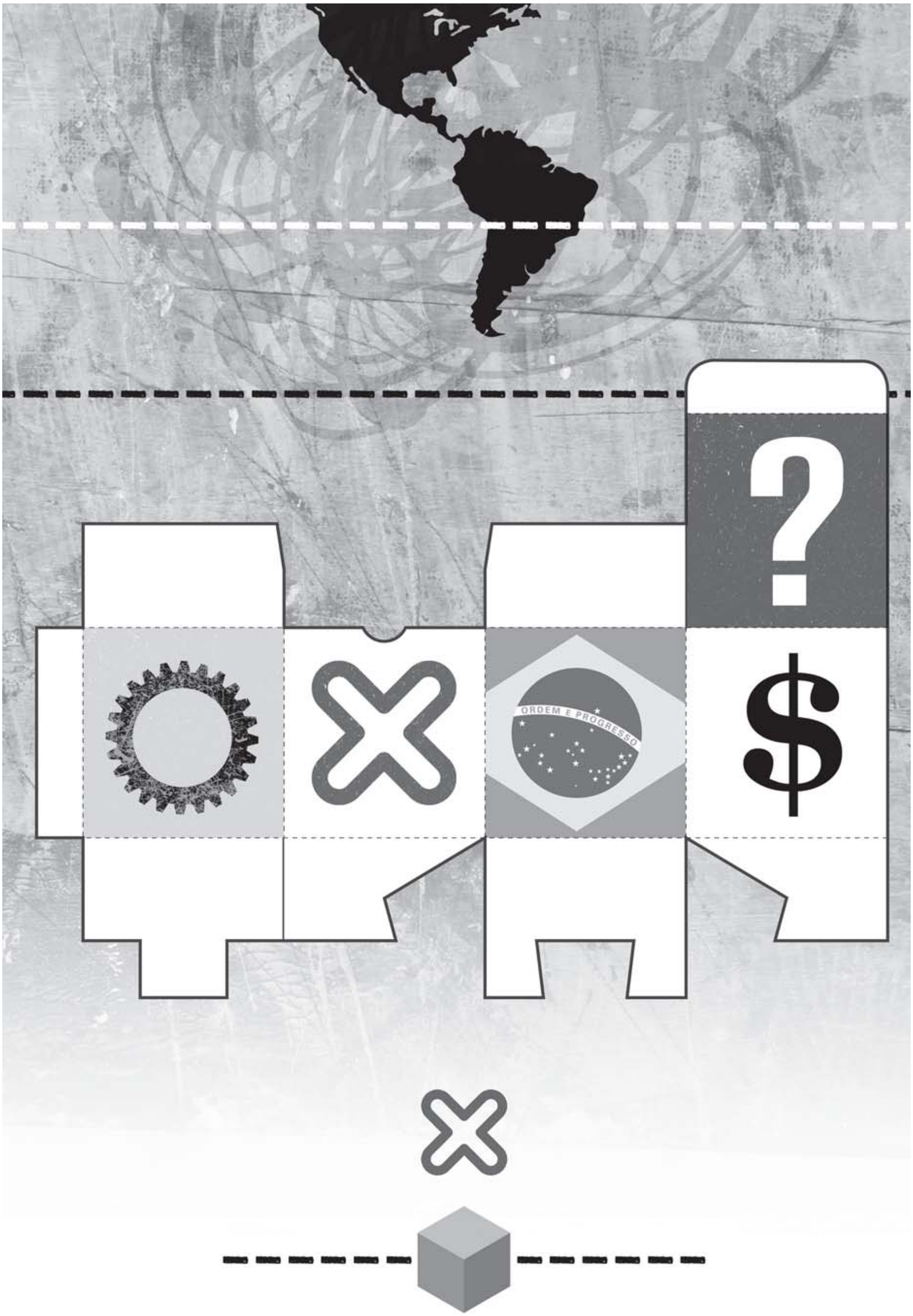
ORDEM E PROGRESSO

Is brazilian capitalism at an institutional equilibrium?: a varieties of capitalism approach[1]

"O capitalismo brasileiro está em equilibrio institucional?: uma abordagem de Variedades de Capitalismo"

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Abstract

Given that Brazilian capitalism does not fit any single ideal type variety of capitalism, the article discusses whether Brazilian capitalism is still evolving towards an ideal type or whether it is already at a hybrid institutional equilibrium. The analysis focuses on the production regime with special reference to capital-labour-state relations and examines how firm strategies and public policy impact the nature of capitalism in Brazil. The analysis shows how firms might actually be pulling Brazilian capitalism in a different direction than the state.

Keywords: Brazil, Varieties of Capitalism, state-firm interaction

Resumo

Dado que o capitalismo brasileiro não se enquadra em nenhum tipo ideal de variedade de capitalismo, este artigo discute se o capitalismo brasileiro ainda está evoluindo para um tipo ideal, ou se já está em um equilíbrio híbrido institucional. A análise incide sobre o regime de produção, com especial referência às relações capital-trabalho-estado e analisa as estratégias como estratégias empresariais e o políticas públicas impactam a natureza do capitalismo no Brasil. A análise mostra como as empresas podem realmente estar puxando o capitalismo brasileiro em um sentido diferente do que o estado.

Palavras-chave: Brasil, variedades de capitalismo, interaçao estado-empresa.

Brazil has always been resolutely capitalist, even at the height of import substitution industrialisation (ISI) policies and heavy-handed state intervention in the economy from the 1950s to 1980s. What has been less clear-cut or difficult to define is the model or type of capitalism that occurs in Brazil. A large number of typologies of contemporary capitalism have emerged in the academic literature over the past decades (Goldthorpe 1984; Kitschelt, Lange, Marks & Stephens 1999; Amable 2000; Coates 2000; Schmidt 2002; Hall & Soskice 2001; Huber 2002; Boyer 2008), but none of the typologies really fits Brazil. Here, I focus on one such typology - the Varieties of Capitalism (VoC) approach – to put forward my findings about the nature of contemporary Brazilian capitalism. This is not an argument for Brazilian exceptionalism, but rather one that draws attention to the complexity of the economic realities experienced by Brazilian firms and other social agents and the intricacies of the process of industrial transformation experienced by state and society in cases of later industrialisation. Given the prominence of institutional complementarities in VoC analysis, a stable model of capitalism suggests convergence around an ideal type (as described in the literature). The lack of an apparently coherent model and potential difficulties in generating institutional complementarities opens space for debate on two related questions:

- Is Brazilian capitalism already at an institutional equilibrium? If yes, then is it bound to remain a hybrid or mixed version of the ideal varieties/types described in the literature?
- Is Brazilian capitalism still evolving towards an accepted variety/ideal type? If yes, then in what direction?

To answer these questions, the analysis focuses mainly on the production regime (and not on welfare or social policy aspects) with special reference to capital-labour-state relations in industry. It examines private sector investment strategies and public sector policies that impact industrial production and technological development. It compares features of the Brazilian case against features of the two ideal types in the Varieties of Capitalism (VoC) approach.

Applying a fresh lens, bottom-up rather than top-down in its approach to analysing firm strategy and business-state relations in Brazil, revealed some rather surprising (and what many would probably consider controversial) results.

This article is divided into five sections that discuss various aspects of the VoC approach with respect to Brazil: (i) basic elements of the VoC approach and its application to Latin American political economy; (ii) general features of the two VoC (with respect to national and international aspects of the production regime – see Table 1 in appendix); (iii) spheres of action of firms to resolve coordination problems (with respect to industrial relations, education and training, corporate governance, and inter-firm relations – see Table 2); (iv) economic and social impacts of each VoC (with respect to firm behaviour in the given production regime as well as consequences for the welfare regime – see Table 3); and (v) conclusions with respect to the usefulness of the VoC approach for understanding contemporary capitalism and development policy in Brazil.

Tables: Brazil and the Varieties of Capitalism

Table 1: General Features – National and International Aspects

General Features	Liberal Market Economies	Coordinated Market Economies	Brazil
Societal Organising Principle	Market is dominant organising principle.	Collaboration and coordination of social agents are dominant form of organisation.	Relation to the state is central to strategies of social agents.
Resolution of Coordination Problems	Hierarchies and competitive market arrangements.	Networks and non-market collaborative relationships with key role of business associations.	Non-markets relationships coordinated by the state; also, importance of hierarchies.
State Intervention	Fragmented; strong limits to public intervention in the economy.	Various forms of public intervention, including support of private sector collaborative efforts.	Strong state presence in the firm's various spheres of action; only indirect intervention in informal sector.
International Economic Relations	Free trade principles; favour deregulation of financial markets and capital mobility.	Economic development objectives condition choices with respect to trade and capital mobility.	Dominance of MNCs; economic development objectives and internationalisation choices conditioned by the state's relations with MNCs and export sectors. Increased capital account liberalisation, but tight regulation of financial sector.

Source: Amable 2000, Boyer 2008 (for LME & CME), Author for Brazil.

Table 1: General Features – National and International Aspects

General Features	Liberal Market Economies	Coordinated Market Economies	Brazil
Response to Globalisation	Demands for more deregulation (especially in labour and financial markets); re-location of production; 'race to the bottom' strategies of firms?	Internationalisation of finance disrupts network-based corporate governance; demands for tighter regulation.	Structural reforms; market liberalisation; greater focus on innovation policy and augmenting competitiveness.

Table 2: Firms' Spheres of Action

	LME	CME	Brazil
Industrial Relations System	Conflictual capital-labour relations; flexible and deregulated labour markets; precarious employment; weak unions; atomised labour; firm based wage bargaining.	Collaborative relations and consensus-based decision-making between labour and management; long-term employment and rigid labour markets; powerful unions and business associations; collaborative wage bargaining across firms in a sector.	Hierarchical (and often conflictual) capital-labour relations subject to state intervention and regulation; minimal levels of collective bargaining; precarious employment contracts/high turnover; weak unions; atomised labour; large informal sector.
Education and Training System	Generic education and worker training; few firm specific skills; mainly organised by the state; some on-the-job training.	Highly skilled workers with firm specific skills; mainly organised by firms and business associations.	Low levels of education and skills; mainly coordinated by the state (where available) via the semi-public SENAI; some firm contribution in terms of on-the-job training.
Financial System/ Corporate Governance	Diffused ownership with many shareholders; importance of shareholder value and immediate profitability/ performance indicators; market-based financing that depends on publicly available information (balance sheets); financing based on short-term horizons but with room for high risk taking.	System of cross-ownership of firms; 'patient capital'; important role of main bank; financing depends on relationships, reputation and network internal information.	Dominance of diversified family-owned conglomerates/ groups; large number of SMEs; both rely on internal resources and reinvested profits for financing investment; low reliance on credit or equity; large long-term investment projects financed by the state bank (BNDES); some expansion in local stock market and strong inflows of foreign portfolio investment; dominant presence of MNCs in some sectors (external factors often determine their investment strategies).

Source: Amable 2000, Boyer 2008 (for LME & CME), Author for Brazil.

Table 2: Firms' Spheres of Action

	LME	CME	Brazil
Inter-Firm Relations	Arms length, market-based competitive relations; strong anti-collusion based policies; market based standard setting; limited framework for dealing with relational contracts.	Collaboration based on non-market based features such as reputation and trust; avoidance of head-on competition in home market; consensus based standard setting with strong business association activity; business led framework for resolving problems with relational contracts.	Hierarchical for suppliers and clients (especially when dealing with lead firm in conglomerates or MNCs); informal relations within the group and market-based competitive relations with others; limited framework for dealing with relational contracts outside the group; market-based relations in informal sector; state involvement in technological diffusion and standard setting.

Table 3: Economic and Social Development Implications and Consequences

	LME	CME	Brazil
Science System	Competition between researchers and research institutions/universities; rigid intellectual property regime; strong links to NSI.	Collaborative relations between firms and research institutions, including public universities. Strong links to NSI.	Very weak link between firms and scientific community; important element of state financing of research and state support for collaboration between NSI actors.
Technological Development	Importance of intellectual property protection, patents, etc.; stimulates radical innovation and the development of highly innovative start-up firms and new products.	Importance of tacit knowledge, in-house innovation; state and business collective action in support of technological development; favours incremental innovation.	Disarticulated relation between the science & technology system and the productive system; weak protection of intellectual property rights; innovations mainly in process and managerial techniques (via learning).
Industrial Specialisation	Cutting edge, new sectors which rely on individual highly trained and mobile professionals: aerospace, IT, pharmaceuticals, telecom, financial services.	Mature industries producing complex products with highly skilled labour requirements; consumer durables or sectors that meet social demands: automotive, electronics, mechanical, infrastructure, health- and environment-linked sectors.	Technologically mature industries and resource-based sectors: automotive, metal-mechanical, food processing/ agribusiness, consumer goods, paper and cellulose.

Source: Amable 2000, Boyer 2008 (for LME & CME), Author for Brazil.

Table 3: Economic and Social Development Implications and Consequences

	LME	CME	Brazil
Social Policy/Welfare	Minimal welfare state; means-testing and low benefits; very limited input from business.	Strong welfare and social protection; business collaboration in such practices.	Weak welfare; some social protection with heavy state intervention; special conditions for public sector workers.
Equality and Social Justice	Underinvestment in collective goods; increasing income inequality.	Important investments in collective goods; strong sense of citizenship; egalitarian values; social equality.	Minimum capacity to create a sense of citizenship and inclusion; high levels of income and social inequality.

The article aims to provoke debate and discussion on the above mentioned issues. My interest in these debates relates to the insights they might provide in understanding the action necessary on the public policy front to boost industrial development. This is especially pertinent in the current context of "neo-developmentalist" tendencies in government policies (Bresser-Pereira 2009) as well as in campaign platforms in what is an election year in Brazil. Thus, the article uses an argumentative style and does not systematically provide extensive evidence (although this is available) to back up each and every argument.

Basic elements of the VoC approach

A key feature of the VoC approach, in contrast to most previous approaches to analysing capitalism in advanced industrial democracies, is the focus on the micro-level to understand outcomes at the macro-level. That is, the VoC approach emphasises the individual and collective behaviour of firms/business actors and their impact on economic and social conditions. Although it acknowledges that institutions are critical to firm decision making and that ultimately structure drives strategy (Hall & Soskice 2001), it is an actor-centred approach that places key importance on the behaviour and preferences of firms.

Two edited volumes outline the main elements of the VoC approach to analysing modern capitalism. This article discusses the different varieties of capitalism based on the analyses in these texts. Both volumes - Kitschelt, Lange, Marks and Stephens (1999) and Hall and Soskice (2001) - argue that there are two main types of capitalism based on the level of coordination (especially amongst business actors – firms and business associations) to resolve political economy problems facing social agents. The two ideal types are labelled as liberal market economies (LME) and coordinated market economies (CME).

The VoC approach takes a relational view of the firm and as such is interested in analysing the linkages firms establish with other firms as well as their collective behaviour in business associations (i.e. horizontal coordination). The breadth and depth of this coordination, including the type of business associations, is a key element in the classification of each VoC. Notwithstanding this emphasis on micro-level analysis, the VoC approach also acknowledges the importance of the state in providing appropriate policies and the regulatory regimes that control the institutional framework within which firms operate (i.e. vertical coordination). Thus, the relationship of firms (individually and collectively) to the state is another important element in the classification process.

The general institutional features and consequences of each variety of market economy are presented in the tables in the appendix. Here it is sufficient to note that according to the VoC literature, in LMEs, firms coordinate via hierarchies and competitive market arrangements often characterised by arms-length transactions (i.e. price tends to be the key allocative mechanism). In contrast, in CMEs, firms depend more heavily on non-market relations for coordination via networks and other types of collaborative relationships (i.e. reputation, trust and negotiation serve as key allocative mechanisms). These differences favour and reinforce specific institutional structures, which in turn condition (but do not necessarily determine) firm strategies and behaviour. Hall and Soskice (2001:21) are particularly careful to note that they were “not arguing … that one is superior to the other” but instead that each specific ideal-type institutional configuration creates complementarities that provide firms with particular advantages for engaging in certain types of activities. Moreover, they anticipate change in firm strategies in response to shifting internal conditions and external shocks, but argue that any adjustments reflect and accommodate pre-existing institutional advantages (i.e. there is an element of path dependence).

Although the VoC approach was developed with the intention of analysing patterns of modern capitalism in advanced industrial democracies, it provides some useful insights and methodological tools for better understanding the evolution of capitalism in developing economies. Schneider (2008 & 2009) argues that the VoC approach is particularly attractive when studying Latin American political economy. He argues that the VoC literature provides a fresh view that adds value to analysing developments in the region (especially since the 1990s), because it shifts attention away from the state to firms and issues of corporate governance (this ‘firm’s eye view’ being particularly beneficial to understanding the post-market reform economic context). He also notes the growing interest in understanding micro-level issues related to capital-labour relations, the role of unions in collective bargaining, and the importance of worker education and training (e.g. the neo-developmentalist approach sees augmenting worker skills as a key area of public and private sector action, given the onus is on firms to increase productivity and competitiveness in the market sphere; moreover, investing in education is seen as crucial to raising income/ reducing poverty in the longer run).

Although Schneider adopts the VoC approach, he disagrees with the mainstream argument that there are only two basic types of capitalism. He argues for the inclusion of a third type – the hierarchical market economy (HME) – for analysing capitalism in Latin America. While I agree with the value of applying a micro-level approach to complement more state-centred and macro-level approaches of analysing capitalist development in the region, I am less convinced of the value of adding a distinct third type to understanding capitalism in Brazil (this point is discussed further in the conclusion).

Brazil and the two varieties of capitalism

Most analyses of key national features of capitalism and mechanisms for dealing with internal coordination problems within Brazil made clear that the Brazilian case diverged from both the ideal types (LMEs and CMEs), mainly because the state continued to be central to developments in the production regime.[2] Legacies of state corporatism still coloured business and labour attitudes and behaviour towards the state, and any analysis that sought to exclude or side-line the state would simply miss the most crucial agent in Brazil's march towards development. Thus, in Brazil, it would not be an exaggeration to claim that social agents' strategies were developed around their relations to the state, whereas in LMEs, markets were the dominating organising principle in society, and in CMEs, collaboration and coordination among social actors (capital and labour) were the dominant features of societal interaction. In Brazil, the state coordinated both market and non-market relations (in contrast to the business-led coordination seen in CMEs) and hierarchies, with the state at the apex. The state often determined the resolution of particularly problematic aspects of coordination, and there remained an emphatic and pervasive (albeit reduced) state presence in the overall functioning of the production regime. The details of this interventionism were best observed at the micro-level in the various spheres of firms' actions in the economy (discussed in the next section).

The state played a vital role in organising the production regime's response to external pressures, such as shifts in technological paradigms, internationalisation and globalisation. For example, President Lula's *Política* *de Inovação Tecnologica e Comercio Exterior* (PITCE) of 2003 explicitly addressed the state's contribution and support to industry in dealing with the above challenges. The state's relations with multinational corporations (MNCs) and the export sector also shaped the business environment and the development strategies of industry. From the early 1990s, Brazil underwent a marked shift towards market liberalisation, especially with respect to freer trade and greater capital mobility. This directly impacted the attitude and behaviour of firms operating in Brazil not least because of the increased presence of foreign investment (both direct and portfolio). There was some evidence that these shifts led to an overall increased reliance on market/competition based relations in certain industrial sectors, but there were few calls for deregulation or the exit of the state. Instead evidence suggested a cautious attitude towards deregulation and a continued appreciation for state coordination when necessary to support industry against the vagaries of global markets (Doctor & de Paula 2007). For example, the strength of the Brazilian domestic banking sector, evident in its continued good performance in 2008-09 in the midst of the worst global financial crisis since the Great Depression, was readily attributable to the resolute hand of state regulation and the strong presence of state-owned banks.

To summarise, the general features of Brazilian capitalism, with respect to its responses to internal and external pressures and shifting conditions, generally leaned towards the CME variety, although with a much more prominent role for the state than envisioned in the VoC ideal type. Typically, whereas the CME tended to see business lead with state backing, the Brazilian profile was one of state leadership and private sector followership. Thus, general trends viewed at the aggregate or macro-level seemed to point Brazil in the direction of a more coordinated variety of capitalism (albeit more state- than business-led), a finding that was in line with much academic research on Brazil.

Firms' spheres of action

The VoC approach takes a relational view of the firm (Hall & Soskice 2001) and focuses on four key spheres of action, where firms concentrate their efforts to resolve coordination problems related to their productive activities. The first two areas relate to the firm's actions with respect to its workers, while the other two relate to the firm's interaction with capital (its owners and other firms). The following analysis is limited to the formal sector. However, it must be emphasised that informal sector or non-registered firms (which form a large proportion of firms and a key source of employment in Brazil) faced rather different circumstances. They often operated in arduous conditions with only a grim chance of survival in what often was a fiercely hierarchical and savagely market dominated pattern of interaction.

First, in the sphere of **industrial relations**, the Brazilian production regime was traditionally characterised by hierarchical and conflictual capital-labour relations that were subject to state intervention, regulation and control. The precarious nature of employment contracts, the high levels of employee turnover, the weak union presence in the firm, the minimal levels of collective bargaining and atomised nature of labour's situation (Schneider 2008; Delgado 2008) all pointed to features reminiscent of the conditions of semi- and low-skilled workers in LMEs.

The condition of industrial relations in Brazil could hardly show a bigger contrast when compared to CMEs. Yet, this need not necessarily be the case, since the Brazilian political economy was very much shaped by corporatist traditions in the urban industrial context that were very similar to the ones prevalent in continental Europe. The evolution of Brazil's previous rigidly state corporatist institutions into more society-friendly forms of neo-corporatist relations was not inconceivable. I have argued this position elsewhere (for example, see Power & Doctor 2004; Doctor 2007; Doctor 2007a).

Second, the **education and training system** prevalent in Brazil again resembled the LME in that workers were generally poorly trained, semi-skilled, with little opportunity to develop firm specific skills. Firms and business associations made little direct contribution to the overall education and training system for workers with the exception of minimal levels of on-the-job training necessary for completing the immediate task at hand. What education and training was provided tended to be coordinated by the state (where available) via the semi-public *Serviço Nacional de Aprendizagem Industrial* (SENAI), which was part of Brazil's "*Sistema S*" - a remnant of the old state corporatist development project. High employee turnover (on average every three years) in many ways justified employers' attitudes towards worker training, skills and capacity building.

Again, this was an important sphere of firm activity which could easily be upgraded to CME standards with the mutual cooperation of business associations and the state. Institutions that could be given responsibility for this type of coordination already were in place, for example, SENAI and the *Centros de Formação e Educação Tecnologica* (CEFET). SENAI already operated the largest vocational education complex in Latin America, registering about two million individuals in over 2000 different types and levels of courses every year. Thus, this organisation, formally attached to the state federations of industry and funded by the obligatory corporatist "*imposto sindical*" charged to all firms, already played a crucial role in training workers in cooperation with business federations in some 28 industrial sectors, where Brazil had developed competencies and competitiveness (President Lula himself had benefited from SENAI training offered to metallurgical workers in Sao Paulo). The recent process of market reforms gave rise to criticisms from some sectors of entrepreneurs, who argued that the market would deal better with worker training and apprenticeship than public institutions. However, it was difficult to agree with this particular aspect of the calls to dismantle the surviving elements of the corporatist institutional structure, since it was not clear that it would be feasible to create an independent vocational training and industrial apprenticeship system that could efficiently replace SENAI.

Third, Brazilian firms' interaction with the **financial system** and issues of **corporate governance** were undergoing the fastest degree of change in a LME direction. This was one area where Schneider's HME variety had made particularly apt points (relevant until recently). The Brazilian productive regime was traditionally a universe populated with large family-owned diversified business conglomerates operating side by side with MNCs. The former with inter-locking horizontal and vertical relationships relied on hierarchy and networks to determine investment strategy, while the latter as subsidiaries of foreign-owned firms often also relied on hierarchy and non-market relations with their parent company to determine their investment strategies. However, there are many indications that the profile of Brazilian business was moving away from the earlier family-run hierarchical structures (Diniz & Boschi 2003).

Most Brazilian businesses relied on internal resources and reinvested profits rather than debt or equity to finance investments. Even small and medium sized enterprises (SMEs) typically saw little scope in financing investment via credit or equity. In the case of large and long-term investment projects, the state development bank, BNDES, extended financing to big firms, business conglomerates and even MNCs, often at subsidised rates. Thus, in Brazil, the main bank relationship central to financing investment projects in CMEs, was replaced by a state-owned bank as chief source of finance for larger investment projects. The state financing option was only recently extended to include SMEs under specific conditions and for particular types of activities. Thus, traditionally the Brazilian pattern of investment financing had mixed elements, but leaned more to the CME variety with non-market factors often marking investment financing decisions.

The economic liberalisation process and market-oriented reforms of the 1990s were clearly influencing the scope for firms to attract investment financing via the market. It must be emphasised that the availability of credit and capital for investment (from both the public and private banking system) remained extremely limited throughout this period, even after monetary stabilisation in 1994 (Barros de Castro, 2008), partly because the government's debt financing needs crowded out the private sector. However, the adjustment challenge facing firms during the market reform process, mainly expressed in the need to restructure and modernise business models, often required access to substantial financial resources. As the demand for external market-based funding to finance much needed industrial modernisation increased, so also grew the professionalisation of management in family-owned firms with a concomitant diminution in hierarchy and non-market forms of corporate governance.

In addition, the continuing expansion of the local stock market and other emerging LME features of the finance system (including the listing of large Brazilian firms in foreign stock exchanges such as New York) had a significant impact on the mode of corporate governance. As a consequence of the growing importance of market-based financing for funding investment in Brazil, corporate governance distinctly shifted towards LME patterns which emphasised shareholder value, short-term profit indicators, and so on. Thus, the features prevalent in LME corporate governance patterns should be expected to gain a higher profile in Brazil in the coming years. For example, Leopoldi (2009 forthcoming) argues that changes in corporate governance were more likely to have been induced by requirements of the CVM (*Comissão de Valores Imobiliarios*/Brazilian Securities and Exchange Commission) than adopted due to a shift to liberal values within firms.

Fourth, in the sphere of **inter-firm relations**, many Brazilian firms used to operate in a hierarchical and non-market based environment. Hierarchy was particularly evident in large firms' relations with their suppliers and even their clients. Informal relations were typical within the diversified group, while market-based competitive relations were more likely with those outside the group. Meanwhile, SMEs typically faced arms-length market-based relations with the firms they interacted with – whether as clients or suppliers. Brazilian business often expressed cautious attitudes towards coordination and collaboration among firms that normally interacted on the basis of market relations (competitors, suppliers or clients). Thus, this sphere of the firms' activities was one of mixed features. For the vast majority of firms, LME style patterns prevailed, although larger firms (domestic conglomerates or MNCs) enjoyed some features of CME collaboration or even HME style dominance.

To summarise, the overall pattern of activity that shaped the firm's operational environment strongly resembled the features found in LMEs.

Brazilian firms' capacity to react flexibly to accommodate change included the ability to adjust corporate governance in an LME direction when necessary. Thus, for example, firms such as Metal Leve and Seguros Sul América (icons of the ISI period as successful nationally-owned firm in the autoparts and insurance sectors respectively) were quick to sell shares to foreign investors when business strategy indicated the sense/value of doing so. Thus, looking at Brazil from a bottom-up or micro-to-macro perspective provided a rather unexpected picture of LME type capitalism, mainly as a pragmatic response to the changing institutional and policy environment. Interestingly, the top down approach of most earlier analyses of Brazilian development would have suggested a CME or even HME variety, patterns that were in contrast to the actual direction of current firm strategies and behaviour in the prevalent (and shifting) institutional environment.

Economic and social impacts of the production regime

One of the principle points of focus of the VoC approach was to use a micro-level analysis to provide a system-level analysis of capitalism in terms of its socioeconomic and political impacts in two areas – the production regime and the welfare state. The analysis of the production regime in Brazil cast light on how the specific configuration of institutions shaped micro behaviour (sometimes in unexpected ways). So, what were the consequences of the behaviour and choices of social agents acting within the prevalent institutional framework of the production regime? Here it made sense to briefly consider three aspects: the science system, the nature of innovation and technological development, and the results in terms of industrial specialisation.

A number of studies have demonstrated that Brazil had a rather weak science system and links between firms and the scientific community were unsubstantial (Dahlman & Frischtak 1993; De Negri, Salerno & Barros de Castro 2005; Katz 2006). Of course, there were exceptions, but these were few and far between (e.g. Embraer, Itautec, Petrobras). A large proportion of pure science as well as (more applied) innovation directed research for industry was conducted under the aegis of state funding (the agriculture/agribusiness sector was much more active in terms of private sector initiatives to fund R&D). In 2005, although the highest in Latin America, Brazil's total expenditure on research and development as a percentage of GDP was only 0.97% (compared with China at 1.34%; South Korea at 2.99%; Chile at 0.68%). The share of private sector R&D was only 0.51% of GDP, indicating a large percentage was still funded by the public sector (MCT 2007). More encouragingly, the number of Brazilian academics publishing articles in international scientific journals went up from only 0.44% of world share in 1981 to 1.92% in 2006 (MCT 2007). Other indicators of science output remain much lower than in other regions (Alcorta & Peres 1998; Maloney & Perry 2005), although improving.

Even a cursory glance at the relations between Brazilian universities and industry show the low levels of joint effort or cooperation (again there are some notable exceptions such as the Coppe/UFRJ and Fiocruz in Rio, ITA in São Jose dos Campos, and the Federal University of São Carlos in São Paulo). Expert opinion as well as anecdotal evidence suggested that creating the elements of pure LME style competition-driven research between universities, research institutions and firm's technological development centres simply would not be a feasible means of developing the science system in the short to medium term in Brazil. Thus, CME-style collaborative relations between firms and research institutions, including public universities, were a more realistic path to enhancing research capabilities in Brazil. The Ministry of Science and Technology's Plan of Action for 2007-2010, *Ciencia, Tecnologia e Inovação para o Desenvolvimento Nacional*, was a step in this direction. Recent legislation, such as the *Lei da Inovação* and *Lei do Bem*, also manifested the clear intention of the government to foster these types of collaboration. Organisations such as FINEP and BNDES were given extensive remits with respect to supporting and financing innovation.

Thus, the disarticulated relation between the science system and the productive system hindered progress in creating an effective national system of innovation capable of boosting technological development and industrial performance (Dahlman & Frischtak 1993; Suzigan & Furtado 2006; Doctor 2009). In Brazil, innovation was often devoted to improving managerial techniques and to perfecting industrial processes often in the form of incremental learning-by-doing. Weak protection of intellectual property and limited availability of financing for product innovation as well as for development of cutting edge technologies and innovative products resulted in an innovation profile that was unlike that of typical LMEs. However, many of the features of the incipient national system of innovation in Brazil resembled the CME innovation and technological development profile, although at a much lower level of activity and performance (incremental innovation, importance of tacit knowledge and in-house innovation, state support for technological development activity, etc.). However, these features are undergoing change as the government and business associations prod firms into a more active pursuit of innovation (Salerno & Kubota 2008; Arbix 2007).

Hence, given the above characteristics of firms and the technology system, it was not surprising to note that Brazil's industrial specialisation profile had an emphasis in technologically mature and resource-based sectors such as automotive, metal-mechanical, machines and office equipment, food processing, paper and cellulose, consumer durables, etc. Of course, there were also some surprises such as the competitive success of Embraer (aeronautics), flexfuel motors (biofuels/alternative energy), vaccines and treatments for tropical diseases (pharmaceuticals), and various agriculture sector biotechnology firms. Overall, the nature of Brazil's industrial profile was much closer to that found in the European CMEs than in the Anglo-Saxon LMEs.

If one considered outcomes of the VoC on the institutions of the welfare state and areas of social policy as well as outcomes in terms of equality and social justice, the picture created in the production regime is completely reversed. In most social welfare areas, Brazil was much more like the LMEs in that there was only a weak welfare system, the state provided very limited and selective social protection (although there have been some changes under the current government), and business tried to minimise its contributions to and support for this policy area. Evidence suggested that capitalism as practised in Brazil exacerbated income and social inequalities (Huber & Stephens 2009). Moreover, it failed to create a strong sense of citizenship and social inclusion, features that were not alien to the LME.

Conclusions and value of the VoC approach for Brazil

The article aimed to identify whether Brazil fit any of the VoC classifications. It also examined whether Brazil's production regime had settled on a hybrid variety or whether it was still evolving towards an ideal type VoC. By picking apart and unravelling the micro- from the macro-level, a complex and even confusing picture emerged. On the one hand, at the micro-level (so favoured by the VoC approach), firms clearly were engaged in an increasingly LME pattern of relations. Even where elements of hierarchy or non-market based collaboration persisted, these were muted and often overwhelmed by the strongly market-biased considerations shaping firm production, investment and survival strategies. This competitive battle for the survival of the fittest was the sort of scenario very familiar to business studies and to market analysts working on Brazil (but probably sat more uncomfortably with political economists and political scientists).

On the other hand, at the macro- and meso-level, firms often were forced to bow (individually and collectively) to the weight of the ever-present state. Patterns of state intervention and coordination with capital and labour were reminiscent of CMEs (especially the sector-based CMEs of central Europe with strong corporatist histories or neo-corporatist institutional structures and French "dirigiste" characteristics). Much of the institutional framework and behavioural patterns of social agents in Brazil bore the marks of their state corporatist past, which favoured close interaction between state and private sector with the former taking the lead in such relations. Thus, a macro view, more familiar to analysts of Brazilian political economy, stressed the features of the production regime that diverged from LMEs and the difficulty of any evolution in that direction. From this point of view, the VoC approach might highlight the individual plight of firms or collective challenges facing sectors, but a micro-level view would not provide a true picture of the nature of capitalism as practised (at the systemic level) in Brazil so long as its classification criteria failed to give the state a central part in the evolution of capitalism.

Another point worth considering here is that while institutional structures tend to be more fixed (at least in the short and medium term), firms and other social actors can be more flexible in adapting their behaviour and responses to changing conditions. In this context, Brazilian entrepreneurs and managers, long accustomed to the need to react quickly to volatility in markets and policy conditions, were particularly well-adapted to respond efficiently to new circumstances. Thus, one could argue that the business culture was ahead of the game in terms of showing an eagerness to demonstrate openness to new management ideas and to adapt flexibly to liberal tenets in the market.[3]

Finally, to answer the questions set out at the start of the article, I concluded that if one took a micro-level perspective that focused on the actions of firms (individually and collectively), then one would be inclined to argue that Brazil had not yet settled into a new equilibrium in the institutional framework of its production regime. The exhaustion of the ISI model and the implementation of market reforms in the past fifteen years were still working their way through the system, and firms had not yet found an ideal pattern of action in the various spheres of their activity. Thus, a VoC approach to answering the question would come to the rather surprising and even controversial conclusion that Brazil was not at an institutional equilibrium, but was still evolving towards one of the varieties, with all micro-level signs pointing in a LME direction. However, VoC analysis also suggested that the weight of path dependency and past comparative institutional advantages might actually hinder this process and favour another re-adjustment in firm behaviour (in this case in a CME direction?). So, although the final outcome is unclear, the VoC approach would argue that the tensions between the micro and macro level – between firms and the state – would lead to further adaptation and change in the production regime.

If one took a macro-level or top-down view to answering these questions, then one was more likely to conclude that Brazil was at a relative equilibrium with respect to its production regime. Moreover, the continuing importance of state coordination in the economy and the overall stability of the institutional matrix in place over the past decades actually favoured the strengthening of CME features. This picture of the Brazilian VoC was certainly more in line with previous analysis and with the actions of President Lula's government, which gave a high rhetorical and policy profile to more coordination amongst social actors and a greater presence of the state in the economic and social sphere (Doctor 2007a). However, given the overall institutional stability, and the presence of clearly LME type actions in firm behaviour in the midst of otherwise prominently CME features, one could categorize Brazil as just one more hybrid variety of capitalism. The question from an industrial development point of view then becomes: does the specific hybrid variety to be found in Brazil reinforce institutional complementarities to enhance economic outcomes? The neo-developmentalist agenda, where the focus is on active state intervention to correct market failures which inhibit industrial development (Stiglitz 2005), could be delineated better using a VoC lens. Policies could be tailored to accommodate the macro and microeconomic trends as analysed in this article.

Either way, the analysis clearly indicates that in the case of Brazil adding an additional variety – the HME – would not really contribute to the analysis or ease the classification process. Some of the key features identified by Schneider (2009) are of declining relevance to understanding the evolution of the Brazilian political economy.

To conclude, my interest in these debates relates to the insights they might provide in understanding the action necessary on the public policy front to boost industrial development. The intention here was not to prescribe particular state actions or firm strategies, but rather to analyse what would be necessary to achieve the stated objectives of the key actors in the production regime and to provoke discussion of Brazil's development options. Finally, I hope the firm's eye view of the production regime, borrowed from the VoC approach, provided food for thought in terms of whether Brazilian society was pulling in a different direction than the state. And if it was doing so, what would the longer term consequences of this be for Brazilian business?

Notes

[1] Lecturer in Political Economy, University of Hull. This paper was mainly written during the time I spent as Visiting Researcher at the Universidade Federal Fluminense, and an earlier version was presented at the Roundtable organised at the Department of Economics, UFRJ in June 2009. The author would like to thank Professors Maria Antonieta Leopoldi and Eduardo Gomes for their support and also to acknowledge funding from FAPERJ during the very pleasurable months I spent in Rio from April to August 2009.

[2] The production regime refers to the organisation of production through markets and market-related institutions to form a framework of incentives and constraints on the actions and interactions of micro-agents in the capitalist system. These include firms, customers, employees and owners of capital (Soskice 1999).

[3] This point was brought to my attention by Maria Antonieta Leopoldi. She suggested that this eagerness to adopt modern ideas and attitudes was evident in both medium and large firms; they were very keen to be seen as up-to-date and were often well acquainted with the work of 'management gurus'. My research in the automotive industry also found confirmation of this among many MNCs, whose foreign executives admitted to actively seeking Brazilian managers because of their openness to new ideas and ability to react flexibly to change.

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