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The link between the diversity of productive models
and the variety of capitalisms

A review of the literature and contextualisation
using the car industry as a case study

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L'articulation entre la diversité des modèles productifs et la variété du capitalisme. Une revue de la littérature et une mise en perspective à partir du cas de l'industrie automobile

Résumé

Rédigé dans le cadre du projet ESEMK soutenu par l'Union Européenne dans le 6^{ème} PCRD (Priorité 7, CIT-CT-2004-506077 The European Socio-Economic Models of a Knowledge-based society), le papier discute de l'articulation des approches de la variété des formes du capitalisme au plan sociétal et celles centrées sur la diversité des formes d'organisation des firmes. Cette articulation est illustrée à partir du cas de l'industrie automobile. La première partie présente les travaux s'inscrivant dans une hypothèse d'isomorphisme institutionnel où l'environnement macro-institutionnel détermine les formes d'organisation des firmes. La seconde partie met en relation les cadres analytiques permettant de penser une diversité des formes institutionnelles à la fois aux plans micro, méso et macro.

Mots clés : industrie automobile, institution, isomorphisme institutionnel modèles productifs, organisation de la firme, secteur, variété du capitalisme

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Abstract

Prepared within the framework of the ESEMK project supported by the EU (FP6, Priority 7, CIT-CT-2004-506077 The European Socio-Economic Models of a Knowledge-based society), this paper discusses the linking between the variety of capitalism and the diversity of organisational forms for firms. This linking is illustrated through the case of the car industry. First part presents the works based on the hypothesis of an institutional isomorphism between the macro-level and the organisation. Second part tries to link analytical grids which integrate the diversity of institutional forms at the macro, meso and micro-levels.

Keywords: car industry, institution, institutional isomorphism, organisation of the firm, productive models, sector, variety of capitalism

JEL: B52, L200, L620, P500

Introduction

Between the representative firm found in partial equilibrium analysis defined by its homogeneity/identity hypothesis¹ and the radical heterogeneity characterizing the evolutionist approach², many studies have tried to analyse the diversity of organisational forms, with organisational theory literature having been particularly fruitful in this respect. The present article does not purport to summarise all of this research. Conducted under the aegis of the ESEMK project, which analyses the variety dynamics underlying Europe's socio-economic models, it focuses on a much more limited sub-section within this corpus, the one that tries to reflect upon the diversity of firms' organisational modes by analysing them in terms of variety of capitalisms. In this approach, organisational models are linked to the institutional environments in which firms operate. The crux here is the interconnection between the micro and macro levels, an orientation excluding studies that concentrate on the sectorial level alone. Nevertheless, no micro/macro linkage can do without an intermediary level, to wit the industry level, which remains the dominant sphere in the structuring of a competitive process.

Institutional form diversity approaches that link the micro (firm) level to the meso (industry/sector) and macro (economy/country) levels contain two kinds of stances. The first derives from a hypothesis of *isomorphism* between the firm and institutional environment levels (Di Maggio, Powell, 1983). Such approaches stress the importance of institutional constraints that are found in the environment and which generate a dominant (if not exclusive) form of organisation. Jackson's formulation for this is as follows:

"Institutional constraints... often lead to institutional isomorphism whereby organizations adapt similar structures and routines" (Jackson, 2004)

Approaches of this ilk can be dynamic in nature, revolving around successions of varying organisational forms (models) throughout capitalism's history. The idea here is that changes in firms' organisational forms constitute the driver and/or outcome of capitalism's transformations (Chandler, 1990; Langlois, 2003). They are also synchronic, emphasizing the singular nature of firms' organisations in different national contexts: "French model" (Lesourne, 1998) or "German model" (Vitols, 2004), etc. are used to describe the particularisms of national economies and/or their domestic firms.

In both cases, there is only one dominant (if not exclusive) organisational mode that will be linked with the socio-economic environment and selected for its economic performances. Of course, the variety of socio-economic models translates into diverse firm forms in different countries or sectors - but within a given geographic or historical context, only one way of organising things will be efficient. What we have here is an avatar of the "one best way" hypothesis.

The second stance is the one underlying the ESEMK project (Amable, Lung, 2003). It starts by hypothesizing a diversity of firms' organisational models in one and the same institutional environment, that of a given industry in a given country. This diversity lies at the very heart of the institutional dynamics in question. Complementarity/rivalry/otherness relationships exist between the models that serve to catalyse, at least partially, institutional change.

Starting with a *productive models* analytical grid proposed by Robert Boyer and Michel Freyssenet (2000b) based on GERPISA studies of the history of the car industry, this paper

¹ Pure and perfect competition hypotheses imply that all firms are perfectly identical: all produce the same good, have access to the same information (using the same technologies) and factors of production, etc. In fact, as Coase states, economic analysis does not really incorporate the firm per se.

² Who considers that each firm is different because its history is singular, meaning that its learning is specific.

will try to ascertain both the conditions under which said grid can be applied in other sectors, and also its links to the meso and macro levels, notably when crossed with Bruno Amable's 2003 *social innovation and production models* analytical grid. The aim here is to specify the interactions and dynamics amongst these varying levels.

The isomorphic hypothesis: a firm's organisation as determined by its institutional environment

Most approaches to the diversity of institutional forms seek to analyse institutional dynamics at a global level (Boyer, 2004a). Apprehended as an institution, the firm is the one (and for some analysts, the key) component that many analysts use when trying to characterize a stabilised institutional configuration/arrangement. This infers the existence of a strict equivalence between characterisations of socio-economic models (types of capitalism) and specific forms of corporate organisation.

An initial set of studies pursued a historical approach focusing on the institutional changes associated with the different stages of capitalist development. This involved a diachronic kind of diversity, with the organisational form that is the firm evolving in a way reflecting the institutional environment's attributes.

Conversely, synchronic approaches try to explain the coexistence of different types of firms. The focus here is less on an analysis of the dynamics of institutional change and more on a justification of the contemporary diversity of institutional configurations that are apprehended either at a macro-economic level (variety of capitalisms) or else at a sectorial level, when the observer is scrutinising the interconnections between (and the coherence of) the various institutional forms that are being established at the different industries' levels.

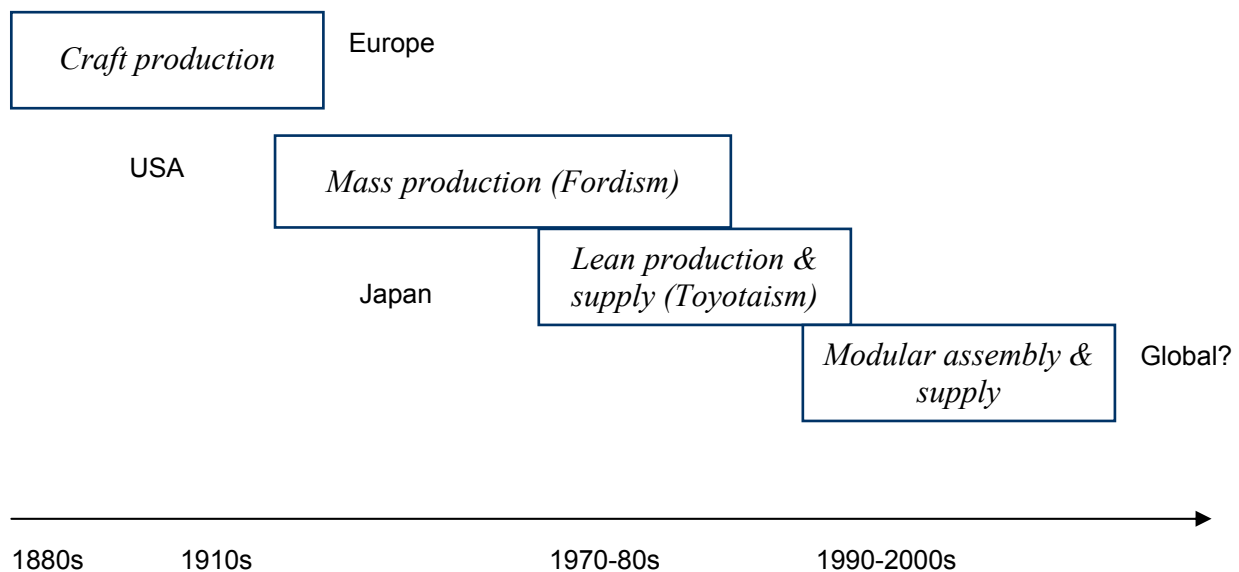
1.1. Historical approaches

Here the idea is that each period of capitalism corresponds to a dominant form in the coordination of economic activities. This vision is explicit amongst authors who want to characterize changes in modes of coordination (hence firm's organisation). It is implicit in studies highlighting capitalism's periodisation, notably in the Regulation Theory framework. As a flag bearer for "modern times", the car industry is the sector whose emergent models catalysed mass production in the 20th century. Hence the legitimacy of starting out by retracing its trajectory, such as many experts have represented this.

1.1.1. The car industry's different phases and succession of "one best ways"

The car industry offers a remarkable example of a historical vision geared towards a succession of dominant forms of production (cf. figure 1): craft production, Fordism and Toyotaim, and even modular production today (Womack, Jones, Roos, 1990).

Figure 1 – The historical succession of the car industry’s dominant modes of production



Source: based on Sako, 1999

Craft production would characterise the emergence of the car industry’s late 19th century in Europe (Bardou et al., 1997). Carmakers had low production volumes and offered a broad variety of models to satisfy the expectations of a well-to-do clientele, resulting in non-price competition (Abernathy, 1978). This was an era of carmaker entrepreneurs like Louis Renault, actors capable of designing high performance vehicles (motor races already existed at the time). Much of these early carmakers’ production function would be subcontracted (starting with bodywork) and they had little control over distribution. Medium-sized firms (which can be called “U-form” à la Williamson [1985]) constituted the rule.

The shift to a *mass production* is thought to have been the doing of the Ford Motor Company in the early 1910s. The global auto industry’s new centrality moved to the United States (Detroit, Michigan). Factors like the single model (Ford T), standardised and interchangeable parts and components, the assembly line, mechanisation (later automation), vertical integration, decentralised assembly (branch plants) internationalisation, increased pay (\$5 a day) and controlled distribution networks all helped to increase the scale of production to something like 2 million vehicles a year. Reading this long list of modifications, we get a sense of how they represented a break from the past, and of their mutual coherency. Alfred Sloan introduced changes in this system. Having noted the shift to a product renewal type of market, GM’s helmsman developed from 1920s onwards an approach that not only reconciled models’ volume and diversity (through the use of multiple brands) but also product marketing, customer credit facilities and accelerated obsolescence based on an annual renewal of models. With the affirmation of union power, this model stabilised in the immediate aftermath of World War II, to such an extent that it became the benchmark for a wage bargaining mode that was grounded in a rigorous definition of jobs and functions and based on a productivity gain-driven rise in real wages. In this context, mass production translated into large vertically integrated firms, organisations whose management was rooted in multidivisional structures (Williamson’s “M-form”) and associated with management control systems. Alfred Chandler’s 1962 book recapped the history of multidivisional firms in the United States, with GM constituting a laboratory for this form.

The mass production model that emerged in the United States diffused progressively to Europe right after WWII, with French, Italian and German carmakers following the same trajectory (a single model produced in large series, assembly line work, etc.) before expanding

their product range. Europe would use this period to convert to US firms' managerial virtues. However, this was not a time for the diffusion of mass production in Japan, where the economic and institutional environment did not lend itself to this model.

Standard analysis is that the Japanese market's demand for diversity and dearth of available resources (raw materials, space, workforce, etc.) induced carmakers here to seek innovative modes of organisation anchored in the general principle of a downstream-driven production (pull system). This intimated constant quality throughout the value chain, plus flexibility to cope with variations in demand (Coriat, 1991). With the Toyota production system, Toyotism and "lean production", this Japanese production model was widely described and popularised in the late 1980s, notably through the MIT International Motor Vehicle Program's lean production construct. Womack, Jones and Roos 1990s bestseller tried to characterize a new form of organisation; a model attained by implementing best practices in different areas. Leaner design, production and distribution would become a general principle, raising questions about US firms' structuring.

In the light of recent moves towards production on demand (customization) within the framework of increasingly broad product ranges offered by globalised automobile groups that deal with model architecture design functions by outsourcing even the most complex components' design and production to first tier suppliers, some modern observers have started talking about a new form of organisation called "modular production", wherein the automotive industry draws its inspiration from "Dellism", an IT model (Sako, 2003)) or in telecommunication industry (Fleury, Leme-Fleury, 2005).

As attractive as our panorama may be, it is necessarily incomplete. We know that flexible production first appeared in the 1920s (Hounshell, 1984); that the Sloanian and Fordian models are different and even incompatible (Boyer, Freyssenet, 2000a); that the original variety of Japanese automobile demand is a myth (Belis-Bergouignan, Lung, 1993); that the Japanese model of management never existed (Freyssenet, 2001); and that the car industry has deeper roots in an integrated architecture than it does in a modular one (Fujimoto, 2001). The pitfalls of seeking an all-encompassing vision become particularly acute when people try to make generalisations.

1.1.2. Periodisations in organisational change

The organisational change approach believes in the existence of an efficient form of organisation for the firm apprehended as an institution - a form that depends on the historical context. This stance pervades literature, notably the broader and more summative overviews. Note two series of studies that are directly related to the approach underlying the ESEMK project: readings focused on changes in economic agents' dominant modalities for coordinating activities with one another; and the periodisation offered by Regulation Theory.

1.1.2.1. *Playing different hands: from the invisible to the visible to the vanishing hand*

Arguably, the automotive industry's trajectory of historically contextualised (i.e., non absolute) forms of optimal organisation at any one moment in time offers a specification of broader changes in the modalities of efficient coordination that authors ever since Adam Smith have described by "hand" metaphors. These representations are more or less implicitly associated with the portrayal of a succession of industrial revolution

In this view, the First Industrial Revolution, which founded contemporary capitalism, was mainly rooted in market-based coordination (Smith's "invisible hand") amongst small or medium-sized firms. The Second Industrial Revolution (late 19th century) gave birth to the large modern company, where managers' "visible hand" (Chandler, 1977) replaced the

market's invisible one. Managerial theory has broadly described and analysed this rising technocracy, whose need to coordinate activities *ex ante* (and not just *ex post*, as the market does) led to the development of a managerial science whose aim has been to promote the efficient management of large firms. Alfred Chandler accounted for two forms of managerial capitalism: a competition-oriented form prevalent in the UK and the US; and a more cooperative form in Germany. This replicated Michel Albert's opposition between Anglo-Saxon and Rhinean capitalism (see below).

In *Business organization and the myth of the market economy*, William Lazonick (1991) extended Chandler's analysis by showing how the historical changes that capitalism went through after its 19th century British avatar (called "proprietary capitalism" due to its unitary feature of family-run companies associating ownership and control) led to a need for greater *ex ante* coordination, thus providing the impetus for a shift towards "managerial capitalism" in the United States, and more recently towards "collective capitalism" in Japan (with its *keiretsu*). This historical vision ties into frequent representations of the car industry's trajectory during the 1990s, when several authors (like Sturgeon, 2002) analysed the Japanese economy's problems and the rising fortunes of the US (with its ICT-based "new economy", the end of the Solow paradox, etc.) by averring that centrality had returned to North America, or at least to California on its West Coast.

In this view, we now find ourselves in a Third Industrial Revolution, one that revolves around information and forces us to rethink organisational modes. As opposed to the rigidity of managerial firms requiring perennial restructurings (ranging from an 8 year product cycle in automobiles to a 20/30 year cycle in aeronautics, both the epitomes of "modern" industries), what we supposedly have today is a flexibility constraint in a permanent innovation regime, as well as an environment marked by the waging of strong competitive rivalries on a global scale. The crux here is firms' responsiveness in coping with technological innovation and strategic uncertainty. Electronic goods' life cycles last just a few months (and sometimes just a few weeks). This illustrates the accelerated temporality associated with the new ICT industries, hence the need for a new corporate model (Lazonick, 2005).

Furthermore, such responsiveness is said to be beyond the purview of the large integrated structures that used to typify the managerial era. Hence the idea that we have entered into a "vanishing hand" phase (Langlois, 2003) in which each production problem corresponds to a temporary configuration that brings together a wide array of actors, depending on the project in question. Market-oriented coordination between independent economic units becomes central again, although there is still a need for *ex ante* convergence between the activities of the temporary configurations' partners, but this temporary need for coordination cannot be achieved by forms of coordination based on a authority principle (hierarchy): the network firm or the network of firms would be the efficient mode of organisation.

However, several authors (Prencipe, Davies, Hobday, 2003; for a summary, see Frigant, 2005) have shown that the kind of systemic architecture that a number of industries (including the automobile sector) have preserved precludes the modular organisational structure. This approach, opposing modular and integral industries (Fujimoto, 2002), offers a framework conducive to a synchronic vision of organisational forms' diversity (see below, 1.2).

1.1.2.2. Periodisation according to Regulation Theory

Regulation Theory (Aglietta, 1976; Boyer, 1983, 2004; Boyer, Saillard, 1995) offers a periodisation of capitalism's different phases. The status of the firm is not particularly significant in this conceptual toolbox (Lung, 2005), which starts out by trying to characterize accumulation regimes and modes of regulation as a combination of five "institutional forms": monetary regime; the wage-labour nexus; forms of competition; State intervention; and modalities of international insertion.

Regulation Theory's main goal has been to explain Post-war economic growth, characterized by strong and continuous increases in productivity gains, thereby enabling regular rises in wages. Another focus has been how the virtuous circle underlying a development model labelled "Fordism" fell into crisis in the 1960s-70s. In this view, the Golden Age of Fordism constituted a period of reference corresponding to a kind of regulation that can be called administered or monopolistic and involving a capitalism of large units. This was in opposition to 19th century "competitive regulation", marked by the predominance of small and medium-sized firms. What we have here is a hollow (implied) representation of the Fordian firm associated with the Fordist development mode – a firm that Benjamin Coriat and Olivier Weinstein characterised via five intrinsic attributes:

- "a place of antagonism between capital and labour (...),
- a place for the implementation of principles and protocols (...),
- large-sized companies that are usually vertically integrated (...),
- both the expression of and a breeding ground for a set of contractual practices (...),
- a place for establishing standards and norms" (Coriat, Weinstein, 1995, pp.170-2).

The helpful contribution of Michael Piore and Charles Sabel's *The Second Industrial Divide* (1983) will have been to remind people that focusing on mass production may cause them to forget the deployment of other forms of (notably corporate) production, even during the Golden Age of Fordism. It highlights the synchronic diversity of production's forms of organisation (an idea extended in Marangoni and Solari's 2004 paper) by interpreting this in "productive model" terms. Here, historical perspectives and regulationists' much beloved periodisation construct act as a catalyst for a diachronic reading focused on a succession of models over time. It was in their vain search for a 1990s post-Fordian firm that Regulationists ran out of steam, yielding to the charms of institutionalist approaches, starting with Masahiko Aoki's opposition between A and J firms.

1.2. Firms and the diversity of contemporary forms of capitalism

Debates on the diversity of forms of contemporary capitalism became central after the collapse of the Berlin Wall, which rendered obsolete the opposition between the Socialist and Capitalist systems. There has also been the impact of globalisation, which some see as leading to a homogenised world, thanks to the diffusion of an efficient capitalist model based both on market predominance as a mode of coordination and on the glorification of private initiative. In this respect, Michel Albert's book *Capitalism against capitalism* is quite premonitory since it defends a more "social" form of capitalism described as "Rhinean", in opposition to an "Anglo-Saxon" form whose remarkable efficiency is associated with major inequalities (Albert, 1991). The 1990s supposedly featured the triumph of this Anglo-Saxon model, with several authors having tried, on various levels, to show that it only constitutes one organisational form amongst many others (Amable, 2003, 2005), and that such forms are a function of national or sectorial contexts.

1.2.1. Macro-micro isomorphism

1.2.1.1. National systems and forms of the firm

The late 1980s through the early 1990s were a heyday for literature on Japanese firms. The Japanese economy's international breakthrough, notably in an auto industry that had previously been dominated by the US Big Three, gave many experts good cause to try and discover the origins of this competitiveness. Although the State's strong role (MITI) has been underlined, it was clearly in the organisation of the firm, both on an internal level and also in regards to its external (notably sourcing) relations that these experts tried to identify the specificities of the Japanese firm. Beyond culturalist interpretations stressing the idiosyncratic nature of any mode of organisation that is necessarily embedded in a national system (and therefore a product of history), several studies have proposed analytical interpretations of firms' specific organisational forms.

Table 1 – The opposition between the A and the J firm

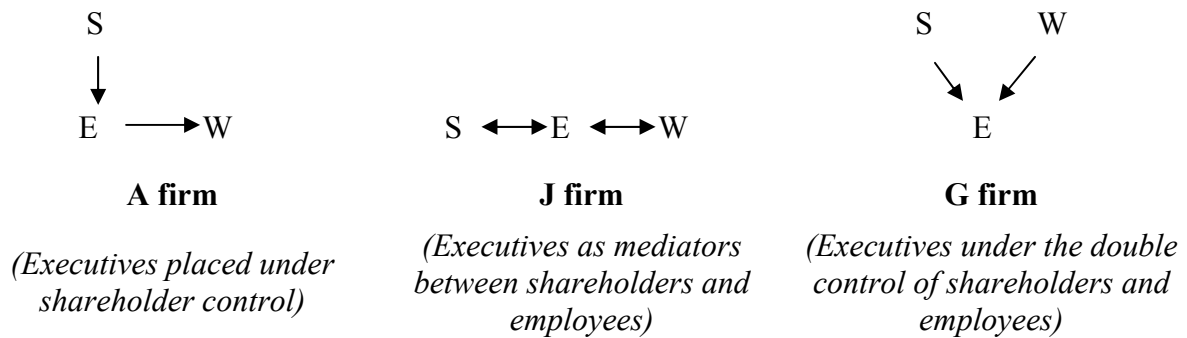
Attributes	The J Firm	The A (H) Firm
Informational structure	Horizontal	Vertical
Employment relationships (incentive)	Hierarchy of ranks	Hierarchy of functions
Finance	Main bank system	Financial market
Corporate governance	Dual control	Shareholders' control

Source: based on Aoki, 1995

It is mainly out of the opposition between the A (H) and the J firm that Masahiko Aoki built an analytical grid emphasizing the necessary interconnection between (and systemic coherence of) the different attributes of a Japanese firm (Aoki, 1988, 1990, 1995). This opposition is based on the firm's informational structure (vertical in the case of the A firm and horizontal for the J firm) that determines its ability to react to fluctuations in their environments (Aoki, 1986). The J firm's superiority in a turbulent environment (with the A firm being better in a stable regime or in a chaotic situation) infers flexibility and responsiveness derived from collective learning across all hierarchical levels, as well as an incentives system that is based on a hierarchy of ranks (quasi-lifetime employment, personalised career progression depending on one's involvement and efficiency). Bolstered by the presence of a large of bank within the keiretsu, industrial firms in this configuration find an attentive partner that provides regular monitoring and *a posteriori* controls, and which supports long-term investments (i.e., there are no short-term constraints such as the creation of shareholder value). Shareholders and employees both supervise executives who mediate the firms' two essential components (being the actors who provide funding and those who offer their labour). The attributes of the A (American) or the H (hierarchical) firm are diametrically opposed to this configuration, although they too are coherent (Table 1).

Largely focused on the A/J opposition whose main political contours are straightforward, Masahiko Aoki has integrated other types of organisation like the G (German) firm, which differs from the two aforementioned ones in terms of the relationships between firm's three main actors: its executives (E); employees (W); and shareholders (S) – see Figure 2.

Figure 2 – Characterisation of corporate forms based on the interactions between a firm's three partners



Source: Aoki

By introducing other elements like the role of the State, we could easily extend this analytical grid by choosing one firm model for each system national. Some confusion arises between the micro and macro analytical levels, whose linkage could be a problem. For example, in the case of Japan (Boyer, Yamada, 2000) no consideration is given to the dualism taken into consideration the fabric of SMEs marked by the uncertain nature of employees' employment status, nor with a service sector characterized by very low levels of productivity – this being the necessary counterpart of a configuration in which large companies offer quasi-lifetime employment. A macro/micro isomorphism may be able to conceive of a variety of organisational forms, but apparently only by restricting the breadth of this depiction.

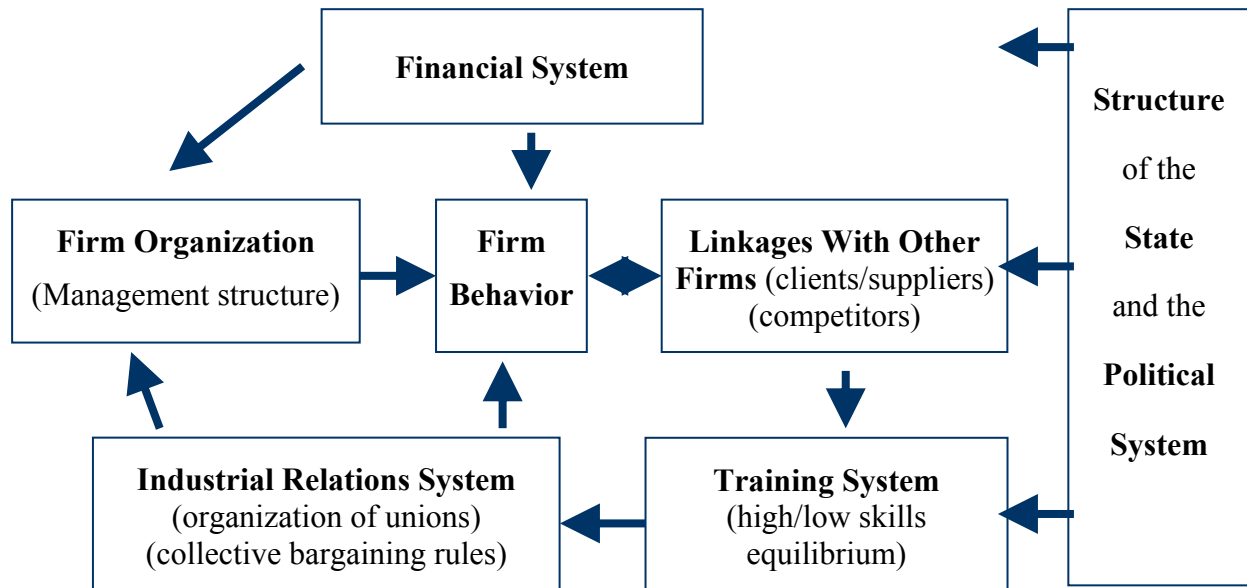
1.2.1.2. The Variety of Capitalisms School (VOC)

The confusion between various levels can also be found in studies of what Robert Boyer has called (2004a) the "Variety of Capitalisms" (VOC) corpus. This refers to all of the analyses that have tried to build upon Michel Albert's work, with its opposition of two forms of capitalism, by solidifying the construct's analytic foundations (Amable, 2005). Including notions like the interplay between collective modes of coordination, notably involving interactions between reticular forms (networks) and the impact of social norms (Hollingsworth, Boyer, 1997), the focus here is on capitalism's diversity (Crouch, Streeck 1996), apprehended through the prism of a configuration defined by different institutional arrangements. Once again we find the opposition between Liberal or uncoordinated Market Economies (LME) and Coordinated / organised Market Economies (CME).

One interesting version of this approach is found in studies by Peter Hall and David Soskice (2001). The focus here is on firms (figure 3) whose behaviour results from the coordinated action of several components:

- The structuring of the financial system: short-term oriented but risk-friendly in LME due to the involvement of the financial market, versus long-term oriented but risk-averse in CME since this is based on a stable relationship between banks and industry ;
- Industrial relations marked by a deregulated labour market in LME and by cooperative practices supported by labour unions in CME;
- An educational system that stresses general education (LME) or else intensive initial vocational training (CME);
- Inter-firm relations: very strong competition in LME, versus CME's strong propensity to develop cooperative arrangements (notably technological ones) inside of networks.

Figure 3 –VOC: A firm-centred approach



Source: Hall, Soskice, 2001

We can see right away that this Variety of Capitalisms approach is based on a total confusion between different levels of analysis, and that it does not enable thinking about diversity in areas like organisation (or even behaviours) within one and the same type of capitalism.

1.2.2. Meso-micro isomorphism: the intersectorial variety of forms of organisation

Certain studies consider the diversity of productive configurations within one and the same macro-institutional environment, with attention being diverted from the national echelon towards the meso-level where we find the industry. By viewing this level as something determinant in the development of institutional arrangements, organisational models shaped at the level of the firm reflect the impact of conventions or norms defined at a sectorial level.

1.2.2.1. Spheres of production

Conventions Theory (Orléan, 1994; Salais et al., 2000) is what substantiates this kind of analytical framework. Robert Salais and Michael Storper's "spheres of production" construct (1993) based on their analysis of "product" identity and quality conventions between suppliers and customers concerning the outcome of a production activity. The authors cross two criteria: the nature of the resources being used in production (standard or specialised), which helps them to apprehend the interactions between economies of scale and scope; and whether the demand is certain or uncertain (generic or dedicated products). They distinguish between four spheres of production (Table 2):

- The *industrial sphere* represents the mass production of standardised goods;
- The *market-oriented (flexible) sphere* also applies to standardised products, but includes a differentiation by type of client;
- The *interpersonal (professional) sphere* mobilises specific types of knowledge so that production can target specific clients;
- The *immaterial sphere* is the one where new products addressing a generic demand are created

Each of these spheres of production is characterised by conventions, notably regarding quality, operational logic (how uncertainty is handled, forms of competition) or deeply differentiated “registers of action“. Different types of firms can be accommodated here: in the *industrial sphere*, large firms will exploit the advantages of economies of scale, whereas in the *interpersonal sphere*, firms will be smaller in size so that they can manage interrelationships and bolster the basic competencies driving their competitive advantage.

Table 2 – Spheres of production à la Salais and Storper

	Specialised products	Standard products
Dedicated products	<i>Interpersonal sphere</i>	<i>Market-oriented sphere</i>
Generic products	<i>Immaterial sphere</i>	<i>Industrial sphere</i>

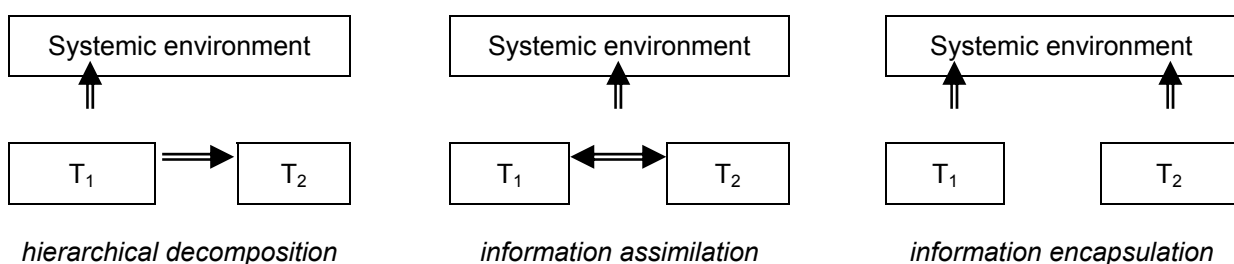
Source: Salais, Storper, 1993

This sort of analytical grid enables reflections upon the different spheres of production’s synchronic diversity but precludes any understanding of diversity within one and the same sphere of production (Coris, 2004). Each sector refers to one of these spheres and the typology proposed is not unrelated to the one established by Keith Pavitt (1986) to apprehend innovation dynamics in varying sectors. The approach allows us to apprehend inter-sectorial diversity (in different spheres of production) whilst suggesting that each sphere is homogeneous insofar as it is structured by a predominant quality convention.

1.2.2.2. Comparative institutional analysis

In more recent studies (Aoki, 2001, 2004) Masahiko Aoki has affirmed that institutional diversity is the rule. He develops a systematic approach (comparative institutional analysis) of the institutional change specifying certain concepts (notably relating to hierarchy and institutional complementarities). Aoki can broaden its analytical framework beyond the opposition between J and A firms, focusing on the role that informational structure plays in a fluctuating environment, but considering two different units T1 and T2 (Figure 4).

Figure 4 – The three generic modes of information circulation



Source : Aoki, 2001, p.103

Hierarchical decomposition and information sharing correspond respectively to the structuring of vertical and horizontal information. Encapsulated information is a figure generating a third configuration, one corresponding to modular architecture in products and organisations. This informational structure corresponds to a SV (Silicon Valley) model that supposedly characterizes ICT industries in which the search for new combinations of modules and the exploration of new horizons translate into organisational dynamics that do not fit into a binary A/J framework.

What Masahiko Aoki has done is to expand the framework beyond the national characterisations of firm forms (A, G, J) and incorporate an infra-national diversity dimension – the idea being that although the SV model stems from specific Californian organisational/institutional innovations, it can be diffused in other contexts. Lastly, he incorporates supranational configurations by integrating the global firm (GL) that functions like a set of hierarchised networks. Once again, it is in the area of ICT and through the use of stylised facts about certain US multinationals that Masahiko Aoki has tried to find elements to explain the emergence of a new configuration.

If we stay within the confines of his two additional configurations³, what is clear is that the new grid incorporates a diversity of firm models within one and the same economy. For example, the US will have type A, SV and GL firms (and even others). The analysis does infer, however, that within each industry, there exists one firm form that is efficient, meaning that different arrangements correspond to specific sectorial logics. The diversity of firms within one and the same industry has yet to be satisfactorily apprehended.

2. The double dimension of diversity: organisational and institutional

In sum, we should be trying to simultaneously apprehend diversity's double dimension, in regards to socio-economic models but also with respect to firms' forms of organisation, without debasing the latter by construing it as nothing more than the interplay amongst different sectorial logics. This is tantamount to following an approach à la Douglass North, who distinguished between institutions and organisations, with the former defining the rules of the game within which the latter operate (being the players whose actions are geared towards a specific finality). Earlier approaches confused the two diversities (with institutional diversity determining its organisational counterpart in a univocal manner) – our goal is to understand how diversities that are based on different foundations interact with one another.

The only tool that we can apply towards this end is the one conceptual framework that shares this goal: the productive models analytical grid (Boyer, Freyssenet, 2000a). Note this grid is currently being worked on (Freyssenet, 2003) and is likely to evolve somewhat to enable it to connect up our three levels (micro, meso and macro). Introducing a meso level will help us to transcend the current vision of institutions, and to account more explicitly for the interactions underlying the dynamics of institutional change in this micro/macro linkage.

2.1. Analysis of productive models' diversity

As the outcome of a collective research project conducted under the aegis of the GERPISA international network's 3rd Framework Programme (Training and Mobility Programme), which questioned the reality of a Japanese model of management that was being promoted at the time as a universal standard⁴, the *Emergence of new industrial models* programme (coordinated by Robert Boyer and Michel Freyssenet) paved the way to the development of an analytical grid that encourages thinking about the diversity of firms' forms of organisation within any given sector - in our case the car industry, which was the emblematic sector of Japanese international competitiveness in the late 1980s.

³ To underscore the extent of the models' diversity, he also included models that are directly inspired from W (Walrasian) or HM (Grossmann, Hart and More) theory, raising serious questions about said "models'" status.

⁴ Before the 1990s revealed the weaknesses besetting a host of Japanese firms, and their limitations at a macro-economic level.

Several GERPISA researchers have tried to apply this grid to other sectors. Their efforts have revealed the limitations of its initial version, and the need to ascertain issues for debate that should be included in a new one.

2.1.1. Presentation of the analytical grid

2.1.1.1. The grammar underlying the GERPISA analytical grid

The analytical grid that Robert Boyer and Michel Freyssenet have proposed tries to identify a firm's profit strategies so as to apprehend its conditions of performance. These can be twofold in nature, involving, on one hand, the strategy's *relevance* to the socio-economic environment in which the firm operates, and on the other, the process driving the achievement of internal *coherence* between the varying dimensions of the firm's organisation, based on what the two authors have called a government compromise. *Profit strategies* are central to this vision, since they help to determine a specification each of the firms in question, and to interconnect their external (relevance) and internal (coherence) levels – Figure 5.

Profit strategies correspond to a priority search for one or several profit sources amongst six fundamental sources thereof: volume; quality; diversity; flexibility; innovation; and permanent reduction of costs. The efficient implementation of one or several of these sources, hence the creation of a modicum of compatibility amongst varying profit sources, is a crucial element in the building of a productive model.

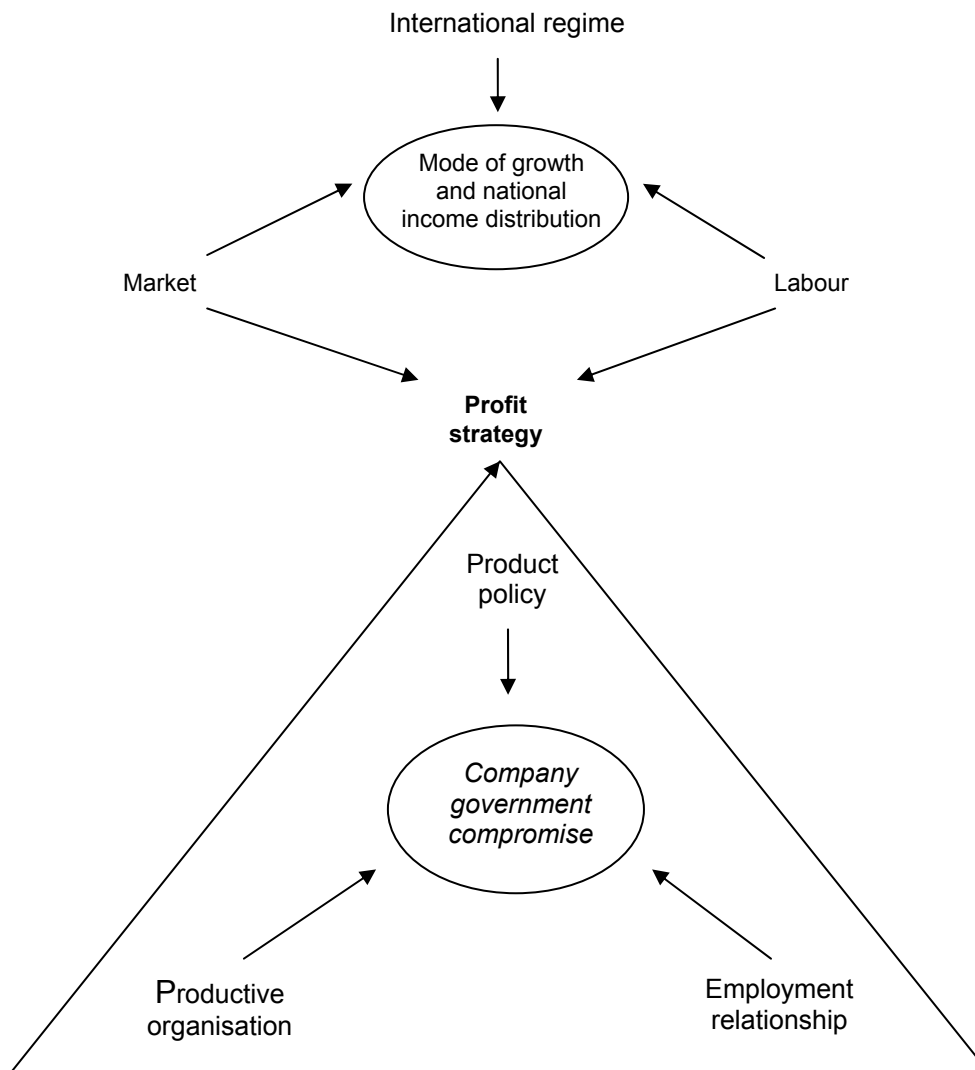
To be efficient, a strategy must first be implemented profitably in a given socio-economic context. For Robert Boyer and Michel Freyssenet, a strategy's external relevance basically depends on its ability to cope with two of the fundamental uncertainties that firms face: market uncertainty, i.e., whether the firm can find a demand for what it offers; and labour uncertainty, expressing its ability to motivate employees to implement its productive project.

These uncertainties are determined by the *mode of growth and national income distribution* that characterizes the economy within which the firm operates mainly, with this mode of growth itself being a function of the international regime, i.e., the international inclusion modalities of the economy in question. If we ignore for the moment the case of so-called "rent" and "shortage" modes that correspond respectively to the situations in certain developing or former socialist countries, industrialised economies can be characterized based on two main criteria:

- The more or less egalitarian nature of their income distribution, which is a de facto reference to Hall and Soskice's (2001) VOC opposition between Coordinated Market Economies (CME) and Liberal Market Economies (LME);
- The growth driver: internal demand versus exports (price or non-price competitiveness).

We can see that a profit strategy will be inefficient if it is not in sync with its macro-economic context. Correspondence (external relevance) is a necessary but insufficient condition, however. The firm must also be capable of implementing its relevant strategy. This harks back to issues relating to the internal coherence creation process.

Figure 5 – The productive model and its environment



Source: Boyer, Freyssenet (2000)

The authors apprehend three structuring elements in regards to this second condition:

- The *product policy*, explaining the profit strategy the firm has adopted;
- The *productive organisation* (management of design, sourcing, production methods, distribution, etc.) that the firm has developed to implement its strategy;
- The *employment relationship* negotiated with employees and their organisations.

Attempts to achieve complementarity between these three components are rooted in the establishment of a *company government compromise* between the various stakeholders: shareholders, employees, creditors, bankers, distributors, suppliers, subcontractors, etc. The establishment of this compromise is the most complex element driving a productive model.

2.1.1.2. Applying the model in sectors other than the car industry

This analytical grid was designed as part of a comparative analysis undertaken by GERPISA international network members focused on the trajectories that the world's carmakers had pursued over 1973-1993 (Freyssenet, Mair, Shimizu, Volpato, 1998). It was extended via an exploration of the history of the auto industry across the whole of the 20th century (Boyer,

Freysenet, 2002). Robert Boyer and Michel Freysenet have deduced from their studies that in the recent period only three productive models corresponding to different profit strategies can be identified (Table 3).

Table 3 – Automobile group productive models over the period 1973-93

Profit strategy	Productive model	Automobile group
Volume and diversity	Sloanian	Volkswagen
Permanent reduction of costs	Toyotian	Toyota
Innovation and flexibility	Hondian	Honda

Source: Boyer, Freysenet, 2000

In a study delving further into the history of the car industry, Robert Boyer and Michel Freysenet identified three other models: Fordian, Taylorian and Woollardian. The former was based on a clearly identifiable “volume” strategy, notably at Ford Motor Company in the 1910s - whereas the two others are associated with the “diversity and flexibility” strategy that dominated the British auto industry between WWI and WWII.

The three main conclusions of these studies merit further emphasis:

- Initially, *attempts to achieve some form of coherence remained the exception, with crises constituting the rule*. This is because only three out of the 16 firms under study remained profitable over the long run. Now, this model can only exist if its two profitability conditions are satisfied. And yet, the firms that found themselves in difficulty did not disappear. What this means is that the grid does not offer the kind of functionalist reading that will enable a selection of efficient models: it is the process of seeking coherence, grounded in trial and error and experimentation and focused on institutional complementarity, which is central in this analysis.
- Secondly, *the Japanese model never existed* (Freysenet, 2001). On one hand, many Japanese carmakers (starting with Nissan, which adopted a “volume and diversity” strategy) ended up displaying a great deal of fragility over the course of the 1990s, at a time when they were being forced to arrange alliances. Note also the problems faced by Mitsubishi and Mazda. As for the country’s two *success stories*, Honda and Toyota, closer examination reveals major differences and incompatibilities between them, concerning their strategies but also their efforts to achieve a semblance of internal coherence.
- Thirdly, *just like the Japanese firm, the American firm* (Regulation Theory’s “Fordism” variant) *has no intrinsic meaning*: Taylorism, Fordism and Sloanism correspond to different models in macro-economic environments that ultimately become quite similar, especially when their government compromises are based on other foundations.

This grid underlines the limitations of a Regulation Theory approach to the firm, and more generally of historical overviews that tend to ignore synchronic diversity and highlight a reading highlighting changes in those forms that are deemed to be historically dominant (see above). Nevertheless, it does evoke serious points of debate, especially when one tries to apply it in sectors other than the car industry.

2.1.2. Issues for debate

2.1.2.1. Profit sources and strategies

Profit sources and strategies comprise an initial set of debate topics. Given the financialisation by which many economies have been characterized in recent years, we can already ask whether finance per se constitutes a source of profit. Still using the car industry as an

example, more than half of all profits made in the 1990s by the two US carmakers (Ford and GM) came from their financial subsidiaries (Froud et al., 2002). The Europeans were also part of this trend, with captive finance representing 20% of Renault and PSA Peugeot Citroën's profits in 2004. In a sense, General Electric (GE) has been viewed as an efficient "business model" (Froud, et alii, 2005), inspiring other firms like the Italian Fiat. This is not a new element in the sense that financial activity has long been part (although probably to a less extent in the 1970s and 1980s) of groups' profitability, notably in the auto sector - another reason to include this dimension in firms' generic profit sources.

Profit sources are generally primarily defined in terms of a manufacturing activity, and relational aspects are ignored. Yet this latter dimension is crucial for service activities where resources are co-produced within the framework of an interaction between the supplier and the customer (du Tertre, 2002). Still within the confines of the auto industry, we can see that carmakers have focused largely on service activities (maintenance, repairs, insurance, rentals, etc.) in their attempts to offset lower profit margins on new car sales, a consequence of the fierce competition in this market. But aren't such sources of profitability extraneous to the analytical alphabet we are being offered? The grid's transposition to service activities raises a number of problems (Lomba, 2002; Coris, 2005).

This problems we have in integrating those profit sources that can occur within a framework defined by the relationship between a firm and its clients, suppliers (i.e., the quasi-partner rent, c.f., Asanuma, 1989) or competitors (leadership, in Beffa's sense of the term, 2003) indicates that the analytical alphabet orienting these profit sources is incomplete. This limits the grid's potential applicability to certain activities. Furthermore, one of these profit sources is idiosyncratic, to wit the "permanent reduction of costs", defined in an explicit reference to Toyota's strategy of constantly seeking to squeeze costs whilst keeping volumes constant, irrespective of the environment or situation. There are questions about this profit source/strategy's degree of generality or reproducibility in other sectors of activity. One possible avenue would be to opt for another characterisation, "fluidity, volume and diversity", an approach viewing fluidity as a source of profit, similar to way in which leadership is treated in Jean-Louis Beffa's formulation. These are three additional profit sources, and they are at odds with the foundations underlying the model's grammar.

2.1.2.2. Dynamics of the company government compromise

A second point of discussion is the company government compromise. Clearly, the idea of decomposing the coherence creation dynamics into three components appears to be based on solid foundations: the relationship to the product market (with the product policy acting to reveal the profit strategy) infers a certain type of productive organisation, one that is in phase with a specified employment relationship. This approach would appear to be transposable, without any major obstacles, to other industrial sectors, where it could be fertile.

Nevertheless, the notion does require fine tuning given that the dynamics of the compromise have yet to be specified (Pardi, 2004a). For example, who are its actors? Should a dominant position be allocated to the employment relationship, i.e., the relationship between the firm and its employees? What about finance and relations with shareholders, be they banks or stock market investors? How should this compromise be established, and how should its stability be defined or its development studied? At what level should it be apprehended? At first glance, the productive models grid appears to stress an approach that highlights the domestic level, in the firm's economy of origin. Yet due to productive internationalisation, firms are now being asked to transfer their domestic model to transplant factories, where they are supposed to hybridise it (Boyer, Charron, Jürgens, Tolliday, 1998).

What this infers is the adaptation of product policy and productive organisation to local contexts, and the negotiation of specific employment relationships. Hence the establishment

of a new government compromise at the level of the transplant unit (Pardi, 2004b). At an extreme, this could lead to a reconfiguration of the original model, something that at the very least indicates the need to set up a number of micro-compromises, and to account for intra-firm diversity.

One of the recent internationalisation phase's other characteristics is the rise of alliances and mergers/acquisitions (Volpato, 2004). The merger between Daimler and Chrysler's, Jaguar and Volvo's takeover by Ford or the alliance between Nissan and of Renault are all examples of rapprochements between firms with radically different, and even incompatible, profit strategies (Boyer, Freyssenet, 2000b). Can a diversity of this kind last?

Given that firms have become veritable multi/transnationals in many sectors, it is hard to link the many different spatial levels at which a productive model's internal coherence can be apprehended, especially since firms' internationalisation strategies, in the auto industry at least (Freyssenet, Lung, 2003) are more closely tied to regionalisation phenomena than they are to globalisation. This dimension is just as portentous when the aim is to evaluate the external conditions that determine a profit strategy's degree of relevance.

2.1.2.3. External conditions of relevance

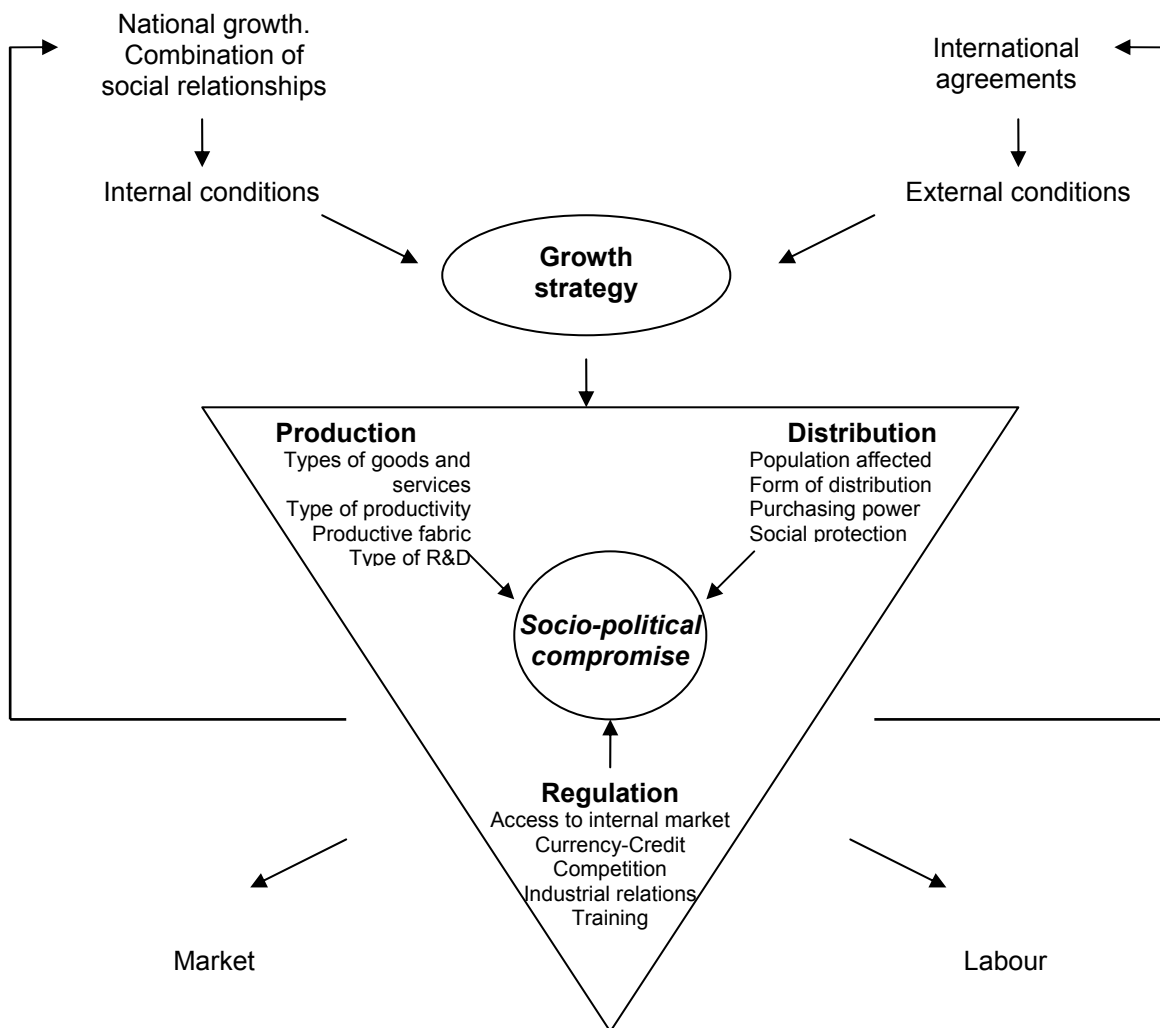
Part of the discussion at this level revolves around two basic uncertainties (even though other dimensions can be envisaged), notably financial uncertainty and technological uncertainty. The strength of the argument about these two uncertainties derives from its Marxian origins, which basically characterize the capitalist mode of production as a market-oriented economy (the "social validation of private labour" to use Marx's terms) and as an economy where the labour force itself constitutes a commodity. Staying within the same Marxist-inspired theoretical framework, this approach neglects the relationships between various forms of capital (notably between financial and productive capital), links that are arranged against a backdrop of financial uncertainty (see Boyer, 2004; Montalban, 2005a). Once again, the financial dimension seems to have been poorly integrated into the current version of the productive models analytical grid. Nor does it account for the development of productive forces that have supposedly led to a shift into a new phase of cognitive capitalism (Azais, Corsani, Dieuaide, 2003), thus translating the context of a regime of permanent innovation (Hatchuel, Le Masson, Weil, 2002)⁵.

Above and beyond this one dimension, what is at stake is our use of growth and income distribution modes to understand an external environment. Transpositions of this grid into other sectors, like steel (Lomba, 2005), aeronautics (Frigant, Talbot, 2005), IT (Coris, 2005) or pharmaceuticals (Montalban, 2005a) have highlighted the difficulty of using it as a gateway, notably to study issues of relevance within a particular industry. Although the grid seems suitable for industries that produce goods targeting end users, or for so-called B-2-C (business-to-consumer) industries like automobiles or agribusiness (Jullien, 2004b), problems arise when it is applied to other activities, notably industries that produce capital or intermediary goods, or else corporate services (B-2-B, business-to-business). It is hard to devise a direct link between market changes in these other industries and their modes of growth (internal demand vs. exports), and even more difficult to tie this to income distribution modes (whether coordinated or liberal). This category also neglects a few dimensions that are important in helping us to understand operative dynamics and strategies, notably where State intervention is involved (Ramirez, 2004a, 2004b), whether this covers intellectual property rights regime (Coris, 2005), education or public demand, especially military spending.

⁵ As such, this is an approach that stresses analyses found in Book 1 of Marx's *Das Kapital* (1867) whilst neglecting the forms of competition studied in Book III.

In a recent contribution, Michel Freyssenet (2005) outlined a research programme aimed at extending the GERPISA approach by applying to economies certain analytical tools that were previously used to study firms. This has involved reconstituting the main economies' historical trajectories to devise a conceptualisation capable of accounting for the distinction between a strategy and a model. The idea here is that a country's *growth strategy* is based on one of four sources: consumption; investment; exports; and predation. It is also said to be implemented through *growth models* that are the fruit of socio-political compromises. Figure 6 replaces the upper section of the productive models grid (Figure 5), highlighting the relevance of a firm's profit strategy to the growth model of the national economy in which it finds itself.

Figure 6 – Strategy and model of growth



Source : Freyssenet, 2005

The method proposed (described as “GERPISA 2”) has some real strengths, notably insofar as its approach is both historical and relatively exhaustive in nature. It raises real questions about the sources of growth and compromises that are established within this framework. However, it seems hard to justify advancing by means of an analogy between the firm level (company government compromise to implement a profit strategy) and the national level (socio-political compromise based on a mode of growth). Whereas the “GERPISA 1” approach passed over certain institutional aspects that were meaningful in sectors other than the auto industry, the new version seems to cover all fields, without ranking the various domains.

In the absence of a historical approach that will allow us to reconstitute the different socio-economic models' emergence⁶, we will limit ourselves to an analysis of the synchronic variety of the contemporary forms of capitalism that create the environment in which firms operate, by applying an approach delineated in terms of social systems of innovation and production (Amable, Barré, Boyer, 1997; Amable, 2003) or of socio-economic models (Amable, 2005).

2.2. The search for a micro/meso/macro link

It is within this framework that we will indicate a few avenues for an approach that could help to link up our three levels of analysis – the firm, the industry and the macro-economic level (nation and/or region). These are avenues that the ESEMK project will be exploring over next few months. We begin by discussing the constraints that the institutional environment characterizing the different socio-economic models imposes upon firms' strategies. This involves crossing two analytical grids: the productive models grid at a microeconomic level; and the SSIP grid at a macro-economic level. The explicit introduction of an intermediary level (i.e., the sector) raises other types of question that can be studied later. Lastly, consideration will be given to the reciprocal interactions that go from the micro to the macro levels, the purpose being to envisage institutional change's endogenous dynamics.

2.2.1. Micro/macro compatibility

2.2.1.1. Crossing the analytical grids

The objective at this stage is to amend the productive models grid and replace a “mode of growth and income distribution” approach (called a “growth model” in its latest formulation) with a SSIP approach so as to apprehend the productive models' external relevance as well as their creation of internal coherence. Here we discuss both:

- The compatibility between a firm's profit strategy and its macro-institutional environment; and
- The possibility of creating a semblance of coherence between all of the components comprising a productive model, whilst negotiating a government compromise enabling the strategy's implementation, given the institutional constraints that weigh upon actors.

It is hard to conceive of a quality strategy that is not based on an efficient vocational training system, and that lacks a wage-labour nexus in which labour unions have acquired a strong bargaining position. Inversely, where professional unions are weak and levels of education minimal, what we find are conditions conducive to the diffusion of a Fordian model.

As such, what we should be scrutinising is how the institutional constraints that are specific to any given form of capitalism will influence each of our productive models. In Bruno Amable's analysis (2003), five *institutional domains* are used to describe SSIP: competition in the product market; the wage-labour nexus; the financial sector; social protection; and the educational system. These domains intervene to a greater or lesser extent to delineate the possibilities available to the various components of the productive model (cf. Table 4).

⁶ There is no doubt that this is a very interesting approach. It could constitute an extension of the present project since it requires the mobilisation of a wide array of researchers.

Table 4 – How institutional constraints weigh upon productive models' components

SSIP	Product market competition	Financial sector	Wage-labour nexus	Social protection	Education
Productive model					
Profit strategy					
Product policy					
Productive organisation					
Employment relationships					
Company Government Compromise					

* Each square's degree of greyness represents the institutional domains' constrictive strength

Clearly, forms of competition in the product market have a strong influence on firms' profit strategies and product policies. They also weigh upon the productive organisation and the employment relationship, hence on the government compromise. Indeed, strong competitive rivalries are associated with market segmentation, due to the interplay between product differentiation and the search for innovation in firms' attempts to rebuild profit niches. This infers an adoption of organisational forms enabling flexibility or adaptability. Competitive pressures also weigh upon the employment relationships by limiting the room for negotiations, and this affects the search for a company government compromise. One manifest illustration is the recent phase in the economies' internationalisation, which has translated into an opening of markets, strong competitive pressures (Conway et al., 2005) and "financial globalisation" (Chesnais, 2004). These developments have to a large extent weakened employees' bargaining position and strengthened shareholders.

The company government compromise feels the brunt of the major constraints associated with the structuring of a financial system. It is easy to see how in a financial market-drive economy, shareholders' behaviour and influence on executives are not the same as in a configuration where stable managerial power is guaranteed by the alliance between banks and industry. This influence of the financial sphere weighs upon all of a firm's components, thus on the employment relationship due to the balance of power created between shareholders and employees. It also has an indirect effect on the productive organisation (i.e., pressure exerted by institutional investors to get firms to refocus on their core business and therefore to outsource activities considered non-essential, or to spin them off if the firm has several core businesses). Lastly, it weighs upon the product policy since financial norms of this ilk impact firms' strategic choices, notably their search for new profit sources in areas like finance or services. All is which is tantamount to saying that the relevance of a profit strategy is largely determined by the characteristics of this institutional domain.

The same applies to the different dimensions of the wage-labour nexus, which refers explicitly to one of the two fundamental uncertainties, helping us to apprehend the external relevance of a particular profit strategy (see above) and constituting a major component in the establishment of a company government compromise. This institutional domain exerts its strongest influence on the employment relationship inasmuch as it is here that the balance of power and (meta-) rules of negotiation (irrespective of the negotiations' degree of

decentralisation, which can vary) are defined at a national level and find a specific breakdown within the firm, or even the unit. Nor should one forget its impact on product policy (particularly issues relating to the employees' demand) and on the productive organisation, notably via a labour flexibility that strongly affects organisational forms.

The two other institutional domains have less of an impact. The forms of social protection can play a major role in the employment relationship, depending on whether such protection is first consolidated at the level of the whole national economy, or else internalised within the firm, and it has an impact on the market in B-2-C industries (indirect income stabilises the households demand). Lastly, questions about the educational system play a not insignificant role in the productive organisation's definition and employment relationship's negotiation.

2.2.1.2. Automotive industry lessons for the productive models

The car industry is the only sector where GERPISA's analytical grid was more or less implemented in its entirety. Returning to Robert Boyer and Michel Freyssenet's findings, we can try to see how the environment in which firms operate, apprehended in SSIP terms, takes the interactions between certain institutional constraints and tries to enable (or inversely, to restrict) profit strategies and the productive models that are associated with them⁷. Starting out with a reasoning grounded in the different elements found in the previous table, we come up with the following findings (cf. Table 5).

Social Democratic capitalism would appear at first glance to create a context that is conducive to "quality" and "volume and diversity" strategies, what with the existence of a qualified workforce, the strong role devolved to unions and, inversely, shareholders' long-term stability (not to forget the importance of indirect wages that level out disparities in remuneration and stabilise incomes). At the same time, these very same characteristics mean that this form is not very conducive to strategies based on strong market polarisation ("diversity and flexibility", "innovation and flexibility" and "volume") despite significant workforce flexibility, inasmuch as this infers a fragmentation of demand and/or a focus on basic models or on niches geared towards extreme social categories. The strong pressures on work organisation that are found in the "volume" and "permanent reduction of costs" strategies (a factor that fluidifies processes and creates greater control over the work organisation), seem scarcely compatible with the autonomy that employees would otherwise enjoy. Encouraged by Northern European economies' degree of international openness, the Swedish carmakers Volvo and Saab have based their strategies on "quality" - even though the increased importance of economies of scale helped Ford and GM, respectively, to grab these two brands. Despite the importance of exports (70% of total output), small economies' reduced size seems to be a major obstacle to any strategy including volume as a source of profit.

⁷ Theoretically, it is possible to conceive of different productive models that implement one and the same profit strategy. However, in the case of automotive industry history, the only example thereof has been the "diversity and flexibility" strategy (Boyer, Freyssenet, 2000).

Table 5 – Crossing SSIPs and Productive Models

SSIP	Social Democratic capitalism	Liberal Market Capitalism	Mediterranean capitalism	Continental European capitalism	Meso-corporatist Capitalism
Profit strategy / <i>Productive model</i>					
Volume / <i>Fordism</i>	–	+	+	–	+
Diversity and flexibility / <i>Taylorism</i>	–	+	+	–	–
Volume and variety / <i>Sloanism</i>	+	+	–	+	–
Innovation and flexibility / <i>Hondaism</i>	–	+/-	+	+	+
Permanent reduction of costs / <i>Toyotaism</i>	–	–	–	+	+
Quality **	+	–	–	+	+

* the markers “+ / –” correspond to a favourable / unfavourable institutional environment

** Quality is a profit strategy, without a model having been formally identified by the authors, due to the lack of any in-depth studies on top-of-the-range European carmakers.

The opposite applies to *Liberal Market capitalism*, which is conducive to all strategies based on volume (“volume”, “volume and diversity”) but also on “diversity and flexibility”, given labour market fluidity and competitive pressures that lead to a differentiation which causes market segmentation in turn. Reciprocally, “permanent reduction of costs” and “quality” strategies inferring a modicum of long-term stability in employment (so that people can benefit from learning effects) appear inappropriate. The “innovation and flexibility” strategy provides an ambiguous example. Although a very segmented and flexible market seems to lend relevance to this strategy, questions can be raised about its implementation since it assumes a financial autonomy that is difficult to demand in a financial market system. Chrysler’s problems illustrate this ambiguity, with the firm having been incapable of developing a government compromise allowing it to implement such a strategy durably, culminating in its takeover by the German, Daimler. The “volume and diversity” strategy’s two signature firms (Ford and General Motors) are also the ones who invested heavily in captive finance, adding this as a new source of profit. Rover’s annihilation in England sanctions the abandonment of its “diversity and flexibility” strategy, translating the British carmaker’s inability to stabilise its government compromise.

Because of its financial structure, “*Mediterranean*” capitalism does not suffer from this shortcoming. As a result, it is free to pursue “innovation and flexibility” or “diversity and flexibility” strategies. The latter seems more suitable than “volume and diversity”, since the market here is relatively polarised between two extremes, creating room for a “volume” strategy geared towards entry-level vehicles. Neither a “permanent reduction of costs” nor “quality” strategy would appear to be in sync with the characteristics of the wage-labour nexus and educational systems typifying this construct – although they do seem to be present, at least to a certain extent, in Italy, where one extreme combines small series, top-of-the-range specialists like Ferrari and Maserati with engineering firms (thereby illustrating the automobile market’s propensity towards fragmentation), whilst the other brings Fiat (unable to abandon its seminal Fordian model to transmogrify into a Sloanian model multi-brand group) together, at an intermediary level, with Alfa Romeo, which was incapable of consolidating its “quality” strategy positioning. The remarkable breakthrough of Spain, which in three decades became Europe’s third largest car producing country, is largely (but not entirely, c.f., Layan, 2004) a volume-based phenomenon, as witnessed by its specialisation in entry-level cars and small vans (light commercial vehicles).

Continental European capitalism's profile is the opposite of Liberal Market capitalism. The market and wage-labour nexus characteristics found here do not create conditions conducive to a "volume" strategy (except in the context of an initial equipment market) or to "diversity and flexibility". The relatively egalitarian distribution and largely socialised nature of incomes in this configuration means that the "volume and variety" strategy predominates, with all European carmakers being one way or the other present in the market's four main segments (lower range, midrange, upper midrange, top-of-the-range). With these economies' openness (a reflection of the market's regional integration), abundant middle classes and highly skilled workforce, conditions are rife for the development of top-of-the-range and niche vehicles, and this enhances the relevance of "quality" and "innovation and flexibility" strategies. Moreover, institutional shareholders wield less influence, something that encourages the establishment of compromises conducive to the latter strategy's implementation. Finally, these kinds of compromises can ostensibly be negotiated at a local level so that a "permanent reduction of costs" can be obtained. With its numerous brands (Audi, Seat, Skoda, Volkswagen, Bentley and Lamborghini) and platform strategy, VW is the flag bearer of the Sloanian model (Boyer, Freyssenet, 2000a), followed by PSA Peugeot-Citroën and not forgetting Ford and GM's European subsidiaries, which have developed Sloanian strategies on a global scale (Bordenave, Lung, 2003). Brands like BMW and Mercedes, and even Porsche, are synonymous with German quality and dominate the market for top-of-the-range cars, even if recent changes (downscaling of BMW Series 3 and 1 or Mercedes Classes A and B, DaimlerChrysler merger, small car makes like Mini and Smart) indicate a shift towards a "volume and variety" strategy. Lastly, with the monoboxes Renault has launched (Space, Twingo, and Scenic) it has become one of the world's more innovative carmakers – a strategy enabled by the stable compromise it established during the 1990s.

As for *meso-corporatist capitalism*⁸ this is characterized by a highly decentralised management of the wage-labour nexus in large firms. As a result, there is room for a number of negotiated configurations: "volume" where an initial equipment market is involved, but also "quality" at the top-of-the-range or else a "permanent reduction of costs" when the whole of the product range is in question. Strong job security and limited external flexibility means that the "diversity and flexibility" strategy is not very operative here - unlike the "innovation and flexibility" strategy, which in order to occupy profitable niches in an increasingly segmented automobile market mobilises internal flexibility resources. This extreme segmentation makes the "volume and diversity" strategy inefficient due to the fact that consumers expect specifications that do not mesh with a commonalisation system. In Japan, for example, besides from Honda and Toyota (the two firms to have founded an original productive model), the most notable events are Nissan's problems in implementing a "volume and diversity" strategy – similar to the ones Korean carmakers faced when trying to abandon a "volume" strategy in favour of "volume and diversity".

Although grid crossing of this kind seems to lead to interesting results at an analytical level, two problems do remain. On one hand, there are questions about the robustness of this method and stability of its outcomes, as it is not at all certain that the same reasoning, when applied by other actors, would lead to an identical interpretation, given the residual areas of ambiguity in the interactions between institutional constraints (although such grey areas may well be a breeding ground for the emergence of new configurations [see above]). On the other hand, the grids should also be crossed in sectors other than the car industry.

⁸ Called *Asian capitalism* in Bruno Amable's writings. "Meso-corporatist" (as it is sometimes called) seems preferable to avoid any confusion: the term "Asian capitalism" is ambiguous as we can identify very different types of socio-economic models in Asia (India, China being different from Japan and South Korea which are the main industrialised countries for this configuration).. But this would be a ASEM project...

2.2.2. The meso-economic dimension

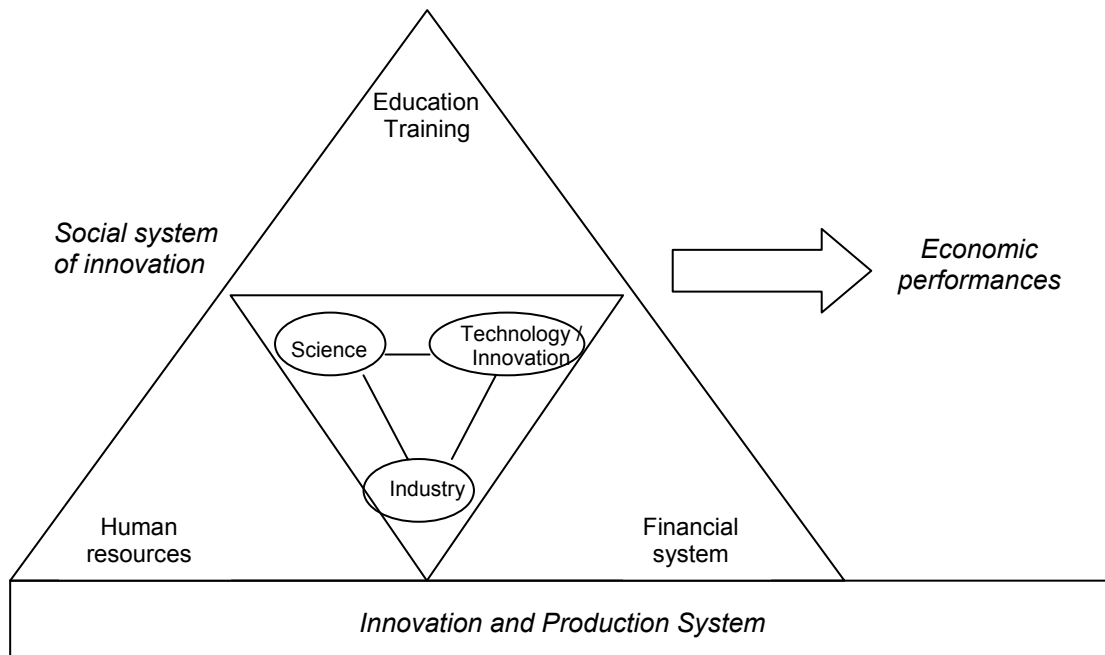
2.2.2.1. Sectorial approaches in the two analytical grids

Despite the lack of any firm-focused analysis in a SSIP-based approach, the construct is explicit in its incorporation of the sectorial level insofar as it does account for the way in which institutional constraints affect different industries' dynamics (macro-meso determinism). De facto, this does not involve talking about industries per se but more exactly about the way in which a socio-economic model impacts the technological innovation process by means of the interactions between Science, Technology and Industry (STI).

The STI system was central in the initial version of the SSIP analytical grid (Amable, Barré, Boyer, 1997), forming the core thereof (cf. Figure 7). In this grid's second version (Amable, 2003), technology is not used to characterize the types of capitalism – what is stressed is the way that institutional arrangements work downstream to create or else to block opportunities for technological development, using economies' scientific competencies as a launchpad for their actions. Despite being built on varying methodologies, the two grids do converge as their findings focus on the relationship between different types of capitalism, on one hand, and scientific, technological and commercial specialisation, on the other (with each socio-economic model generating a comparative institutional advantage). For example, Liberal Market capitalism is conducive to research in general biology, and to its knock-on effects in biotechnology, because of the close ties between the academic world and industry, the availability of venture capital and the presence of stock option-based remuneration systems. Marked by the strong presence of the State, Continental European capitalism is geared more towards large technological programmes (hence Airbus and Ariane's performances in the aeronautics and space sectors); Meso-corporatist capitalism is said to be more predisposed towards electronics technologies and mechanical industries, etc.

Many studies (Pavitt, 1984; Malerba, Orsenigo, 1996, for a summary, see Bergouignan, 2005) have highlighted innovation dynamics' sectorial diversity. In the SSIP approach, it is very indirectly (via an analysis of institutional constraints' effects on the interactions between science, technology and industry) that a particular form of capitalism is said to create a specialisation covering a whole range of activities. Such an approach has two limitations: on one hand, the institutional dynamics that are specific to each sector are excluded from analysis, here due to the univocal determinism of the macro towards the meso level; on the other, intra-industrial heterogeneity is neglected since the analysis ignores firms' organisation. One could imagine, at least theoretically, specialisations that converge in identical sectors whilst being part of productive models that diverge from one economy to the next, or from one specialisation to the next in the same country, thus translating the predominance of a given type of model (cf. insert). Hence the approach needs to be able to simultaneously reflect upon diverse forms of capitalism, sectors and productive models.

Figure 7 – Social Systems of Innovation and Production (SSIP1)



Source : Amable, Barré, Boyer, 1997, p.127

An approach expressed in productive model terms will view a sector as a space of competitive rivalry (in a manner redolent of Porter, 1980). When apprehending a profit strategy, emphasis will be placed on the goods market, and discussions about the relevance of the strategy and the company government compromise will focus almost exclusively on carmakers. Yet the car industry's performance is not limited to these actors alone, even if their position is a strategic one. The whole of a *filière*, value chain or *automotive system* must be apprehended to consider the systemic nature of competitiveness, what has been developed in the CoCKEAS project (Lung, 2003). By ignoring vertical relations, notably sourcing relations, a productive model approach will apprehend an industry as all of the firms that are in direct competition in a market, to wit, the car market.

These sectorial norms of production and exchange are necessarily multiple since otherwise the productive models would lack diversity. This is generated endogenously (endometabolism) since the competitive process itself creates conditions favourable to the emergence of alternative or complementary productive models (Boyer, Freyssenet, 2002). Because of the first mover advantage, it is more efficient to adopt an original profit strategy rather than to imitate the insider firms' one, as long as this new profit strategy is relevant and the firm can ensure the strategy's coherence with its various components. It was to transcend the Fordian model that had proved so efficient in a "volume" strategy that Alfred Sloan developed a new strategy on behalf of General Motor, one that integrated diversity and applied adapted organisational changes (multidivisional structures, management control, etc.). The "innovation and flexibility" strategy, and the Hondian model in general, were the only ways for the model's eponymous carmaker to compete with the firms (Nissan and Toyota) that already had solid positions in its domestic market. This also explains its immediate orientation towards external markets (exports).

Insert: Complex combinations of the three levels: productive model, sector, SSIP

If we try to explain economies' international specialisation by the interconnected diversity of the institutional arrangements characterizing the three levels of analysis, combining them will create complex configurations, at least at a theoretical level. Consider various industrial sectors S (a, b, c, ...) that can be an object of specialisation for economies A, B or C. The firms epitomising this competitive advantage in a particular sector might have adopted diversified productive models MP1, MP2, MP3. The economies belong to different socio-economic models SSIP I, SSIP II, etc.

First example

One and the same international specialisation in a sector (Sa) in three economies A, B and C can correspond to different productive models that are part of different socio-economic environments - with different productive models, MP1 and MP2 respectively, for economies A and B in one and the same SSIP I type institutional environment, or else another productive model MP3 in another SSIP II type institutional environment for economy C.

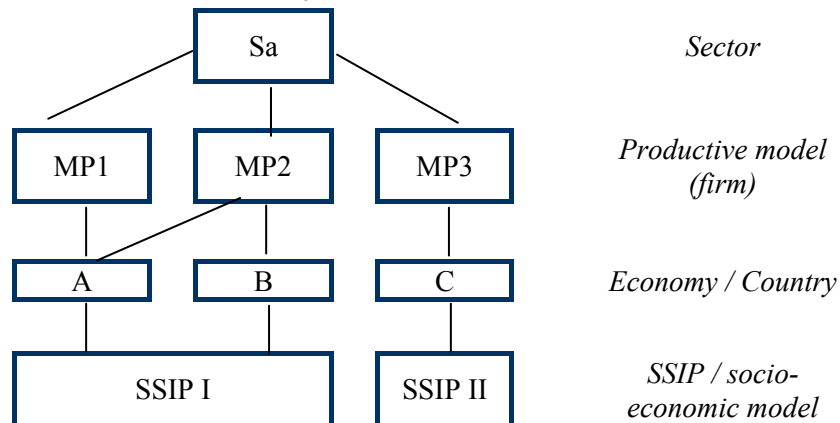
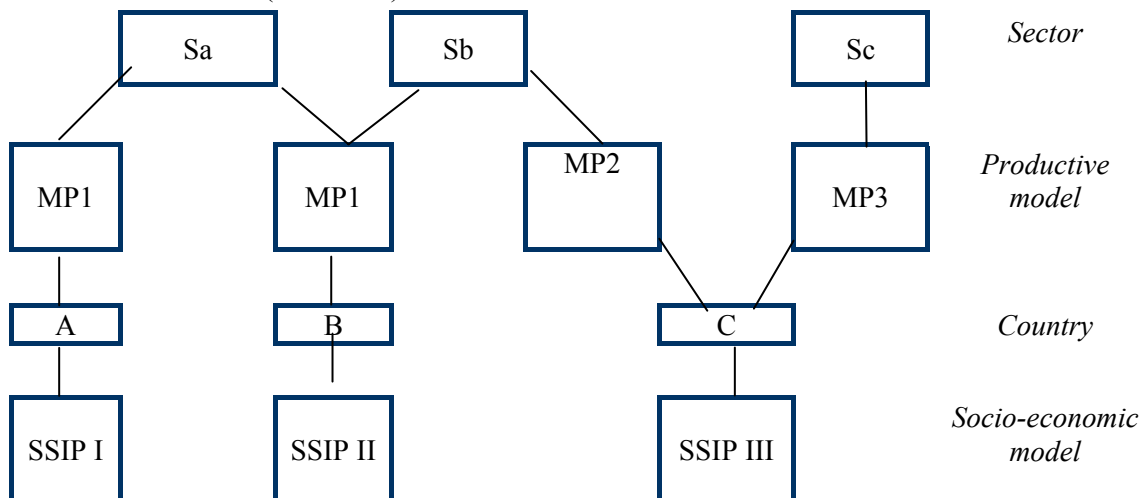


Illustration: The car industry's international competitiveness in Japan (Hondian and Toyotian models) and Germany (Sloanian model and quality strategy) in the 1980s.

Second example

The same industrial specialisation (or Sb) translates the same productive model MP1 in different institutional environments (SSIP I or SSIP II) or else (Sb) another productive model in another institutional environment (economies B and C).

Combining the institutional environment and firms' strategies (SSIP II and MP1 for economy B) will benefit several industries (Sa and Sb).



Illustrations: The "volume and diversity" strategy adopted by VW in Germany and Nissan in Japan in the first instance; but Japan and Korea's car and electronic specialisations cannot be found in Germany in the other.

Conversely, note that this approach totally neglects any process that tries to specify an industry in terms of other industries, since this was not its original objective. At the same time, attempts to transfer this approach from the car industry to other sectors have underlined the need for a better characterisation of such sectors' institutional environment.

2.2.2.2. *An integration that has yet to be built*

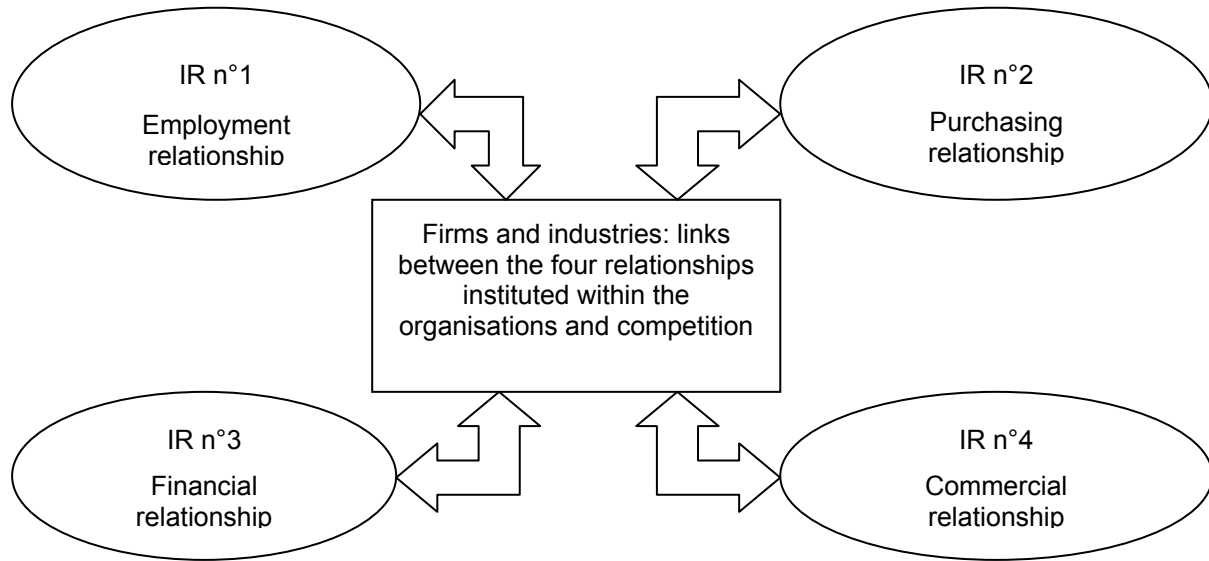
In short, it behoves us to include sectorial approaches of an institutionalist inspiration, like Regulation School studies, notably those undertaken by the Régulation Secteur Territoires Group. These studies apprehend the sectorial level as “a complex social construct for the productive sphere, historically identifiable [...], where specific *institutional mechanisms* are deployed” (Bartoli, Boulet, 1990, quoted by du Tertre, 1995, p.313-4). We find the same problematic identification of an industry's institutional dynamics in studies by Jullien (2004a, Jullien, Smith, 2005), who offers an analytical framework where the sector is apprehended “as a stabilised form for the creation of coherence between four fundamentally instituted relationships (4IR) corresponding to the relations firms in a given sector entertain with four categories of resource providers they coordinate in their midst: employees, financiers, suppliers and clients” (cf. Figure 8).

We can see right away that within one and the same type of SSIP, configurations of these 4RIs will assume different forms depending on the sector involved (i.e., automobile as opposed to aeronautics, textiles or agribusiness), even if each of these fundamental relationships is being instituted in a way that reflects the strategies being pursued by firms in the branch, or the constraints and opportunities its institutional environment offers. There is an immediate link between the 4IR and SSIP analytical grids, translating the direct influence that the different institutional domains have on three of the relationships underlying the sector's dynamics: the employment relationship; the funding relationship; and the commercial relationship. But the determinism is not particularly strict at this juncture, since the sector is an intermediary space marked by the establishment of a specific socio-economic compromise between actors, as exemplified by branch agreements on wages, arrangements relating to competition dynamics (a logic rooted in both conflict and cooperation) or financial standards accepted by firms and by analysts, bankers and even public funding providers. This kind of compromise can also be found in the sourcing relationships, notably in the norms governing client-supplier relations. Absent per se in our two grids (SSIP and MP), even if a trace thereof subsists in some components or institutional domains, these relationships play a key role in sectorial dynamics.

If we use this analytical grid to integrate the intermediary (sectorial) level, we will have to explain how the organisation of vertical relationships affects the dynamics of the other two levels. However, this grid has only been used to think about the singularity of certain sectorial logics⁹ (Jullien, 2004a; Jullien, Smith, 2005) and up until now it has not offered the kind of generality that would allow us to reflect upon a typology of sectorial configurations such as the one we find in other meso-economic approaches and in other grids being used at a micro or macro level (Montalban, 2005b). In addition, incorporating the sectorial level means that we can transcend North's distinction between organisations and institutions, which had seemed legitimate at the micro and macro levels. This helps to expand the institutional construct in an approach that is more geared towards institutional change (Aoki, 2001; Amable, 2003).

⁹ Notably developments linked to the redefinition of automobile distribution and services, and PGI in Europe.

Figure 8 – Industry as a mode for linking four fundamental instituted relationships (4IR)



Source : Bernard Jullien (2004)

The grid is not so much designed to analyse the competitive process per se as it is to apprehend the dynamics of institutional change through the emergence (or non-emergence) of an industry; its development; and mutations and crises. By so doing, it highlights an approach revolving around the construction process, and around the break-up of the various actors' existing compromises. In the emergence of an industry, there is a long process of "trial and error", before relationships can be instituted between the actors participating in a finalised activity (the productive project) and also before a set of shared representations can develop concomitantly, starting with an identification of the industry itself and conceivably leading to a constitution of formal institutions (like professional associations or labour unions). It remains that this configuration, which is likely to emerge through the establishment of a compromise consolidating whatever relationships have been instituted (and by ensuring that these relationships are coherent and interconnected) is condemned because of inter-actor interactions to constant criticism, due to the ongoing transgression (hence renegotiation or betrayal) of these relationships. New configurations can arise, overturning those relationships that have been instituted (hence their linkage), without raising doubt about the perimeters of the industry in question. In other circumstances, this can happen per se and also due to the industry's connections to other sectors. What results are deeper restructurings, at both the organisational and institutional levels, due to the fact that these changes are likely to lead to transformations at a macro-social level. Examples include the rising power of component makers (destabilisation of the purchasing relationship), the restructuring of the distribution function and positions taken in the service sector (going as far as mobility services), all events that could be harbingers of a reconfiguration of the auto industry.

2.2.3. From micro-change to institutional change: hybridisation and contamination

There is no strict macro or meso determinism towards the micro-economic level: the rules are susceptible to different interpretations revealing the ambiguities of the institutions involved. Moreover, actors are constantly trying to ensure a modicum of coherence amongst these various components. In short, what we have here are interstices, spaces of creation where a local emergence can be born out of the hybridisation of older forms (Boyer, 1998, 2004b)

with new configurations. These are likely to be diffused throughout the socio-economic system and therefore, by contamination, to produce institutional change at a global level.

2.2.3.1 The hybridisation of models

A productive model affirms itself in its external relevance and internal coherence in one or the other type of socio-economic environment. It necessarily emerges within a given institutional architecture (SSIP) that constitutes a fertile breeding ground for it. At the same time, internationalisation leads to its diffusion in other environments, either because of other firms' attempts to imitate the strategy, practices or models, or because of the productive internationalisation of firms epitomising these models (opening of so-called "transplant" factories abroad). Due to internationalisation, the profit strategy can become irrelevant in a different socio-economic environment, and above all, the government compromise underlying the coherence that had been established in a specific national framework will have to be reshaped, especially if the internationalisation move corresponds to a change in SSIP.

Problems in transplanting the Fordian model to another environment have been widely studied, notably Ford's failures in Great Britain (Tolliday, 1998; 2003). In the 1990s, Japanese transplants in Europe, North America or Southeast Asia were what drew analysts' attention (Kumon, Abo, 2004). GERPISA studies contextualised these instances in other countries and at other times (Boyer, Charron, Jürgens, Tolliday, 1998). Note that England has again turned out to be a difficult host country for Toyota, which has found it extremely difficult to establish a durable employment relationship here (Pardi, 2004b).

In actual fact, what this involves is more than a simple adaptation to a different local context. A transplant breaks with an existing coherence, so that starting with the specificities of the new environment's institutional domains, it must be rebuilt so that it can fit in with the new configuration. This reconfiguration can be limited by the search for a functional equivalence for some component or the other - a search that could preserve the unit's coherence whilst allowing the model's other components to remain relatively unchanged. This can also lead to the emergence of a new productive model based on successive trials and errors under this strategy; different components and; the establishment of an original government compromise.

Retracing the slow emergence of the Toyotian model that originally as an application of the Fordian model within a Japanese context (Boyer, 2004b), we can view this as a typical example in which the hybridisation of the Fordian model led to the emergence of a new productive model (cf. Figure 9). This model has experienced a major endogenous crisis and deep-seated changes, notably in its employment relationship, during the 1990s (Shimizu, 1999). Toyota's path epitomised the whole of the Japanese economy, which has experienced ongoing stagnation over the recent period. It may not correspond to a generalisation of the Toyotian model throughout the economy, but there is little doubt that the diffusion of the management methods that Toyota developed (lean production, quality, rapid retooling, etc.) to all Japanese firms changed the institutional environment at a macro-economic level.

Much like the Fordian model, or more exactly, the Sloanian model (another example of creative hybridisation), both of which emerged in Detroit in the 1910-20s and more or less gave birth to 20th century America's regime of accumulation and mode of regulation, the Toyotian model helped to structure Japanese economic growth during the latter half of the 20th century. This effect, counterbalancing the emergence at a micro-economic level of a new productive model that would produce institutional change at a global level, was not at all direct. One can consider that it was mediated by the sectorial level, the one where norms and rules are defined before losing their idiosyncratic character so that they can be diffused throughout the social fabric.

Figure 9 – Hybridisation and institutional change

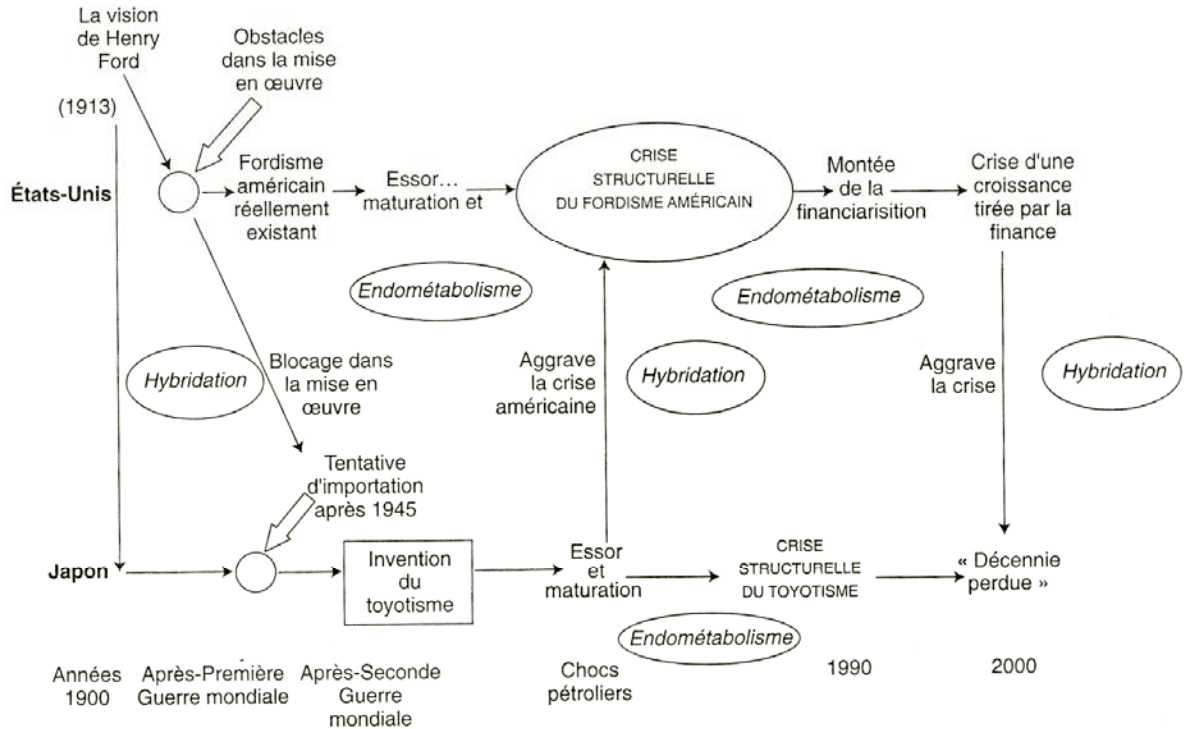


Figure 20 – Le changement institutionnel, comme résultat de l'endométabolisme et de l'hybridation : modèles productifs, modes de régulation aux États-Unis et au Japon

Source : Boyer, 2004b

Another example of such a dynamic of emergence, and diffusion, could be founded in the « new economy business model » which has been progressively organised in the Silicon Valley before to contaminate the ICT industries at the world level, and the macroeconomic institution with the constraint of flexibility and reactivity which have destabilised the wage-labour nexus in several countries (Lazonick, 2005).

2.2.3.2. Contamination

Thus, the Fordian model's emergence in the United States in the early 1910s was the seminal act of the car industry in its avatar as a sector of mass production. This involved a complete remodelling of the employment relationship (assembly line, \$5 a day), purchasing relationship (vertical integration) and commercial relationship (single models and exclusive dealerships). The Sloanian model also introduced a new configuration to this industry. Starting with a new relationship to the marketplace, this would, by contamination, impose a different purchasing relationship (outsourcing); an employment relationship rooted in collective bargaining; and a stock market-drive financial relationship. GM would typify the *Modern Corporation*, i.e., a listed company with dispersed shareholders. This institutionalisation of the auto industry would spread and affect the US's entire operative accumulation regime and mode of regulation, something that Regulation Theory has apprehended as "Fordism" (Aglietta, 1977).

It was only after World War II that Europe would be hit by the diffusion of these methods, although this generated configurations that were very different from the ones found in the US. Neither Renault, Fiat, nor Volvo imitated the Sloanian model, and VW only came on board belatedly. At the same time, the car industry's reconfigurations right after WWII did have a lasting effect on the European economies' trajectories as the institutional arrangements being created reflected local compromises that would subsequently diffuse throughout the social body. Inversely, the car industry's inability to establish a durable wage compromise in Great Britain explains this latter country's recurring difficulties, including the disappearance of its domestic industry (after the closure of Ford's assembly plants).

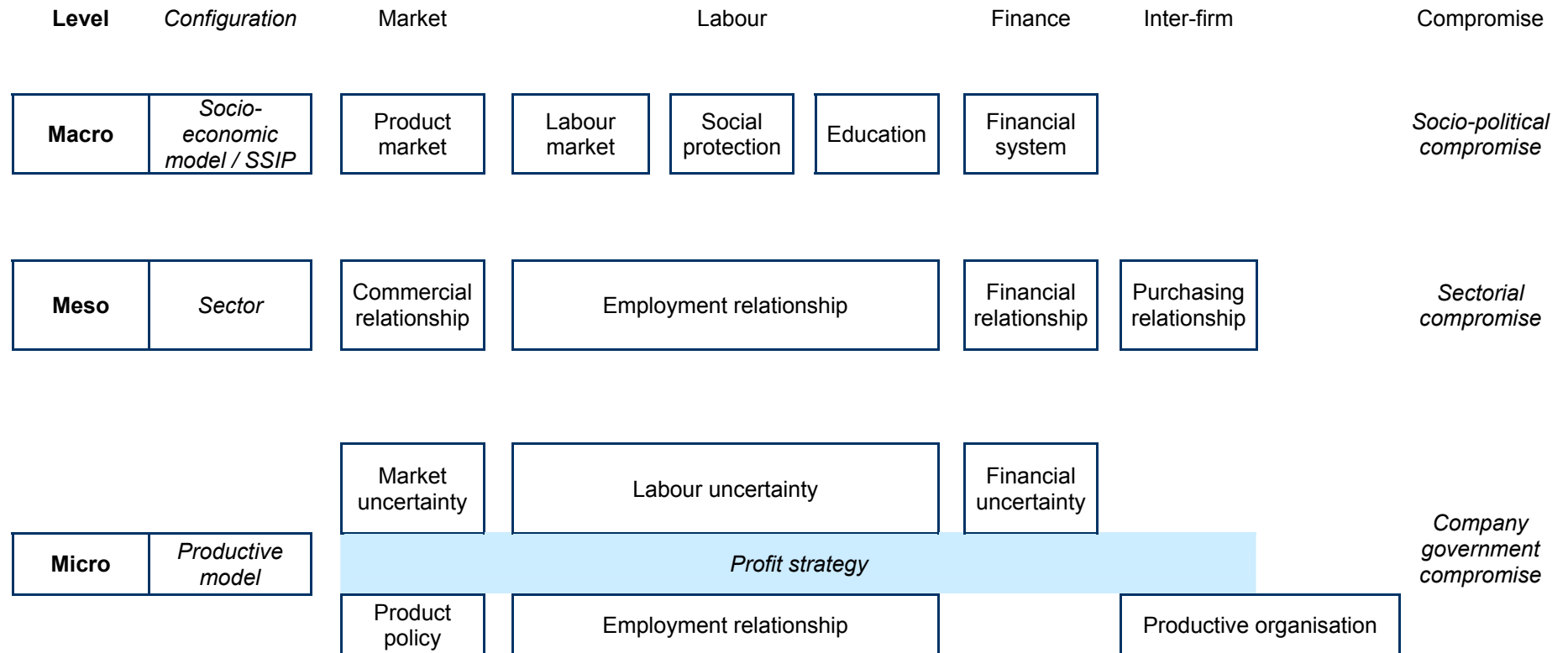
In Japan as in the United States, the Toyotian model's emergence in the 1950s-60s paved the way for an institutionalisation of the Japanese car industry. The examples of South Korea, and even China today, show the extent to which macro-institutional developments can be associated with sectorial changes.

If we incorporate the reconfigurations of an automotive system marked by the rising power of component makers (Delphi, Bosch, etc.), it is easy to see the interconnections between different types of factors. European regional integration and market globalisation have driven the move towards differentiation, thus towards outsourcing by carmakers and component makers' search for threshold effects. At the same time, this has weakened the labour unions, leading to a recomposition of existing compromises and reinforcing the outsourcing drive. Financialisation has amplified this development by causing a separation of activities (spin-offs), thereby consolidating component makers' positions and further weakening employees. This reconfiguration is basically tied to the recomposition of the government compromise, resulting from the dilapidation and sometimes collapse of labour organisations' bargaining positions, and from rising shareholder power. It has also stemmed from changes in the balance of power between carmakers and components makers, and between carmakers and distributors. These changes in the auto industry have served as a model for other sectors, including aeronautics.

Another example is the ICT sectors' institutionalisation and impact on the whole of the economy, something that the notion of "new economy" has tried to translate (Artus, 2001; Boyer, 2002). This is another framework, one with a shortened timeframe. It is dominated by external flexibility, and has tended to force its own norms upon the economy's other sectors.

Thus, it is as a dialectic movement that we should envisage the linkage between the macro and micro levels, mediated by the sectorial (and sometimes even territorial) scale by means of some fairly complex sequencings (Figure 10) that have yet to be fully explored within the new field of endeavour we have opened up, one where institutional change is to be analysed under a framework defined by the diversity paradigm. What we need to specify is how the ostensible correspondences function between the various fields we discover at our three levels of analysis. We can achieve this by sustaining comparative sectorial studies.

Figure 10– Correspondence between different levels of analysis



Conclusion

It is possible to measure the magnitude of the work that remains if we do decide to interlink the different levels at which variety can be analysed (micro, meso and macro). An isomorphic reading would offer us some interesting and relatively stable results. Where the institutional architecture is defined at a national level, there can be one and only one efficient configuration at a firm level. This bijective relationship translates into a narrow correspondence, if not confusion, between institutions and organisations. A sector can be apprehended as a space for the development of technological norms that will find, depending on the macro/micro institutional arrangement in question, a more or less fertile breeding ground. Although this enables us to incorporate the diverse nature of the various forms of capitalism (or of the sectors involved), it is a triptych (institution = macro / technology = meso / organisation = micro) that leaves little room for autonomy in firms' organisational configurations.

Analysis, when expressed in productive model terms, uses this variety at a micro-economic level as its starting point. To specify an analytical grid that can be transposed in sectors other than the car industry, and to interconnect this to the macro-social level, we need to explain which analytical framework is applicable to the industry in question. This multi-level approach constitutes a necessary step for the development of the kind of diversity paradigm that will allow us to specify those dynamics that are endogenous to institutional change. This is the aim of the ESEM project.

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