions of European countries and the mode of organisation of European firms are sometimes held to be too rigid and not fit for the new era (OECD [2000]). The result is thus that European countries are characterised by significant lags with respect to many dimensions of the knowledge-based society: diffusion and production of new technologies, innovativeness… How could the current situation be reconciled with the Lisbon Summit objective that Europe should become the most competitive knowledge-based economy by 2010? Does that mean that in order to stay competitive, the EU should relinquish any ambition to develop a specific model and should adopt the institutions of the United States in order to achieve comparable performances?

Our project will analyse the diversity of models within Europe and assess the chances for the emergence of a European socio-economic model of the knowledge-based society within which a diversity of competitive productive models could be preserved in a context of globalisation. We will analyse the causes of institutional diversity among developed countries and the models' trajectories. Using both theory and a historical and comparative approach to characterise these models will help us to go much further than existing studies on various forms of capitalism have done, among them studies that have either apprehended national cases as specific development models, or others that have offered a dichotomous vision of diversity (e.g. Liberal Market Economies, LME, vs. Coordinated Market Economies, CME; cf. Hall et Soskice [2001]). Another goal will be to apprehend interactions between firms' organisational dynamics and socio-economic models of development. The project will be an opportunity to flesh out an incipient analytical matrix by delving into some of its dimensions at a deeper level, looking in particular at how different levels of analysis (micro/meso/macro) can be interconnected. The project also constitutes an attempt to produce new knowledge about the organisational changes that firms have been going through in Europe.

Firms' organisational dynamics and the diffusion of new information technologies are sufficiently significant events to have deeply modified the way society and political demands are structured. To analyse the impact these transformations have had on socio-economic models, we need to develop a *theory of institutional change*, something that social sciences currently lack. Current institutional economics is more concerned with the economic impact of institutions than with analysing their emergence, stability or change. Developing a theory of institutional change is one of the present project's main goals. To achieve this, we will have to revisit economic science's pervasive vision of the relations between the political

sphere and economic efficiency. In the most current vision, transformations in socio-economic models are driven by economic efficiency, and the role of politics is either passive, accommodating changes devised in the economic sphere, or active, but by impeding these changes in the defence of some vested interests. The problem regarding institutional change (i.e. models' transformations) is thus conceived as overcoming the political defences. Yet, reality appears to be much more complex, if only because many more possibilities of development are open to each model than the preservation of the existing state. In our opinion, the transformation of fundamental socio-political compromises is driving the dynamics of models, while the macroeconomic performance can either make it easier or harder for such models to be renewed or changed.

Our approach will thus be able to highlight the double interaction at work in the dynamics of models of development: between the macro (socio-economic models of development) and company levels (productive models), on one hand; and between economic and political dynamics, on the other, since institutions are the outcome of a socio-political process.

The project fits in with the view that the European research area should be reinforced by encouraging collective thinking about the European socio-economic model; by improving the linkage of its various levels of analysis; and by consolidating those European networks that have already been built up over the course of previous framework-programmes. To meet these objectives, the project will be offering elements that can be studied as parts of an analytical matrix to be used by political decision-makers engaged in the reform of European institutions; and by social actors concerned by these issues as well as firms' organisational changes. Such elements should help people to move beyond strictly economic approaches that construe the political domain at best as an obstacle to the implementation of reforms which are to be desired for reasons of efficiency. As opposed to this conception, our analytical matrix should enable an identification of those areas and countries that might have a part to play in the development of viable European-level compromises.

THE DEBATES ON THE DIVERSITY OF SOCIO-ECONOMIC AND PRODUCTIVE MODELS

The idea that there exists a one-best-way for the institutional design of modern economies and for the organisation of the firm is a classical subject of controversy. A first approach would suggest that the 'best' institutions are those that are closer to the ideal frictionless market. Hence, institutions that favour the free functioning of markets and introduce market mechanisms within the firm, and limit the impact of distortions should bring the best possible economic results. The economic policy consequence is therefore clear; one should abolish barriers to flexibility and distortions to competition. Another position is, at least since Shonfield [1965], that it is possible to achieve good economic performance with institutions that depart from the strict market logic. Furthermore, the coherence of a socio-economic model is based on the complementarity between institutions (Aoki [1994] and [2001], Amable [2000]), which implies that institutions should not be considered in isolation from one another. Hence, by modifying institutions locally, one runs the risk of weakening the coherence of the institutional structure as a whole - and of worsening economic performance instead of improving it.

Many studies have shown that globalisation does not abolish the variety of capitalism (e.g. Crouch and Streeck [1996]). This variety is usually analysed in terms of national models, i.e. each country represents a specific type of capitalism. International comparisons have indeed emphasised the differences between national institutions and productive models and

one casually speaks of *Modell Deutschland (or Deutschland A.G.)* or *'le modèle français'*. But this focus on nations as specific models may run into two different types of problems. First, homogeneity within nations may be questioned. One may object that business practices, patterns of firms' organisation and even sometimes the regulatory environment differ across regions or industries. One may for instance consider that there is not one Italian model but three, in which case the regional level may be more relevant for comparative analysis. The trouble with this approach is that it has virtually no limits, and it runs the risk of losing the macro/societal perspective. Second, the consideration of national case studies does not usually define a common framework for analysis. Focusing on national cases leads to the adoption of a nation-specific set of explanations and theories which make international comparisons difficult and generalisations nearly impossible.

An alternative is to define a common theoretical framework for comparative analysis and apply it to the study of modern economies. In this respect, the debates on the diversity of the forms of capitalism (*socio-economic models*) are tightly associated to those relative to the model of firms (*productive models*); Zarifian [1993] for instance proposed the C-firm (European Cooperative firm) as an alternative to the opposition between the dominant firm's models introduced by Masahiko Aoki [1988]: the A-firm (American; strongly vertically organised) and the J-firm (Japanese; decentralised structure of information). This binary opposition echoes the distinction between two forms of capitalism proposed by Hall and Soskice [2001]: the Liberal Market Economies (LME) and the Coordinated Market Economies (CME). Both types of capitalism can be characterised by specific institutional arrangements at the macro level, which define opportunities and incentives at the micro/meso level and give rise to differentiated firm models. Institutions affecting the employment relationship, the financial system or the education and training system are particularly relevant in this respect. More generally, the emergence and the impact of institutions can be analysed both at the micro/meso and the macro-levels. The dichotomy of Hall and Soskice is based on one fundamental dimension: coordination. In an LME, coordination is based on market mechanisms, favouring investment in transferable assets. In a CME, it is mainly achieved through non-market means –the so-called strategic coordination–, favouring investment in specific assets, long-term relationships and so on.

Any dichotomous approach has pros and cons. It simplifies both empirical and theoretical analysis, by making differences at the institutional and organisational levels sharper, giving rise to testable hypotheses. It is nevertheless fundamentally a one-dimensional analysis,[2] which reduces diversity and usually fails to account properly for socio-economic or productive models whose characteristics are poorly represented on the one dimension that is at the basis of the dichotomy.[3] Taking more dimensions into account could lead to the consideration of more diversity than a distinction between two types of capitalism. Some other contributions base their analysis of diversity on one institutional area only: social protection (Esping-Andersen [1990]), pattern of State intervention (Schmidt [2002])… These approaches run the risk of missing important complementarities between institutions not taken into account in their analysis.

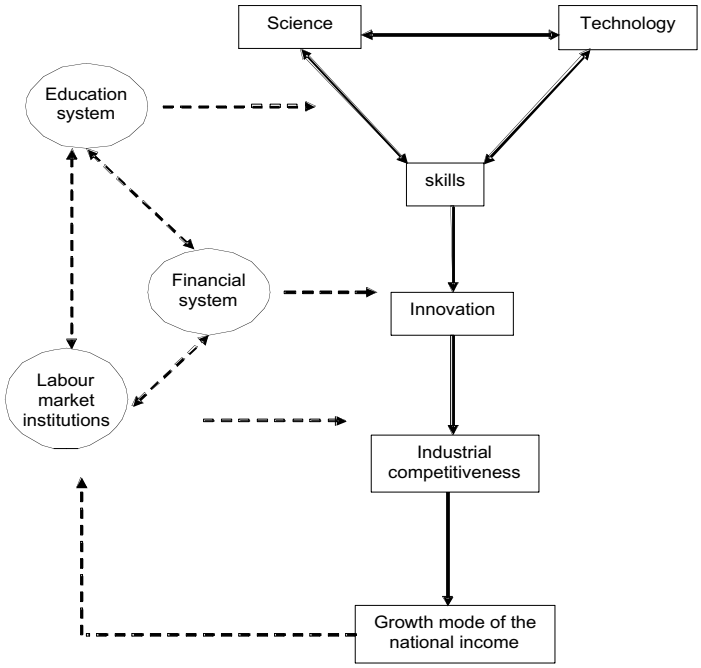
A theoretical analysis and an exercise in international comparisons in Amable et al. [1997] has led to distinguish several types of socio-economic models, denoted Social Systems of Innovation and Production (SSIP) characterised by different institutions and interactions among these institutions: (i*) the market-based SSIP* to which the United States, Great Britain,

[2] Coordination is the dimension considered by Hall and Soskice [2001]. Opposition along this dimension can be found in every institutional area and form of organisation, which expresses a particular type of 'institutional isomorphism'.

[3] Italy and France are two countries which cannot find a place in Hall and Soskice's dichotomy.

Australia and Canada could be related; (ii) the *social-democratic* SSIP, corresponding to the Scandinavian countries; (iii) the *mesocorporatist* SSIP (Japan); (iv) the *'European'*[4] SSIP (France, Germany, Italy and the Netherlands). The theoretical analysis identified the reasons why institutions were likely to 'matter' in the differentiation of economies and why this was expected to have consequences for the scientific, technological and industrial specialisation of countries. A consequence was that different institutional characteristics should be associated with different innovation capabilities and a differentiated pattern of industrial specialisation. The theoretical scheme underlying the analysis can be represented as in Figure 1. Its basis is the interaction between the scientific sector, producer of ideas, the technology sector, which turns these ideas into artefacts, and the manufacturing sector, which turns the artefacts into marketable products. Three institutional areas were also of particular importance for the efficiency of the interaction just mentioned: the education and training system, which is responsible for supplying the economy with an adaptable and well-trained work force, the financial system, which defines an implicit time horizon of innovation and production and plays an important role in selecting and financing investment projects, allowing for a sufficiently high investment rate, and the system of labour relations, which indirectly determines price competitiveness as well as some non-price aspects such as the quality of cooperation in production relationships.

Figure 1. - *The Social Systems of Innovation and Production*



The Social Systems of Innovation and Production were defined as particular forms and patterns of interaction between six subsystems: science, technology, industry, education and training, labour markets and finance; each subsystem is characterised by a certain mix of institutions and forms of organisations. The dynamic 'compatibility' of each sub-system with the others defines ex-post the features of the global SSIPs.

[4] Obviously, this SSIP does not represent *all of* Europe.

The main problem with a classification of SSIP in four types lied with European countries. A homogeneous 'European' group where France and Germany would be lumped together with Italy and possibly other South-European countries raised some questions about the precise definition of the European SSIP. Concentrating on the realm of innovation, Italy and other Mediterranean countries seemed very different from Continental Europe, most notably in terms of R&D intensity and the importance of high-tech industries. New analyses were carried out in Amable and Petit [2002], which led to a refined typology of SSIP. Six SSIPs could be distinguished: (i) the market-based SSIP; (ii) the social-democratic SSIP; (iii) The mesocorporatist SSIP, with Korea now joining Japan; (iv) The "Continental European SSIP, comprising the countries that belonged to the 'European' SSIP (France, Germany, the Netherlands), without Italy, but joined by Belgium and Ireland. (v) An "Alpine" variant of the preceding SSIP, comprising Austria and Switzerland; (vi) A "Mediterranean" SSIP, comprising Spain, Italy, Greece and Portugal.

Besides the differentiation of the former European SSIP into three models, the main results were that if there did not seem to be any general pattern of convergence toward the market-based SSIP, one could nevertheless observe the advance of some market mechanisms in specific areas (mostly the financial system), and both 'globalisation' and the 'new economy' (the production and diffusion of ICT) affected SSIPs in a differentiated manner. All this suggests that the dynamics of SSIPs may not be a simple reproduction of the same fundamental differences over time and that persistence of diversity does not mean perpetuation of the same patterns.

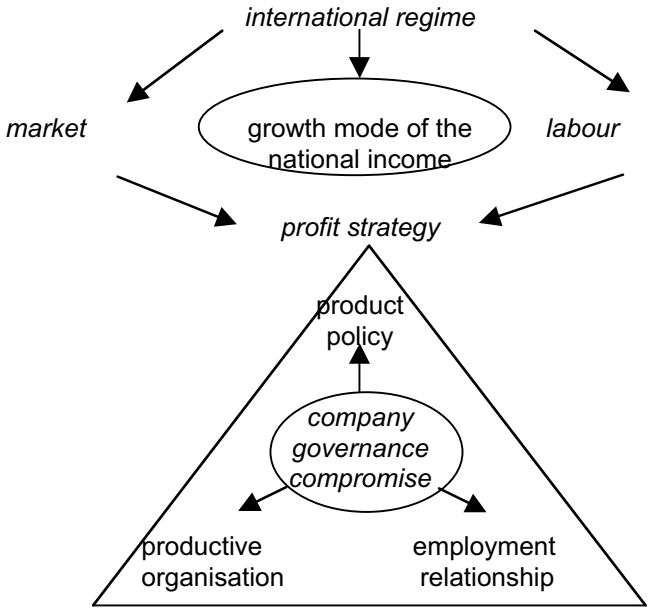
When applied at the company level, this research strategy does not lead to the conclusion that there exist four or six types of productive models, i.e. one per SSIP, as if the micro/meso and macro –levels were homothetic. Studies of the automobile industry for instance reveal that it would be incorrect to construe its past as a mere succession of dominant models over time (craft production, mass production, lean production, modular production), but also to consider that there is one productive model corresponding to a given environment, defined as the institutions of a particular SSIP. In fact, the sector has manifested a variety of profit strategies, as well as a renewed diversity of productive models. The very idea of a Japanese productive model for instance has been analytically deconstructed to reveal persistent diversity in Japan's automobile industry, and in the problems it faced over the course of the 1990s (Boyer, 1999; Freyssenet, 2001).

Our approach coupling an institutional analysis of socio-economic (SSIP) and productive models also transcends the evolutionary vision of radically heterogeneous agents, for which each actor is depicted solely in terms of his/her underlying specificity (path-dependency). In fact, even though we refuse to perceive organisations as entities whose configurations are solely determined by their environments (faced with which they have to devise optimal responses), our representation still does not construe variety as a mere analytical product of the inherent characteristics of agents' cognitive processes. Quite the contrary, it tends to demonstrate that firms use the outcome of their learning processes regarding various operational modes at their disposal in order to reduce (through their product policies, productive organisation and the way they build up their employment relationship) the two fundamental uncertainties that mark their relationships to their product and labour markets. What firms develop at the same time as their competencies are more or less effective forms of insertion into their sectorial environments and specific macro-economies (Boyer and Freyssenet [2002]).

The analysis has basically focused on two main propositions relating to company profitability (and survival): firstly, a firm's *profit strategy* must be relevant to the economic

and institutional environment ('modes of growth and national income distribution') of the countries where it operates; secondly, a firm's *company governance compromise* has to be solid enough to allow its actors to discover and implement means (product policy, productive organisation and employment relationship) that will be both coherent with the profit strategy being adopted as well as acceptable to the actors: they will be thereby inventing/adopting a productive model (Figure 2).

Figure 2. - *The productive model and its environment*



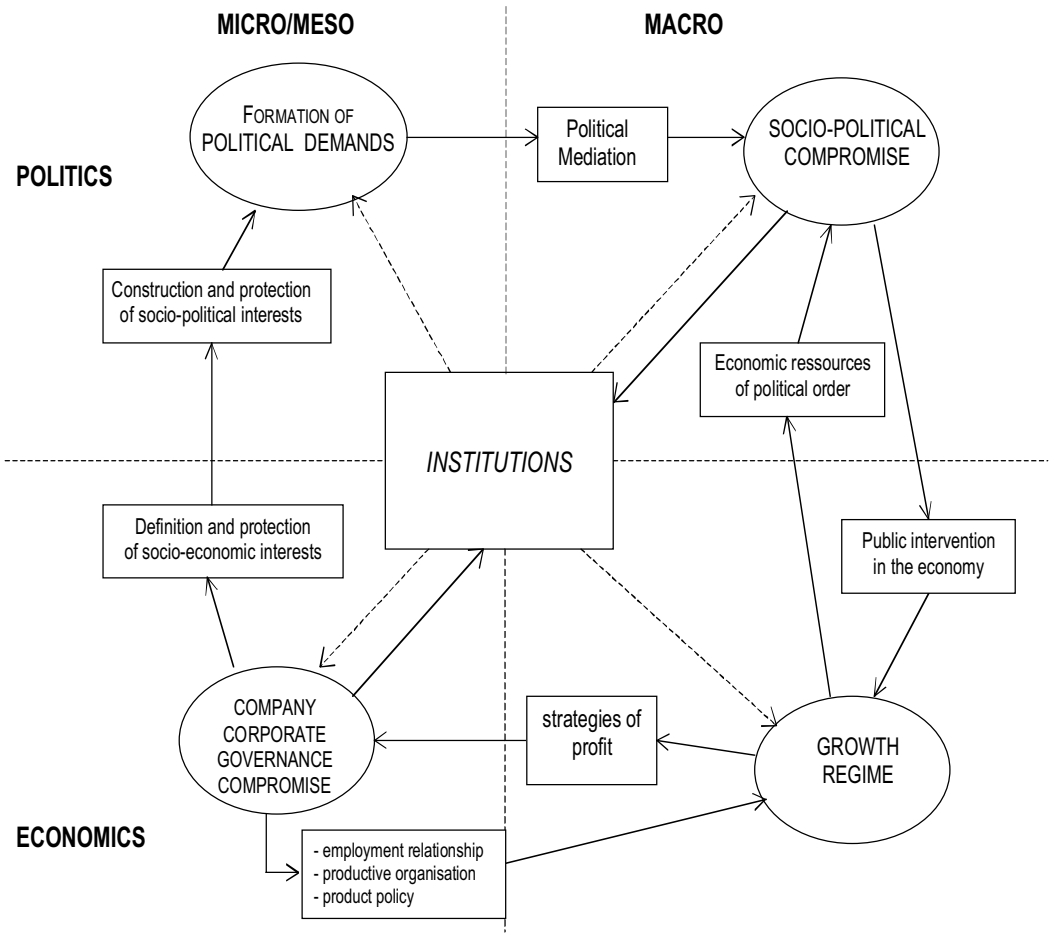
Source: Boyer, Freyssenet, 2002

Productive models are forms of reliability, coherence and acceptability that one can use to sustain profit strategies which will be marked by a relative dynamic stability. Neither random nor consciously chosen, they constitute emerging phenomena. At the same time, they are subject to forms of 'organisational work' on oneself and on one's environment – these being events that define the forms of innovation and hybridization out of which diversity is born. This sort of representation allows us to theorise the diversity of productive models.

THE ESEMK RESEARCH AGENDA

Our project aims to present new analytical tools for the investigation of the issues related to the possible convergence towards a single socio-economic model of knowledge-based society and the persistence of diversity of productive models and institutional forms, combining the micro/meso and the macro/societal levels of analysis (Figure 3). Studies concerning the European socio-economic model(s) will build upon progress made during recent work on Social Systems of Innovation and Production. The project will fine-tune typologies of socio-productive models and offer new findings related to how these models have developed. In this way we will be doing more than merely characterising the different models. This will help us to move towards a theory of the political economy of diversity and models' development (Amable [2003]).

Figure 3. - *A micro-macro representation of the political economy of socio-economic models*



The diversity of socio-economic models

*At the macro/societal level, o*ur project will improve the state-of-the-art by proposing a theoretical analysis of the diversity of socio-economic models based on a political economy approach of institutions and coupled with an analysis of the diversity of productive models within a given socio-economic model. We will define the characteristics of a European socio-economic model in terms of specific institutions in the areas of product market regulation, employment relationship, financial relationship and social protection, and analyse the institutional complementarities that ensure the coherency of this model: between product markets regulation and labour market characteristics (Amable and Gatti [2002]), labour market and the financial system (Amable Ernst and Palombarini [2002]), product market regulation, the financial system and industrial specialisation (Bassanini and Ernst [2002]), social protection and labour markets and so on (Amable [2003]).

We will then compare this model with existing institutional configurations. We will identify the forces that affect the dynamics of the European socio-economic model, in terms of political sustainability, social cohesion and economic performance particularly with respect to the knowledge-based economy and we will be able to answer the following questions:

- ✓ Is there one or are there several sustainable socio-economic models within Europe?
- ✓ Is the 'European socio-economic model' defined as the 'lowest common denominator' of the institutional characteristics of European Union member States or is it possible to identify some fundamental characteristics of a European model distinct for instance from the market-based model?
- ✓ Can we define the institutional characteristics of the European model in terms of product markets regulation, labour market and employment relationship characteristics, financial system and corporate governance and social protection?
- ✓ Are some or all of the European countries converging towards this European model, are they all diverging, or is there a pattern of differentiated convergence, some of them belonging to a core European model and others drifting apart?
- ✓ What are the socio-political equilibriums associated with the emergence and stability of this 'European socio-economic model'? Are they stable?
- ✓ Is the European socio-economic model competitive with respect to the other most advanced knowledge-based societies in the world?

Our approach presents significant innovations compared to the economic literature on the development of modern economies. The scholars of the variety of capitalism give predictions on the development of modern societies that are clearly far from the idea of a general convergence towards a dominant model of socio-economic development. However, they have in common with the proponents of institutional convergence a more or less implicit hypothesis that economic efficiency is, at least in the medium/long run, the determinant of the dynamics and viability of a society. For the 'variety of capitalism' approach (e.g. Hall and Soskice [2001]), there are several sources of competitiveness and thus different models can coexist. The conditions for the emergence and stability of a model are its capacity to stay competitive and lead to economic growth.

From our point of view, this position is correct but incomplete. We certainly concur that the institutional architecture of a society has a major influence on economic performance. However, this does not imply that a selection process should necessarily lead to a break-down of institutions that impede growth and competitiveness. The design of optimal institutions would be facilitated if agents had a common objective, i.e. if they all agreed on what performance indicator should be taken into account to measure the efficiency of institutions; they might then agree on an efficient institutional design, conditional on their rationality. However, agents usually disagree on what this indicator could be because they often have different and even conflicting interests.[5] Institutions are likely to affect the interest structure and hence the preference that agents may express towards a certain pattern of institutional

[5] One may argue that the knowledge-based society may exacerbate some conflicts of interest: among firms as a consequence of increased competition, between firms and workers and among workers _high-skilled vs. low skilled, mobile versus immobile…_ (Amable and Askenazy [2002]). It is bound to create new divides, with political consequences that are yet to be analysed, which may lead to institutional change.

change. Rather than optimal solutions to a given problem, institutions represent a compromise in the social conflict originating in the heterogeneity of interests among agents. What we consider as different economic 'models' are therefore based on specific social compromises over institutions. The question of models' stability and institutional change is basically a question of political economy.

Institutions are the product of political processes governed by a logic which is distinct from that of wealth accumulation. They perpetuate political compromises related to specific conflicts. Once existing, they are perceived as 'rules of the game', i.e. rules that organise social exchange: both economic exchange and socio-political conflicts. One may then imagine that any process of institutional reform involves costs. On the one hand, it reopens a certain number of specific conflicts that had been settled by an agreement on 'institutionalised compromises'; on the other hand, it implies a questioning of the rules of the game that permit to structure still unsettled conflicts. If institutional change is not impossible, it takes place in specific configurations, those where the socio-economic trajectory contradicts the fundamental socio-political compromises. This happens with greater probability within a socio-economic model exhibiting poor economic performance, if only because the economic resources necessary to the maintenance of political compromises become scarcer. But one cannot exclude the hypothesis of institutional change in a society enjoying a fast growth (growth may not be sufficient to guarantee the reproduction of political compromises) or that of the persistence of an institutional architecture leading to a modest economic performance (which may not systematically induce a break-down of the fundamental political compromises). Instances of the latter case are numerous; the post war Golden Age (1945-1973) on the other hand is an example of a period of important institutional changes and socio-political conflicts (for some countries at least) taking place in a fast growth environment.

The relation between economic evolution and institutional change are thus much more complex than a direct link between the emergence or the persistence of a socio-economic model and its economic performance. On the one hand, institutions and public policies shape the growth regime, income distribution and income volatility. On the other hand, the growth regime both conditions the formation of socio-political interests that demand a certain political mediation and determine the resources that the political mediation can mobilise to appease social conflict. The evolution of socio-economic interests is also conditioned by the mode of management of corporations and the compromises established at the firm-level. It is therefore important to consider the modality by which firms' strategies fit into their macroeconomic and macro-institutional environments, since this also determines the productive model's tenor and reliability. After all, the income distribution, growth modalities and balance of power that drive a model not only shape the outlets by means of which profit strategies will actually materialise but also affect the capacities firms build up in their attempts to invest, innovate and distribute income to their various stakeholders. The rules that firms apply in these areas are both forced upon them by their environment and interpreted in a specific way by each firm. As such, identifying the contours and developments that affect these actions is undeniably one way of improving our understanding of the various socio-economic models present in a knowledge-based economy.

One can then have two sources of institutional change: as a result of a political action when the existing rules of the game reveal to be unsuited to the building of a stable social compromise; or as a result of local arrangements (at the firm-level for instance), when profit strategies compatible with the existing growth regime lead actors (wage-earners, firm-owners and management for instance) to establish a corporate governance arrangement founding new rules for social exchange. It is therefore important to establish connections between the macro

and the micro/meso –levels since 'local' micro compromises may in the medium/long run affect the stability and sustainability of the global socio-economic model whilst political action at the 'macro' level may threaten some 'micro' profit strategies.

We will apply this theoretical matrix to the transformations affecting European countries in the context of the emergence of a knowledge-based society and analyse the political impact of the changes that took place since the 1990s in order to assess the likely consequences for the different socio-economic models. An analysis of each model will be carried out at five different levels, each of which has a reciprocal effect on all the others.

1. The predominant paradigm for innovation and production;
2. The way in which interests are structured and political demands shaped;
3. Social institutions, to be understood here as "institutionalised compromises" between interests that are heterogeneous and (at least in part) conflicting;
4. Public policies, notably economic policy, construed here as responses that are supposed to arbitrate between divergent political demands;
5. An economy's mode of growth.

The diversity of productive models

At the *micro/meso* level, the project aims at improving the analytical matrix of the diversity of firms' productive models developed by the GERPISA in its previous research programmes to improve our understanding of certain recent developments and also include new dimensions. This has notably involved contextualising a matrix that had been built to reflect the 20th century history of the automobile industry. *The aim now is to focus on issues associated with the production and management of knowledge at the dawn of the 21st century.* Characterised by a long period of technological maturity,[6] the new context, marked by a permanent innovation regime (Hatchuel, Le Masson and Weil [2001]), has changed the circumstances that shape today's competitive interactions, thus inferring new organisational modes, i.e. those that are capable of coordinated knowledge production and management (Lung [2001], [2002]). New profit strategies and new productive configurations are therefore likely to emerge, as witnessed by recent carmaker developments.

A second new characteristic to be integrated relates to the phenomenon of financialisation (Williams [2002]) and to the rise of corporate governance (Lazonick, O'Sullivan [2001]). It would be important to check for a possible change of trends in the financialisation of the car companies: the 1990s were about equity value and the prevaricating company to demands for value. Recent evolutions raise issues about (a) credit stability (especially for the European car companies who have moved into finance) (b) underfunded pension schemes and (c) the interaction between growing product market pressures and capital market constraints (d) the implications for the stable stakeholder compromises of the 1990s and the market for corporate control.

A third new characteristic relates to the effects of the many merger-acquisition and alliance operations that have taken place in recent years. Such operations, whether intra-European (France-Germany) or extra-European (notably with North American or Japanese partners) in nature, have raised questions about previous governance compromises and offer us a special opportunity to investigate firms' European growth strategies as well as State

[6] this being the basis of Abernathy's [1978] analysis

authorities' attempts to impact market structure via monopoly controls, measures negotiated directly with firms and regulations (including European sectorial policies). Linking different national institutional environments together, we find discussions on the postulate that convergence has actually taken place. This hypothesis is re-situated in a concrete, observable and measurable dynamics, and the strengths and impacts of its different potential convergence factors are assessed.

These considerations will lead us to work on *the analytical matrix previously developed with GERPISA in order to include recent developments in the automobile industry.* One must also consider the recent transformations in the automobile market, and in demand for this product. For firms, such a demand infers their getting involved in a learning process that will allow them to apprehend, interpret and modify ongoing trends in a way that is beneficial to them. Much as we have been able to demonstrate that firms' shared technological environment has caused them to devise highly differentiated production processes and products stemming from their own design and learning activities, our research should also show how organisations incorporate this issue and how the mediating links between income distribution, the demand that a total sector faces and the demand that firms in this sector face ultimately crop up at the end of an adaptation and innovation effort that appears to be an essential dimension of corporate strategy in a knowledge society.

We will then test the *analytical matrix with other sectors than the automobile*, since the specificities of this business could hamper the validity of the findings we obtain. The application of this approach to other sectors will confirm its analytical and strategic usefulness, as demonstrated in a recent communication by J.L. Beffa, CEO of Saint-Gobain (Beffa [2002]). Whether in reference to studies by K. Pavitt [1984] for example, or to more recent ones by Franco Malerba and Luigi Orsenigo [1997], the economic literature has mainly highlighted the diversity of sectorial configurations, both in terms of their knowledge bases and innovation dynamics and as regards the varying architectures used in their products and in the organisations that drive their various knowledge coordination modes (Fujimoto [2001]).

This latter approach focuses on the opposition between a modular structure and an integrated one. Although modular production offers a certain number of features that can help actors to cope with increased product diversity (due to greater competition), and even though it enhances incremental innovation, we should nevertheless avoid falling prey to visions like that of the network-firm, an entity supposedly geared towards the type of cooperation that some analysts (Langlois [2001]) believe to have historically succeeded the large multidivisional enterprise as an optimal mode of organisation – a configuration whose emergence and diffusion has been discussed by Chandler [1990]. The multidivisional firm has not led to the disappearance of any of the other organisational forms that were reproduced and renewed all throughout the 20th century. This is because the diffusion of mass production did not cause any of the other forms of production to disappear (Piore and Sabel [1984]). Modular production should be viewed as one of the issues to be considered in this diversity approach. On one hand, modular product architecture cannot be generalised due to the constraints affecting certain products, like the automobile. On the other, modular organisation is more than a mere transcription of technical constraints, as it involves strategic issues that are of an entirely different nature and involve 'macro-level' institutional characteristics and socio-political equilibriums. The sectors chosen for the study are meant to deepen our explorations of modularisation issues (Sako [2002]; Volpato [2002]) in connection with institutional change at the societal level (labour markets, social protection…).

Another manufacturing sector with characteristics similar to the automobile industry (but where we can identify other actors' strategies and different technical and institutional

constraints) is the aerospace industry. This will be the topic of a comparative study. Alongside these two traditional manufacturing sectors, the study will focus on industries that play a key role in the dynamics of the 'new economy' – in other words, on ICT sectors. These are likely to manifest configurations that contrast greatly in terms of their profit strategies, the presence of institutional investors or their employment relationships. We are specifically referring to the sectors associated with information and communications technologies, whether in the hardware (telecommunications equipments) or the software business. The software industry will give us an opportunity to apprehend the configurations that are likely to arise in the field of service activities. Two other sectors would be selected to make comparative studies regarding the impact of public regulation and the interactions with the final demand: energy (Public utilities) and agro-food industries.

On the basis of these six sectors (automotive industry, aerospace, telecommunications equipment, software, energy and agro-food sector) and by referring to the structural changes that have been identified in the automobile industry, a comparative study of the main actors' trajectories over 1975-2005 will allow us to test our analytical matrix, renewing and generalising its incipient conceptual framework to help it encompass the various strategies and models that are to be found in the various sectors.

Our investigations will focus on four areas in particular:

- ✓ the relationship with the end-user market – thereby accounting for the product-service bundle that causes actors to adopt new strategic behaviours;
- ✓ company governance compromise dynamics - with emphasis on firms' equity structures; institutional investors' strategies towards the firms in question; and employment relationship characteristics (work organisation, qualification, flexibility, pay systems, role of labour unions);
- ✓ the productive organisation – the point here being to apprehend the redistribution of activities all along the value chain and to ascertain the impact thereof on inter-firms relationships, in the light of the current debate on modular production and diffusion of ICT;
- ✓ State intervention: via environmental regulation, competition policy, and the protection of intellectual property right that influence actors' behaviour and the dynamics of the sector in question.

REFERENCES

Abernathy, W. [1978] *The Productivity Dilemma* Baltimore, Md: The Johns Hopkins Press,.

Albert M. [1991] *Capitalisme Contre Capitalisme*. Paris : Seuil.

Amable B. [2000] Institutional complementarity and diversity of social systems of innovation and production. *Review of International Political Economy*.

Amable B. [2003] The *Diversity of Modern Capitalism*. Oxford: Oxford University Press forthcoming.

Amable B. and P. Askenazy [2002] La double fracture numérique et la nouvelle integration des enterprises. Rapport Finalisé CGP-CEPREMAP.

Amable B., P. Askenazy, A. Goldstein, and D. O'Connor (co-ordinated by D. Cohen) [2002] Internet: The Elusive Quest of a Frictionless Economy. In T. Boeri and P. Garibaldi (eds) The *ICT* Revolution. Forthcoming Oxford University Press.

Amable B., Barré R. and R. Boyer [1997], *Les systèmes d'innovation à l'ère de la globalisation* , Paris, Économica,

Amable Ernst and Palombarini [2002] Comment les marchés financiers peuvent-ils affecter les relations industrielles ? Une approche par la complémentarité institutionnelle. *L'Année de la Régulation*, n° 6 (2002-2003).

Amable and Gatti [2002] Macroeconomic effects of product market competition in a dynamic efficiency wage model. *Economics Letters*. (75)1 pp. 39-46.

Amable B. and P. Petit [2002] La diversité des systèmes sociaux d'innovation et de production dans les années 90, in Touffut J.P. (ed.), *Institutions et innovation. De la recherche aux systèmes sociaux d'innovation*, Éditions Albin Michel, Paris.

Aoki M. [1994] The Contingent Governance of Teams: Analysis of institutional complementarity. *International Economic Review* 35, 657-676.

Aoki M. [1988] *Information, incentives, and bargaining in the Japanese economy*, Cambridge University Press, Cambridge

Aoki M. [2001] *Toward a Comparative Institutional Analysis*. Cambridge (Mass.): The MIT Press.

Bassanini A. and E. Ernst [2002] Labour Market Regulation, Industrial Relations, and Technological Regimes: A Tale of Comparative Advantage, *Industrial and Corporate Change*, 2002, 11/2

Beffa J.L. [2002] La construction d'une stratégie de profit. Le cas du groupe Saint-Gobain, Paper presented to the Saint-Gobain Centre for Economic Research 5th Conference *Organizational Innovation within Firms,* Paris, 7-8 November 2002.

Boyer R. [1999] Will the Japanese and the German Innovation Systems Cope with the Challenges of the 21st Century? *Economic Research Center Discussion Paper* n° 112, Economic Research Center School of Economics, Nagoya University, February

Boyer R., Freyssenet M. [2002] *The Productive Models. The Conditions of Profitability,* London, New York: Palgrave.

Cairncross F. [2001] *The Death of Distance*, Harvard: Harvard Business School Press.

Chandler Alfred D., Jr [1990] *Scale and Scope. The Dynamics of Industrial Capitalism*, The Belknap Press of Harvard University Press, Cambridge, Mass.

Crouch C. and W. Streeck [1996] *Les capitalismes en Europe,* La Découverte, Paris.

Esping-Andersen G. [1990] *The Three Worlds of Welfare Capitalism*. Princeton: Princeton University Press.

Freyssenet M. [2001] Le modèle productif japonais n'a jamais existé, in R. Boyer et P.F. Souyri, *Mondialisation et régulations. Europe et Japon face à la singularité américaine.* Paris Editions La Découverte pp.97-116.

Fujimoto T. [2001] La diversité de l'organisation des firmes : une analyse, in R. Boyer et P.F. Souyri, *Mondialisation et régulations. Europe et Japon face à la singularité américaine.* Paris : Editions La Découverte. pp.131-38.

Guellec D. [2002] L'émergence d'une économie fondée sur le savoir. In J.P.Touffut (ed.), *Institutions et innovation. De la recherche aux systèmes sociaux d'innovation*, Éditions Albin Michel, Paris.

Hall P.A. et Soskice D. (eds.) [2001] *Varieties of Capitalism. The Institutional Foundations of Comparative Advantage*. Oxford : Oxford University Press.

Hatchuel A., P. Le Masson and B. Weil [2002] From knowledge management to design-oriented organisations, *International Social Science Journal,* Special issue n *The Knowledge Societey,* n°171, UNESCO, pp.25-37

Langlois R.N. [2001] The Vanishing Hand: The Changing Dynamics of Industrial Capitalism, *Working paper,* University of Connecticut

Lazonick W. and M. O'Sullivan [2001] *Corporate Governance, Innovation, and Economic Performance in the European Union*, TSER supported by the European Commission, 4th Framework Programme (SOE1-CT98-1114), Final Report.

Lung Y. [2001] Coordinating competencies and knowledge: A critical issue for regional automotive systems, *International Journal of Automotive Technology and Management*, 2001, Vo.1, no.1, pp.108-127

Lung Y. [2002] *Coordinating Competencies and Knowledge in the European Automobile System,* COCKEAS final report for the European Commission, 5th Framework Programme, Thematic network (HPSE-CT-1999-00022), Two volumes, October 2002.

Malerba F. and L.Orsenigo [1997] Technological Regimes and Sectoral Patterns of Innovative Activities Industrial *and Corporate Change*, vol. 6 (1), pp. 83-117.

OECD [2000] *A New Economy ? The changing role of innovation and information technology in growth.* Paris: OECD.

Pavitt. K. [1984] Patterns of Technical Change: Towards a Taxonomy and a Theory, *Research Policy*, 13, pp. 343-373.

Piore M. and C.F. Sabel [1984] *The Second Industrial Divide: Possibilities for Prosperity*, New York; Basic Books.

Sako M. [2002] Modularity and Outsourcing: The Nature of co-evolution of product architecture and organisation architecture in the global automotive industry, in A. Prencipe, A. Davies and M. Hobday, *The Business of Systems Integration* Oxford: Oxford University Press (forthcoming).

Schmidt V. [2002] *The futures of European Capitalism*. Oxford: Oxford University Press.

Shonfield, Andrew [1965] *Modern Capitalism. The Changing Balance of Public and Private Power*. Oxford: Oxford University Press.

Volpato G. [2002] The OEM-FTS Relationship, Workpackage One Final Report in *Coordinating Competencies and Knowledge in the European Automobile System,* Annexes Volume to the CoCKEAS final report for the European Commission, 5th Framework Programme, Thematic network (HPSE-CT-1999-00022), October 2002, pp.19-51.

Williams K. [2002] New agendas for auto research: financialisation, motoring and present day capitalism, Workpackage Three Final Report in *Coordinating Competencies and Knowledge in the European Automobile System,* Annexes Volume to the CoCKEAS final report for the European Commission, 5th Framework Programme, Thematic network (HPSE-CT-1999-00022), October 2002, pp.76-94.

Zarifian P. [1993] *Quels modèles d'organisation pour l'industrie européenne ?* Paris: L'Harmattan.