The STATE in the 21st century

Mariana Mazzucato • Mario Cimoli, Giovanni Dosi and Joseph Stiglitz
Jan Kregel • Luiz Bevilacqua
Anna Jaguaribe • John A. Mathews
Robert H. Wade • Benjamin Coriat
Ana Célia Castro • Leonardo Burlamaqui
Celia Lessa Kerstenetzky
Tiago Falcão and Patricia Vieira da Costa
Renato Boschi

ORGANIZERS
Ana Célia Castro I Fernando Filgueiras

Enap

Summary

Introduction

Ensuring the conditions for development involves more than simply creating favorable conditions for capitalism. It also involves ensuring governance conditions that create the right incentives so that public and private actors are able to invest and innovate across the different sectors of economy, society, and politics. It also involves creating institutional conditions so that the knowledge generated with innovations and development strategies are conveyed, thus establishing institutional frameworks favorable for economic growth, and the redistribution of generated assets and values.

Based on these premises, this book questions the role of the State in the context of the 21st century, in which the dynamics of the capitalist society is being transformed in scale, associating the development of new technologies, changes in working conditions, the issue of fair redistribution of goods generated, a displacement of power and money centers with governance conditions, and the new roles that the State must exercise. These transformations have altered substantially the economic, social and political contexts in emergent and developed countries, thus demanding new institutional arrays, with the ability to render sustainability to public development policies. Within this context, in the 21st century, the State plays an essential role, not only as a public investor or market regulator, but as an authority that ensures an institutional framework creating favorable, necessary, and sufficient conditions to establish the basis for the development, and conveyance of significant innovations to the sectors of the capitalist economy.

Without this institutional framework enabling a capable, crystal clear, empowered, and efficient public governance, development and innovation policies can hardly prosper, creating measurable and effective results for society. In this book, we have gathered different thoughts on the role of the State in the 21st century. These thoughts go through the role of the State in the dissemination and the coordination of innovation policies, through industrial policy, state investments, management of knowledge and industrial property, industrial policies, state investment, knowledge management and intellectual property, and through the role of the state itself in the redistribution of goods generated, social policies, and the ability of the State to carry forward development policies. Each of these subject matters, per se, deserves special attention and would entail a range of studies and thoughts. However, the gathering of these texts in this book bears an extensive backbone. No development policy establishes effective and efficient conditions if there is no institutional framework and governance exercised by the State.

It is not a matter of bringing the debate between orthodox and heterodox economists to the core of the book. The thoughts hereby presented are not whether or not the State should intervene in the economy. The thoughts address the institutional framework and the governance of development policies. The purpose of the book lies on the question of the development of capitalist societies under conditions of innovation, expansion, and gradual reduction of disparities. In order to attain this purpose, the thoughts hereby contained are about the systems of public governance that favor this new context of the development policies, i.e. policies of innovation and conveyance of a knowledge that creates and establishes incentives for development.

If presently, innovation is a fundamental precept to make markets move and for development, the State must perform the role of a boosting entity and facilitator of its inherent processes. Given its structure, the State is not innovative in itself. However, it may be a big factor for the development and innovation of the productive chain, and the supply of goods and services to society, through financing, facilitation, and promotion of innovative initiatives. Besides the operation of public banks, the institutional framework promoted by the State authority is essential to innovation, knowledge management, and the regulatory framework of innovative solutions for society.

Within this context, innovation, changes in industrial policy, sustainability policies, and new technological boundaries should reflect a proposal for wider openness in property, new models of redistribution of wealth and management of capital flows within the context of globalization. Concurrently, it demands new abilities from the State, mainly policies, new governance models, and new action institutional frameworks in society. The challenge of this book is to think about which are the governance milestones necessary and sufficient to achieve development through innovation, knowledge, and redistribution.

The first chapter, by Professor Mariana Mazzucato, deals with innovation policies within the institutional framework of the contemporary State. In face of market failures, the State must not act as the intervener in economy, but as the catalyst for new markets. The second chapter, written by Mario Cimoli, Giovanni Dosi and Joseph Stiglitz, addresses the challenges present in reviewing and restructuring the industrial policy. The institutional redirection of property, as well as capital regimes and flows are essential for development, thus requiring the State to take new stands and governance. The third chapter, by Jan Kregel, deals with financial governance as an essential element for development policies. The changes and responses resulting from the financial crisis did not innovate the governance process. Increasing capital ratios and macro-prudential regulation are tools of the 1970s, thus not able to generate efficient prophylactic measures in crisis situations. In opposition, the fourth chapter, by Luiz Bevilacqua, deals with two successful stories of state investment, associating innovation policies and knowledge management to change and redirect capital flows. The first four chapters focus mainly on governance conditions for development.

The fifth chapter, by Anna Jaguaribe, mentions the case of China. In reviewing its structures of public governance, China has been promoting a shift in the construction of state-oriented capitalism. The Chinese case bets on the future, preserving its political institutions, while innovating its industrial plant, the services sector, and the investment flow. The sixth chapter, written by John Mathews, recognizes that the promotion of green industries, especially in the energy field, is a significant component of state intervention, involving a broad process of bargaining and scale gains. The challenges posed imply rethinking incentive policies based on new institutional arrangements that support innovation and ensure sustainability. The seventh chapter, by Robert Wade, addresses the implementation of intelligent industrial policies. Intelligent industrial policies are those that succeed in promoting and attracting, in the most plural way possible, investments associated with capital gains and intelligence. A targeted industrial policy is not always effective, according to the author, and industrial policies are not miracle solutions. In order to be efficient and effective, an industrial policy must have its performance inserted in both, politics and governance conditions.

The eighth chapter, by Benjamin Coriat, deals with intellectual property rights as the main aspect of public governance and institutional milestones of an innovation policy. Changes in capitalist society and new capital flows require another approach to intellectual property and innovation. The State, prior to stand for citizens, must be a partner of citizenship in the processes of innovation and dissemination of knowledge. Knowledge governance, as Ana Célia Castro states in the ninth chapter, redefines innovation policies. It creates complex structures that redefine concepts and extrapolate the boundaries of given alternatives. In this context, the State must act in partnership and lead innovation processes. Cooperative networks, open innovation processes avoid technological match-ups and ensure better governance conditions towards development. Similarly, Leonardo Burlamaqui points out that the State must have a strategic action jointly with the intellectual property milestones generated by innovation. Separating profits from innovation, which must be rewarded, but not configured as a monopole - of legally granted property regimes is the focal point of the processes of transformation and development.

The eleventh chapter, written by Celia Kertenetzky, addresses the post-developmental moment experienced in Brazil, and the challenge of development in unequal societies. The key issue in development lies in creating sufficiently inclusive policies in its governance structures, which are capable of reducing inequalities in the flow of economic growth. The twelfth chapter, by Tiago Falcão and Patrícia Costa, deals with the Brazilian experience of social development. In reporting this experience of social development, the authors address the fact that social policies imply growth and economic development, being boosters of change. Finally, the thirteenth chapter, by Professor Renato Raul Boschi, deals with the state capacities necessary to constitute governance conditions for development.

All thoughts hereby presented challenge the issue of development through the construction of governance mechanisms. The role of the State in the 21st century, rather than being an economic propeller or intervener, relies in becoming a partner and a franchisor of a more open development process, based on innovation and on new forms of knowledge, summarizing the conditions of change. The challenge is set, and changes are necessary.

Finally, we would like to thank the sponsors of this project: Banco do Brasil, SESI, Caixa Econômica Federal, and BNDES. Likewise, we are grateful for the support of FLACSO Brazil, UNDP, ECLAC, and CGEE. Without the sponsoring and support of these institutions, this work would not have been possible.

Innovation systems: from fixing market failures to creating markets

Mariana Mazzucato

'The important thing for Government is not to do things which individuals are doing already, and to do them a little better or a little worse; but to do those things which at present are not done at all.'
John M. Keynes, The End of Laissez Faire, 1926

'The road to the free market was opened and kept open by an enormous increase in continuous, centrally organized and controlled interventionism.'
Karl Polanyi, The Great Transformation, 1944

Instead of asking: what benefits [has] this project yielded, it would almost be more pertinent to ask: how many conflicts has it brought in its wake? How many crises has it occasioned and passed through? And these conflicts and crises should appear both on the benefit and the cost side, or sometimes on one—sometimes on the other, depending on the outcome (which cannot be known with precision for a long time, if ever).
Alfred O. Hirschman[1]

Beyond market failure[2]

Today countries around the world are seeking 'smart' innovation led growth. And hoping that this growth is also more 'inclusive' and 'sustainable' than in the past (European Commission, 2010). Such a feat requires rethinking the role of government and public policy in the economy—funding not only the 'rate' of innovation, but also envisioning its 'direction'. It requires a new justification of government intervention that goes beyond the usual one of 'fixing market failures'. It requires shaping and creating of markets. And to render such growth more 'inclusive' it requires attention to the ensuing distribution of 'risks and rewards'.

Complexity theory is relevant here because innovation is (1) a collective process, defined by a *system* of heterogeneous public and private actors, interacting in different ways; (2) it is a fundamentally uncertain process (in the knightian sense) with most attempts ending in failure; and (3) it is a path-dependent, cumulative and highly clustered (wave-like) process, characterised by fat tailed distributions. Unfortunately models of innovation continue to pretend the opposite, i.e that (1) it is driven mainly by individual genius of 'entrepreneurs', at best 'facilitated' by the public sector; (2) only characterised by 'risk' (see the 'lottery' models of endogenous growth theory); and (3) can be modelled as a 'random walk' (with little persistence) that statistically appears as a Gaussian process. Understanding the collective, uncertain and persistent nature of innovation helps us to understand the kind of policy questions that we should be asking if we want to achieve smart innovation led growth.

Market failure theory justifies public intervention in the economy only if it is geared towards fixing situations in which markets fail to efficiently allocate resources (Arrow, 1951). The market failure approach suggests that governments intervene to 'fix' markets by investing in areas with 'public goods' characteristics (such as basic research, or drugs with little market potential) and by devising market mechanisms to internalise external costs (such as pollution) or external benefits (such as herd immunity). Five key sources

[1] Cited in Adelman, J. (2013). *Worldly philosopher: the odyssey of Albert O. Hirschman*. Princeton: Princeton University Press, p. 313.

[2]

The rationale for industrial and innovation policy

Mario Cimoli, Giovanni Dosi, Joseph Stiglitz

The evolution of industries [4]

A fundamental element in countries that successfully caught-up with the leaders during the 19th and 20th centuries was active government support of the catch-up process, involving various forms of protection and direct and indirect subsidy. The guiding policy argument has been the need of domestic industry in the industries of the day judged critical in the development process for some protection from advanced firms in the leading nations. Alexander Hamilton's argument (1791) for infant industry protection in the new United States was virtually identical to that put forth decades later by Friederich List (1841) regarding Germany's needs. Gershenkron's (1962) famous essay documents the policies and new institutions used in Continental Europe to enable catch-up with Britain. The same story also fits well with the case of Japan, and of Korea and Taiwan somewhat later. In many countries these policies engendered not successful catch-up but a protected inefficient home industry. However, they also were the hallmark during the 20th century of all the countries that have achieved their goals of catching-up.5 We need to learn more about the circumstances under which infant industry protection leads to a strong indigenous industry: the project on which this work draws shed new light on the issue.

These policies obviously angered companies in the leading countries, and their governments, particularly if the supported industry not only supplied its home market but began to invade the world market. While the case made after World War II for free trade was mostly concerned with eliminating protection and subsidy among the rich countries, and at that time there was sympathy for the argument that some infant industry protection was often useful in developing countries, the more recent international treaties that have been made increasingly have been used against import protection and subsidy in countries seeking to catch-up from far behind.

Our belief is that Hamilton and List were and continue to be right that successful catch-up in industries where international trade is considerable requires some kind of infant industry protection or other modes of support.

Table 1. summarizes an exploratory taxonomy of policy interventions, measures and related institutions.

In the last resort, policies and other activities of "institutional engineering" affect together (i) the technological capabilities of individual and corporate organizations, and the rate at which they actually learn; (ii) the economic signals that they face (including of course profitability signals and perceived opportunity costs); (iii) the ways they interact with each other and with non-market institutions (e.g. public agencies, development banks, training and research entities, etc.)

It happens that all major developed countries present indeed relatively high degrees of intervention – whether consciously conceived as industrial policies or not – that affect all the above variables. And this applies, even more so, to the period when today's developed countries were catching–up with the international leader. What primarily differentiate the various countries are the instruments, the institutional arrangements and the philosophy of intervention.

---

[4] This paper draws upon M. Cimoli, G. Dosi and J. E. Stiglitz (eds.), *The Political Economy of Capabilities Accumulation: the Past and Future of Policies for Industrial Development*, Oxford University Press (2009) and on successive joint work by the authors. The research leading to this work has enjoyed the long-term backing of the Initiative for Policy dialogue (IPD), Columbia University.

[5] For a broad historical overview of the role of policies in some now-developed countries, see Reinert (2004).

Financial Governance After the Great Recession: What Changed and What Didn't?

Jan Kregel

The Nature of Financial Institutions

The methods of financial governance depend on how financial services impact the pursuit of government's policy objectives. The traditional approach considers finance and financial services as equivalent to any other good or service provided in the economy; provision is thus subject to the operation of market forces and governance involves augmenting the operation and efficiency of those forces. Indeed, one of the major post-war criticisms of one of the most successful examples of financial governance, the New Deal Glass-Steagall Act, was that it created a monopoly for commercial banks in the provision of insured bank deposits which provided them zero cost funding. Like any monopoly these conditions were considered as market imperfections and thus considered as inefficient and a wasteful misallocation of resources. The wave of deregulation and liberalisation of US financial markets that occurred in the 1980s was based on this argument. In the context of the run up to the recent financial crisis this traditional approach was represented by the Chairman of the Board of Governors of the Federal Reserve System Alan Greenspan who based his approach to governance of the financial system on the idea that market forces limit leverage and risk: ''private regulation generally has proved far better at constraining excessive risk-taking than has government regulation.'' (Greenspan, 2008) An alternative approach, based on the contributions of Keynes, Schumpeter, MInsky and other analysts of monetary cycles argue that financial institutions and financial services are inherently different from produced real goods and services and the standard conditions for the existence of market supply and demand are not satisfied and are thus inapplicable. In particular, this relates to the absence of any constraints on the degree of leverage and financial innovation that is the basis of the creation of money, liquidity and near-money substitutes, requiring active governance of the process by government regulatory authorities.

It is important to note that representatives of the diverse approaches to governance both as Greenspan and Hyman Minsky agree that the driving force behind the instability of the financial system; they diverge on the most appropriate governance mechanism. For Greenspan "The very nature of finance is that it cannot be profitable unless it is significantly leveraged... and as long as there is debt, there can be failure and contagion." (Greenspan, 2013) This assessment is virtually identical to Minsky's view: "Banks are profit maximizing organizations. The return on owners' equity is P/B = (P/A) (A/B) where P is profits, B is the book value of owners' equity, and A is assets. Given this profit identity, bank management endeavors to increase profits per dollar of assets and assets per dollar of equity". (Minsky, 1977: 17) But, Minsky adds an additional factor, that innovation is an integral part of the creation of leverage: "During periods of banking and financial innovation, the supply schedule of credit to business is virtually infinitely elastic. The availability of financing leads to increases in 1) capital asset prices relative to income, 2) the demand for investment goods, and 3) investment activity that is financed. The period in which a virtually infinitely elastic supply of credit exists is transitory, however, for the ever increasing amount of investment that is financed will lead to first an inflation in prices relative to wages and then to a wage inflation."(Minsky, 1977: 17-9) One of the most important innovations in the recent period has been the use of derivatives: And also here Greenspan's assessment is based on the application of market controls: The reason that growth

Two successful cases of state investment and a new diffusion model applied to capital flow

Luiz Bevilacqua

FOREWORD

The initial project regarding the paper to be presented in the "***Seminário internacional Papel do Estado no Século XXI: desafios para a gestão pública***" promoted by the " Public Management National School (ENAP) and the Brazilian Ministry of Planning, Budget and Management (MP)", was restricted to the last two topics, that is the impact of public investment on the higher education system and on the technological advances favour the Brazilian agribusiness. Instead of writing an overview regarding the general higher education system and the agribusiness complex we selected two emblematic enterprises proving that making the right choices public investments have a very high return rate.

However meanwhile we closed the basic concepts regarding a new theory dealing with diffusion process. This new theory introduces a second order approach to the dynamics of particles scattering in some supporting medium. The new contribution is the consideration of two simultaneous flows in the same system dividing the diffusion cloud into two fractions. The possibility to work with two simultaneous flows is much more adequate to model population dynamics, infectious diseases with people moving in and out some environment and clearly capital flux. Despite the fact that we have no expertise in economics we dare to present a first essay in capital flux since the results obtained by the new model are quite interesting and acceptable by the common sense. We are also convinced that it is the obligation of the university to take risks and try to open new roads. The ultimate aim of a genuine research project is to present unexpected results. If in the research output there is no surprise something is missing.

Therefore we decided to make two short reports on the Federal University of ABC in São Paulo, a very successful new university and on EMBRAPA which is a paradigm in the agribusiness complex, following a relatively extended presentation of the second order diffusion theory to capital flux. Besides the economic turmoil affecting Brazil and the international community as well deserves at least some alternative model that could better explain what is going on.

We now address for that new orientation.

1. A second order diffusion model with application in capital flow

1. Introduction

The extraordinary advance in computer technology in the last 30 years together with the demand for integration of several knowledge fields to solve new and challenging problems pushed forth the development of modeling techniques. Initially confined to physicochemical matters modeling was latter introduced to simulate population dynamics, environmental dynamics, epidemics and more recently diseases evolution and social behavior. Particularly the dynamics of economic systems and knowledge transfer belongs to this last theme. Not seldom the mathematical tools were taken from the models

GOVERNANCE STRATEGIES IN THE 21ST CENTURY: COMMENTS ON CHINA'S NEW CHALLENGES

Anna Jaguaribe

Introduction

China now faces the dilemma of transforming its growth model, based on an economy with global ties in all commercial, industrial, and service sectors. Due to the extremely comprehensive political geography of its investment portfolio, a slowdown in its growth, market fluctuations and changes in the composition of its GDP produce global shock waves. The fact that China's economic growth has been quite steady over the past three decades at 10% a year also contributes to this shock effect.

After more than thirty years of economic internationalization and accelerated catching up, China's economy enters a new stage and confronts economic imbalances and disarticulations stemming from its rapid growth, as well as significant changes in the global economy.

The New Normal and New Silk Road policies are strategies designed to meet the challenges posed by the economy and the new international scenario. Such policies bet on the sustainability of the Chinese economic model dynamics, i.e. the effectiveness of a combination of global market economy and state presence in key sectors and investments. These policies also rely on China's international consolidation without hegemonic struggles. In this case, international consolidation is connected with increased trade, investment and political understandings in Asia, serving as a model for inter-regional relations.

The dynamics of domestic and foreign policy are mutually supportive. They are instruments designed to facilitate the progression from catching up to becoming an innovation economy. They seek to sort out persistent social and economic problems in a different global context, without the advantages that characterized the early stages of economic reform in China.

The New Normal policy is not only a strategy for fiscal rebalancing, reform of the financial and administrative systems, but also a market development policy which relies on innovation as a new driver of growth.

China's new growth model implies a slowing economy and demands transformation in the dynamics of trade and public investment. This new context brings uncertainty to the international market as it changes the income profile of those who depended on China to drive national growth.

The slowdown in China's growth has been interpreted by many observers as the end of an exceptional process of modernization and a test to national strategies linking state and market in the dynamics of growth. On the positive side, this slowdown is considered part of the historical slowdown of Asian countries with fast catching up, such as Japan, Korea and Taiwan. On the negative side, the slowdown in growth and turbulence in the process are seen as the ultimate test to prove that state intervention hinders the proper functioning of market internationalization.

This paper argues that what is currently taking place is more than a process of normalization of Chinese economic growth patterns. New policies actually seeking to manage new growth levels result from a particular model of governance and a unique process of modernization. Their success does not depend on the impossibility of combining strong state presence in a globalized market economy, but on the congruence between policy and means and the existence of predictable and adequate governance practices and institutions.

Energizing industrial development: The role of the state in 21st century greening strategies

John A. Mathews

Introduction

There was a time when industrial development and energy were discussed in separate categories. The prevailing orthodoxy, which governed the "East Asian Miracle" of Japan's industrialization, followed by that of Korea, Taiwan and Singapore, was that integration with the world's fossil-fuel economy represented the optimal path forward. Grow rich with coal and oil, and then diversify – this was the formula. It worked because as a group, the East Asian "tigers" could not put too much strain on fossil fuel supplies. But in the 21st century, as giants like China and then India and Brazil and South Africa are moving along the industrialization pathway, their energy choices are becoming critical – for themselves and the world.

Let us call these the BICS countries, as opposed to the BRICS – leaving out Russia which is a special case through continued dependence on fossil fuels. The BICS countries have a population numbering 2.7 billion (around a third of world population of 7.3 billion), and at this scale the pathway to industrialization cannot ignore the means through which the process unfolds. If the BICS countries were to follow the "Business as Usual" pathway, with its strategy of exploiting access to fossil fuels wherever they can be found and are politically/economically available, they would run into serious geopolitical tensions well before the fuels ran out.

The western countries as they industrialized were able to tap resources from around the world, via colonialism and imperialism, while they exploited their own coal and oil reserves without any sense that they might be finite. And carbon emissions with their deleterious planetary climatic impact were not considered a problem. Obviously enough, these conditions do not apply today.

The emerging industrial powers, led by the BICS countries, have to invent a new development model that will enable them to bring ten times as many people to the rising income levels enjoyed by industrialized countries, while having to respect much tighter constraints on resources and fossil fuel usage. Without a "circuit breaker" this challenge does not add up – the BICS countries would be trying the square the circle. The result would be heightened geopolitical tensions leading to war, revolution and terror, quite apart from ecological damage of unimaginable proportions.

But there is a circuit breaker – and it is green development. Its core is green growth. In their various ways, the BICS countries are all pursuing some variant of green growth alongside the fossil-fuelled and resource profligate model of development. This is their feasible pathway to industrial development. When one reflects on the issues involved, what other pathway is there?

The positive future-oriented scenario is one in which these countries maintain their focus on and commitment to green development, because of their overwhelming national interests in doing so. The sceptical view is that they are doing too little, too late to reverse their previous fossil fuelled trajectory. Our scepticism is reinforced by the carbon lock-in that still prevails in the West. The US for example (pace President Obama's 11th hour efforts) is fixated on its 'energy revolution' involving coal seam gas and shale oil – fossil fuels that have only become accessible in the past decade because of technological developments, and which as high cost businesses now appear to be doomed because of falling oil prices.

The role of the state in escaping the middle-income trap: the case for smart industrial policy

Robert H. Wade

For a few years after the start of the North Atlantic financial crisis in 2007-08 it looked as though countries of the BRICS and MINTS and whatever others global investors choose to put into their acronyms shared a buoyant economic future "decoupled" from recession in the West. How different things now look, Brazil being Exhibit A. Through 2015 Brazil has featured almost daily in western media reports for the wrong reasons – captured in the *Financial Times* editorial titled "Brazil's terrible fall from economic grace" (14 September). The editorial reports, "The economy is in a mess. Brazil's worst recession since the Great Depression will see the economy shrink by as much as 3 per cent this year, and 2 per cent in 2016. Public finances are in disarray…".

Standing back to take a longer view, we see that between 1950 and 2010 Brazil spent the first 7 years as a "low-income" country and the next 53 years as a "lower-middle-income" country. Lower-middle-income is here defined as a per capita GDP of between PPP$ 2,000 and $7,250 a year (about $5.50 to $20 a day, in 1990 purchasing power parity [PPP] dollars).

Many other Latin American and Caribbean countries have also, like Brazil, spent over 4 decades between 1950 and 2010 as lower-middle-income countries and remain in that category today: the list includes Bolivia, Brazil, Colombia, Ecuador, El Salvador, Guatemala, Jamaica, Panama, and Peru (Felipe et al. 2010).

Indeed, just about all Latin American countries and Middle East countries had reached the lower-middle-income range by the 1960s or 1970s, and most remain in or just above this range today.

In contrast, Japan, Taiwan, South Korea, and China zoomed through the lower-middle-income range in less than 2 decades en route to the upper-middle-income range, and then, for the first three, the high-income range.

The Southeast Asian countries come between these speeds: Malaysia and Thailand spent almost 3 decades in the lower-middle range before rising to upper-middle (where they remained as of 2010, when the data set ends). Philippines spent more than 3 decades before rising to upper-middle. Indonesia spent the 25 years before 2010 as lower-middle; before that back to 1950, as low-income.

Causes of the wealth of nations

These numbers highlight the Adam Smith question, of what determines the relative wealth of nations, or relative GDP per person or per working hour. The young Smith gave the following answer:

"Little else is required to carry a state to the highest degree of opulence from the lowest barbarism, but peace, easy taxes, and a tolerable administration of justice, all the rest being brought about by the natural course of things" (1755).

Though Smith himself qualified it in *The Wealth of Nations* (first edition 1776), present-day economists continue to endorse it as basically correct. The renown professor of economics at Harvard Gregory Mankiw – author of a leading economics textbook and former chair of the Council of Economic Advisors – said in the Wall Street Journal, 2006, that

"Adam Smith was right when he said … [the above statement]."

From Exclusive IPR Innovation Regimes to "Commons-Based" Innovation Regimes Issues and Perspectives

Benjamin Coriat

Introduction

Even if this thesis has triggered a series of debates and controversies, it is now accepted that our economies can be characterized as « knowledge[33] based" where intellectual property rights (IPR) systems play a crucial role. If IPR systems, envisaged here as specific institutional arrangements around R&D and innovation activities, deserve attention, it is because at the same time : i) they mark the frontier between what are patentable *vs.* non-patentable matters, thus defining the frontier between the world of "open" *vs.* restricted access to knowledge; ii) they embed a series of incentives to innovate thus contributing to fix key characteristics of the "innovation regimes" under which the economic actors behave; iii) finally, because - as it has been stressed - IPR systems have experienced dramatic changes in the last 30 or 40 years, deeply impacting the classical routes and channels followed by R&D and innovation policies (Coriat and Orsi 2002, Jaffe and Lerner 2004). The importance of the changes that have affected IPR regimes is such that they could be characterized as contributing to the implementation of "a new enclosure movement" (Boyle, 2003), an enclosure that this time encloses, not land, but ideas and knowledge.

In this paper, after briefly reviewing how IPR systems have evolved, we draw attention to new institutional arrangements, known as "commons" (or to be more precise "*knowledge commons")* that can be analyzed as institutional innovations allowing to overcome the limits introduced, through IPR systems, with the recent extension of exclusive rights on knowledge and basic research.

In order to better understand the importance of such knowledge commons, the paper is organized as follows.

1. The first section is dedicated to the presentation of the so called "open science" principles and to the traditional role played by the type of IPR systems that prevailed after the Second World War, up until the mid-1970s. We show how the open science system has given rise, during that period, to an "innovation regime" that was very conducive to the requirement of the growth of the firms

2. The second sections shows how, beginning in the 1980s, this innovation regime was eroded by a series of "displacements of frontiers" provoked by a new series of IPR laws and court rulings which finally, have altered the characteristics of the classical open science system. If some of the large firms of the new emerging sectors (especially in Biotech and Information Technologies) have benefited from these changes of the IP regime, we argue that in many cases the new regime has resulted in important threats and obstacles to the creativity of a large variety of communities of innovators

3. In the third part we focus on the initiatives taken by different communities of innovators in reaction to the limits and shortcomings posed by the new enhanced IPR Regime. We examine how, under the name of "commons", a series of new entities were established. Based on the sharing of information and cooperation between the actors at the origins of the commons, these new entities (often defined as "knowledge commons") have given rise to new innovation regimes whose key feature is that they are

[33] For a detailed analysis of different types of «knowledge commons» see Hess and Ostrom (2007). On this issue on can also refer to Madison M. J., Frischmann B. M., Standburg K. J. (2008). In Coriat (2012) and (2015), we have tried to define the similarities and differences between "natural resource based commons" and "knowledge commons"

From catching-up to the technological frontier: challenges for knowledge governance

Ana Célia Castro

"Perhaps a crux of success or failure as a society is to know which core values to hold on to, and which ones to discard and replace with new values, when times change."
Diamond, J. COLLAPSE. How societies choose to fail or succeed. 2005.

Theoretical and conceptual framework

The first challenge to this reflection regards the updating *(aggiornamento)* of the concept of technological *catching-up*[54], given the new context of the 21st century. In synthesis, the following reflections could be suggested.

As opposed to the recent past, there does not seem to be a single technological path while a higher standard is not established. The concept of secondary innovation[55], which describes how countries test and pursue different technological trajectories, following their vocations and capabilities[56], makes the concept of catching-up indefinite – catching-up with what? It seems that a roadmap to be followed by sectors and countries is no longer available. If there were such a path, it would not necessarily be up to the countries with higher *per capita* income to hold up to the "less developed" "the mirror of their own future".[57]

---

[54] Convergence or *catching-up* is defined as technological parity or equivalence to state-of-the-art international standards. It is a process that tends to occur in a concentrated form within a given time range, and it is accompanied by high rates of economic growth, with increased productivity and international competitiveness for the sectors and companies involved. In addition to the concept of historical *catching-up,* there is the concept of technological *catching-up,* with which we will work in this paper.

The most important reference texts for studies on catching-up are: Gerschenkron (1962); Abramovitz (1986); and Hikino & Amsden (1994). See also Nelson, Mazzoleni, Cantwell, Bell, Hobday, Von Tunzelmann, Metcalfe, Henry & Odagiri (2005). Two recent theses on the subject can also be cited: Bastian (2008) and Rego (2014). Antonio Barros de Castro was the author responsible for the introduction of this approach to interpret Brazilian industrial development as a process of *catching-up,* instead of the prevailing interpretation in the ECLAC tradition, synthesized in Tavares (1973), who describes Latin American industrialization as an import substitution process. On this topic, see Castro and Proença (2001) and Castro (2003). The collection of papers presented by Castro at the National Forum can be seen in Velloso *(Antonio Barros de Castro. O Desenvolvimento Brasileiro da Era Geisel ao Nosso Tempo)*. The article *Renegade Development: Rise and Demise of State-led Development in Brazil*, in Smith *et al*. (1993), takes a step forward and discusses the role of conventions and shared beliefs in the interpretation of the most recent period in Brazilian economy. The latest version of this article is in Castro and Castro (2012).

[55] Based on Dosi's (1982) notion of technological paradigm and technological trajectories, secondary innovation sheds new light on the topic. Before the technological standards of an industry/ product/process are consolidated, developing countries may explore alternative routes according to their capabilities. A company may purchase a technology from a developed country, absorb knowledge gained via technology transfer agreements with companies from developed countries and enhance it, thus exploring new trajectory possibilities. See Wu, Ma and Xu (2011).

[56] The concept of dynamic capabilities was introduced by Teece (1998), but its roots lie in the literature of the Resource-Based View. Dynamic capabilities translate into market sensing and sizing abilities, alluding to the Schumpeterian sources of competitive advantage, which may be considered a consequence of unique innovations. Innovations, in turn, help understand other organizational and business processes of integration, learning, reshaping and transformation, positioning (location), enforcement capability ("assessment"), reproducibility and imitability of the organizational process. The Resource-Based View has its precursors in Penrose (1959) and Chandler (1977) and emphasizes the competitive advantage related to the ownership of scarce, but relevant and difficult to imitate, assets, such as knowledge. See Foss (1997), *Resources, Firms, and Strategies: a reader in the Resource-Based Perspective,* which concentrates the main contributions of this literature.

[57] Marx (1867), *Capital*, cited in this paper according to the Marx (1968) edition: "Los países industrialmente más desarollados no hacen más que poner delante de los países menos progresivos el espejo de su proprio porvenir" (Prologue to the First German Edition, 1867, p. xiv). China is perhaps the greatest example of *leapfrogging.* On this theme, see Proenca, Habert, Aredes, Camargo Jr. (2011).

Governing Knowledge: Intellectual Property Management for Development and the Public Interest

Leonardo Burlamaqui

1 Introduction[99]

"The field of knowledge is the common property of mankind."
Thomas Jefferson

The core point of this paper is the hypothesis that in the field of intellectual property rights and regulations, the last three decades witnessed a big change. The boundaries of private (or corporate) interests have been hyper-expanded while the public domain has significantly contracted. The paper tries to show that this is detrimental to innovation diffusion and productivity growth. (cf. Brown-Keyder 2007; Boyle 2008; Rodrik 2011 and Burlamaqui and Cimoli 2014 for similar lines of reasoning).The paper develops the argument analytically, fleshes it out with some empirical evidence and provides a few policy recommendations on how to redesign the frontiers between public and private spaces. The result would be a more open, democratic and development-oriented institutional landscape in the fields of knowledge creation and appropriation. This "Knowledge Governance", analytical perspective developed here proposes a framework within which, in the field of knowledge creation, diffusion and appropriation, the dividing line between private interests and the public domain ought to be redrawn. The paper's key goal is to provide reasoning for a set of rules, regulatory redesign and institutional coordination that would favor the commitment to distribute (disseminate) over the right to exclude.

In 2005, Mark Blaug made a prescient, remark in that matter:

> "It never occurred to anyone before, say the 1980s, that such disparate phenomena as patents for mechanical inventions, industrial products and processes (now extended to biotechnology, algorithms and even business methods), copyrights for the expression of literacy and artistic expressions in fixed form and trademarks and trade names for distinctive services, *could be generalized under the heading of property rights*, all conferred by the legal system in relation to discrete items of information resulting from some sort of appropriate intellectual activity". (Blaug 2005, 71-72, italics added)

For the purposes of the arguments in this paper, there are two crucial elements implicit in Blaug's statement. First, that, as recently as in the seventies, the balance between private interests and the public domain was completely different from what it has become today. Second, that what became codified, and largely accepted, as intellectual property *rights* was, until then, understood as a set of *rules and regulations* issued by the state, granting temporary monopolies to corporations in very specific cases. Recent history seems to back both Blaug's statement and my hypothesis. Until the 1970s, United States patents were seen as monopolies (a term with distinctly negative connotations at that time), not rights. In fact, in some areas of economic activity, it would have been possible to say that upholding the validity of IP was the exception rather than the rule (Brown-Keyder 2007, 159). This was reflected in IP law as well as in competition or antitrust law. In copyrights, the term under United States law was 28 years.

The early 1970s witnessed several dramatic changes. In 1974, a trade act allowed the Federal Trade Commission to bring sanctions directly against countries whose products were seen to hurt United States interests. In 1975, copyrights were expanded to over 70 years from the death of the author, and

[99] This paper is an outgrowth of recent papers published by the author (Burlamaqui: 2009b, 2014 and Burlamaqui and Cimoli: 2014).

Development in unequal societies: Brazil beyond the "golden decade"[127]

Celia Lessa Kerstenetzky[128]

Introduction

This article aims to analyze the relationship between development and inequality in the context of recent Brazilian experience during the period I call "golden decade" – Brazil's auspicious entry into the twenty-first century.

The larger premise is that intense and enduring inequalities are symptoms of underdevelopment. The more specific premise is that Brazil is a case in point, and therefore it is urgent to understand the native pattern of growth, permeated by deeply iniquitous while structuring social relations. However, instead of investigating these relationships, the text explores the exception – the golden decade experiment, in which growth was combined with an unprecedented degree of equity and democracy in the history of developmental projects in the country –, seeking to shed light on choices, elements of success, and unseized opportunities that may signal necessary rerouting for future public action.

Among the conditions determining recent achievements, I use the intersectional concept of "redistributive growth" to highlight policies to increase the purchasing power of the poorer population, particularly increasing the value of the minimum wage and targeted income programs. Among the untapped opportunities are policies for the fair equalization of opportunities, notably the decisive expansion of public social services and progressive taxation. Regarding the latter, interest lies not so much in the fiscally responsible funding function of equalizing policies, but in their capacity to limit the growing (and already very high) appropriation of national income by high-income strata and correct the strongly regressive character of the main source of government revenue, i.e. taxation.

Finally, it should be noted that this is an essay, whose main purpose is suggest paths to assess the possibilities of public action for development in its most elevated sense in the country.

The text is divided into four sections, in addition to this introduction. In the first section, I suggest the problematic relationship between development and inequality as a framework to critically reflect on Brazil's experience of development in recent decades. In the following section, the Brazilian golden age is documented, highlighting the experiment of increasing the value of the minimum wage, and previously unpublished research results are presented. Such results reveal that the minimum wage was the most important factor in reducing income inequality in Brazil, precisely as it gained value in real terms. Within this section, I propose the category "redistributive growth" in seeking to shed light on what was attempted and, to a significant extent, accomplished in the country. In section 3, I analyze the darker side of the golden decade: the bet that was not made on the steady expansion of services and progressive taxation, which is still incipient in the country, laying bare the asymmetrical character of the social contract of the 1988 Constitution: the pact of rights was not accompanied by a pact on taxation. In the following section, I explore the potential of these interventions in terms of growth through redistribution. In the final section,

[127] The author acknowledges the comments during her lecture given at the international seminar The Role of the Nation-State in the 21st Century, organized by ENAP and held in September 2015 in Brasilia. She also thanks Jaques Kerstenetzky for perusal and shrewd suggestions, and Elisa Monçores and Graciele Guedes for their help in research on public employment.

[128] Professor at the Department of Political Science and Graduate Studies in Economics of Universidade Federal Fluminense, director of the Center for Studies on Inequality and Development (CEDE-UFF) and CNPq researcher.

Advances and challenges for social development in Brazil

Tiago Falcão and Patricia Vieira da Costa

INTRODUCTION

Social progress in the past decades has made contemporary Brazil a very different country from what it was before the 1988 Federal Constitution. This process of improvement has gained speed in the last 15 years, as shown by recent evolution in social indicators. In a few years, Brazil, which had constantly been cited as an example of unequal society, gained international recognition for the quality of its social policies, for boldness in their implementation, and for the results achieved. International organizations such as the World Bank refer to the past 10 years as "the golden decade in Brazilian social development"[137].

Despite the progress achieved, the fiscal crisis and intense post-election political debates have brought up questions on the quality, scope and sustainability of social policies – topics which had been dormant and once again pervade the national agenda.

Based on a lecture given at the International Seminar *The Role of the State in the 21st Century: challenges for public management*[138], and in light of the theme proposed by the event, this text reminds that recent social gains largely stem from public policies resulting from informed policy decisions based on the provisions of the Brazilian Constitution of 1988. Although it recognizes the importance of the economic scenario to enable the project for extending social policies, it finds fault in interpretations that attribute advances only to the socioeconomic effects of growth. Moreover, it criticizes the simplistic prescription of dismantling social policies as a solution to the country's fiscal situation.

The text is divided into six sections, following the structure of the lecture. After this *Introduction, Background* quickly explores social aspects of pre-Constitution of 1988 Brazil, as well as the situation immediately after its promulgation. Then, *Social Protection and Promotion System* discusses the development of public policies that have come to substantiate constitutional principles in the social field. The section *Results* reviews the fruits of this system in terms of improving social indicators. The item *Challenges*, in turn, addresses some of the most pressing issues on the agenda for coming years, and is followed by the *Conclusion* of the text.

BACKGROUND

To understand the depth of the country's transformation since the 1988 Constitution, it is important to recall some of the historical elements of the social debt accumulated over the centuries in Brazil, and also national social characteristics immediately before the promulgation of the 1988 Constitution.

Brazil was the last country in the Americas and one of the last in the world to formally abolish slavery. For nearly 400 years, it developed a political, economic and social system based on slavery relations[139]. In the late nineteenth century, while Brazil discussed the end of slavery, neighboring countries like Argentina and Uruguay were debating universal access to education. Slavery and the delay in implementing policies to aid the poorest have left us one of the greatest known social debts.

[137] World Bank (in press), *Brazil: Systematic Country Diagnostic*.

[138] Event held in Brasília by the National School of Public Administration (ENAP) and the Ministry of Planning, Budget and Management on 3 and 4 September, 2015.

[139] On the subject, see Caio Prado Júnior (1945), *História Econômica do Brasil*.

State Capabilities as a Challenge to Public Policy*

Renato Boschi

Introduction

The concept of state capabilities has often appeared in political science literature since the 1970s, mainly in response to scant attention given in theory to the role of the state. Initially, that was due to the functional use of political system concepts in the analysis of modernization. Later, it derived from an attempt to operationalize its relations with society and the process of economic development, the state being an entity with unique capabilities, different from other actors or institutions.

When the state is brought back under the spotlight – for example, by the set of articles published by Peter Evans in *Bringing the State back in* 1985, preceded by Charles Tilly's ground-breaking "From Mobilization to Revolution" (1978), and by Peter Evans' more recent "Embedded autonomy: States and industrial transformation" (1995) – as a response to the said absence, it is then necessary to specify more clearly the kinds of capabilities which are created to give the state such a specific and distinctive role.

In contrast with these approaches, interspersed with absences and presences on state action, the state was rather emphasized in analyses on Brazil, both in approaches which identified patrimonialism as a typical feature of our tradition, and in economic history approaches, in which the extent of state intervention was highlighted as a key dimension of economic development. In the former case, one stressed mainly the appropriation of public space by segments of regional elites, a significant aspect of the state field in Brazil. However, one disregarded this important dimension of interventionism, whose effectiveness depended on the creation of capabilities. Thus, the aim of this paper is to point out some areas of public policy for whose results the generation of capabilities is a key requirement.

The aim of this paper is not offering a historical overview on the use of the concept of state capabilities, presented along with different moments in the institutional trajectory of several Latin American countries, for example, in the period of democratization after authoritarian regimes. Instead, the goal here is to point out that, similarly to the pervasive silence in past discussions on the role of the state, contemporary discussion on varieties of capitalism, characterized by an emphasis on the role of companies, has also tended to give little space to the state as such. In proposing a variety of state capitalism to characterize the reality of many Latin American countries along their paths, it is then necessary to recover the notion of state capabilities as an important basis for analyzing and understanding different types of state interventionism.

In this context, this paper will emphasize some of these dimensions of public policy related to the concept of state capabilities as distinctive feature of the current concern about the role of the state in development, especially in recent studies regarding the return of a so-called "developmentalist" perspective. In recent years, this perspective has involved state action to promote social inclusion policies, thus establishing the possibility of a growth model founded on the domestic market, especially since the year 2002, through the 2008-2009 crisis and reaching our days. Thus, considering that this crisis at first led to a relative reconfiguration in in the international system, and also in view of the leading role that China has played in recent decades, we will take a comparative perspective to reflect on which and how certain state capabilities have shown to be strategic from the perspective of Brazilian development.

Thus, this text aims to guide discussion on a series of dimensions related to the dynamics of development, especially the nature of the new patterns of state intervention and political conditions in which the role of strategic actors and support coalitions are important for the design of a country project.