

Spider Web: China Session

Anna Jaguaribe

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This note aims to serve as an additional input to the discussion on China, and a background for the research endeavors of the IBRACH-Spider Web China Group. It takes into consideration the various excellent inputs to this session and outlines the objectives of an ongoing research project on Comparative State Capacities Brazil-China, sponsored by the Institute for Applied Economic Policies.

The China-Brazil State Capacities project looks into the reorientation in development goals and industrial and technological objectives proposed in China's 12th year plan and the long term vision of the economy which this reorientation implies. The research will study the program for new strategic industries of the 12^oPlan, examine policy design, formulation and implementation tools for the program as a whole, privileging the telecommunication and information sectors. Particular attention will be given to the financing aspects, coordination between ministries and in the implementation stage, the relationship between private and public sectors. The objective of the research is to understand the policy formulation and implementation aspects of the SEI program and contrast the new industrial strategies of China with the policies being adopted in Brazil and the ongoing debate regarding the international insertion of the Brazilian Economy.

Conceptual Framework

The concept of state capacities is understood here as the ensemble of institutions, bureaucracies and instruments available to the state for the pursuit of public policies and "governance" responsibilities. The theoretical framework for the research derives from sets of interconnected analytical frameworks: the notions of State autonomy developed by Stokpol and Evans, the historical discussion over the role of institutions on development strategies (Rodrick, Hausmann, Dosi) and the current discussion/ revision on varieties of industrial capitalism.

The research dwells on the debate concerning post 2008 strategies of development for emerging economies and focuses on the how the rise of China and its consolidation as a

global economy changes both in theory and practice how we view development options and strategies. The industrial and technological achievements of China changes perceptions on innovation in late industrializers and condition the competitive process and future prospects for emerging economies. (Castro). It also makes apparent the limitations of analytical frameworks couched on classifications of market vs state led growth and north vs south.

The China-Brazil State Capacities project will look into the policy instruments being developed for the implementation of the industrial and technological innovation objectives of the 12th Plan. In particular how the SEI program evolved, changes in perceptions on economic challenges and opportunities (policy spaces) influencing State policies and strategic options. It will look into the development debate concerning growth and technology traps which may have conditioned the adoption of the SEI program and study how the new policies purport to overcome these feared structural defaults.

Issues to be studied:

- coherences between industrial and economic policies,
- nature of financing patterns of disbursement for SEI projects
- the decision making process in the implementation stages particularly in what concerns the commercial aspects of the program and relationship between SOE's and the private sector.
- coherence and the fit between the objectives of the program and perceived opportunities and constraints (international and national) in policy spaces.

The debate on development strategies and state capacities

The crisis of 2008 made more evident the flaws of strict conceptual divides regarding the role of State and Market in strategies for growth and development. Our understanding of varieties of industrial experiences increased, dismissing the notions of convergence in industrial societies, universal best practice and unhampered markets. Divergence was

revalued but with it also for a lot less certainty as to the appropriate nature and tools for public policy

Old and emerging economies dealt with the 2008 crisis in very different ways exposing the limits and sometimes virtues of political coalitions leading the governments but also the difference in state capacities. State intervention varied with regards to investments, monetary policy, management of exchange rates, making clear the diverse role of State and state capacities amongst industrial societies.

The crisis showed the limits of what had been a liberal consensus regarding the waning of the state and the emergence of an increasingly global and potentially convergent international civil society and capitalist practices .(Held , Becker). State and public action was the only available response to the crisis and traditional policies sustaining industrial production and consumption were the rule and not the exception .As observed by Weiss public policy reappeared in the United States' billion dollar investments in clean energy initiatives, in France's support for French companies with its new Strategic Investment Fund and 'Big Loan' initiative, as well as in Britain's 'New Industry, New Jobs' agenda targeting strategic sectors with a dedicated investment fund. In question then is not so much the legitimacy of State action but strategies, the appropriate targets for policy and differences in policy making capabilities.

The international Context: Indeterminacy

The still unfolding crisis shows that with few exceptions public policies have been prudent in diagnosis and prescription limited to the short and medium term. The absence of a clear global scenario hinders the definition of long term policies and awareness of economic opportunities ahead .The consolidation of China as a global player added to the difficulties of establishing clear cut international scenarios, understanding the nature of power relations and what determines political agendas(Nye) . As proposed by Naim, power seems easier to get, harder to use and easier to loose.(Naim 2012)

Indeterminacy of outcome seems to be the nature of the transition period as clearly pointed by Hugueneu. In such a context, defensive measures (in particular vis a vis China) prevail over breakthroughs in negotiations. The activism in establishing new regional trade agreement between the European Union and the US and the transpacific cooperation agreement sponsored by the US are cases in point.

In contrast to previous crisis and in particular what Piori and Sabel referred as the great divide of fordism in the 70's, the present moment does not seem to outline clear exits. The technologies which had underlined the alternative in production patterns in the 70's (the essence of the great divide) are still unfolding. The great energy challenges which will condition the long term options for technology and production have numerous outcomes

The new discoveries of oil and gas in North and South America may delay the adoption of a new energy platforms .As pointed out by Zyzman, there is a lack of clear cut economic stimuli for changing energy scenarios and many of the financial instruments which spurred the information revolution such as venture capital are poorly shaped to deal with radical changes with low economic returns.

Classical state instruments to spurt innovation such as military spending and or government procurement (the military –industrial dimension) also seems to be under revision, with very interesting implications for the logic of the industrial security establishment. The synergies between the defense establishment and innovation, best developed in the US, continue to provide vital stimuli for the market of innovation.(Weiss 2011) But, the cost associated with defense, the transformation of the international power scenario and changing war scenarios; together with the enormous current account surpluses which China has achieved point towards new manners of inducing radical innovation in situations of market failure.

Moreover, the crisis seems also to have diminished features of the globalization process which had particularly benefited Asia: the possibility of amassing large current account surpluses' through trade and the opportunities afforded China by the enormous international liquidity and high propensity for consumption of the American economy.

Different are also the growth opportunities through the exports of low cost products. Great differentials in wages, abundance and quality of labor force are diminishing in China. The global economy seems to present diminishing opportunities for amassing large current account surpluses and the competition for market advantages in national and international markets are changing the efficiency of well proven policy strategies.

The struggle to gain market shares and advantages through incremental product innovation is immense. The costs and risks associated with innovation also change with the absence of a clear cut line between product and process. As pointed out by Breznitz(2012) incremental innovation is like the running of the red queen in Alice in wonderland, much effort has to be employed to stay in the race. There are immense costs and also risks in the current innovation race and the Chinese struggle for market advantage through the setting of international standards for telecommunication products is a case in point.

There are new economic constraints facing emerging economies .It is tougher to sustain growth with redistribution with a world in recession. In the case of China, over thirty years of constant growth have created profound unbalances in the economy and new responses must be found for the shortcomings of the fiscal and financial system, the cyclical real estate bubbles, growing inequality gap and inefficiencies in government services.

For countries such as Brazil the capacity to maintain an economy with almost full employment with low investments, high consumption is clearly diminishing. The opportunities to accumulate reserves through commodity exports and use current account surpluses for internal strategic objectives are also less secure.

External constraints are also evident. China has in a relatively smooth manner reassumed its regional role as manufacturing hub and entered into a myriad of regional economic and security agreements ascertaining its role as regional power. Its success and the changed scenario in international relations are putting important caveats in this strategy. The existing and potentially increasing conflicts with the US over influence in the pacific are menacing this strategy. Strains in the relationship with Japan also render more difficulty a large economic and political entente in south East Asia which could procure immense economic and political benefits to China and facilitate the next stages of its economic and industrial development.

The crisis has also opened an internal debate on the grand strategy for China. An assessment of what are the economic and political long term tendencies in the international scenario. What are the strategic interests of China in this evolving and unpredictable scenario and how to combine strategic thinking and strategic management, or stated differently, how to use the advantages (financial and others) it has accumulated to obtain a sustainable growth in an unpredictable global economy?

The 12 year Plan in this context

The call for a reorientation of the Chinese growth model of the 12 year Plan is the result of a debate and reflections which precedes the crisis and has been evolving since the end of the Zhang/Zhu period. The plan has reform targets: welfare, fiscal and financial policies but also transformational targets: financing of innovation and consolidation of strategic industries.

As with previous planning exercises the 12° Plan is a process of partial consensus building and contains various objectives and goals established out in previous exercises. This is particularly the case of objectives regarding science, technology and education. There has been widespread consensus in scientific and technological modernization goals in since the early days of reform. The State High Technology Development Plan (863 program), The National Basic Research program (973 program) and more recently the Medium Long term Plan on Science and Technology with its megaprojects and the Strategic Emerging Industries Program all pointed in the direction of the policies consolidated in the 12° Plan.

The pursuit of technological modernization and scientific excellence has been a constant political and cultural goal which in fact precedes sector industrial policies and rarely entered in contradiction with economic policy. A sharp contrast to the Brazilian past experience where constraints of import substitution and external vulnerabilities always imposed limitations on policies of technological modernization. Technology policy has also always been coherent with educational objectives and market reforms. The mean and lean strategies to reform State sponsored research institutions is a vital aspect of this synergy of efforts and an important clue to understanding the commercial aspects of public policy (Lan)

The ambition to transform China in an innovative economy, the notion of indigenous innovation, is also spelled clearly in the last ten year science and technology plan. Yet, consistency in design and ambition does not diminish the challenges in the implementation of the plan. The difficulties seem to be manifold: new policy ground is being experimented beyond the more tested grounds of catching up policies. Furthermore the plan reacts to the crisis but is also affected by the effects of the crisis on the economy.

The stimulus package has made more difficult the task of fiscal reforms and inflation control. Problems of excess capacities related to investments in infrastructure and unfulfilled markets for alternative energies have to be addressed. It is not so easy to insulate the commercial aspects of the technology and industrial policies from economic reforms or to strike a good balance between long/short term interests (Sheng).

Reducing the weight of exports on GDP and increasing productivity in the industrial and agricultural sectors have important consequences for employment. There is evidence that employment has recovered from the initial shocks of the crisis in particular in what concerns the construction and export industries. But, it is also the case that demography, the increasing age of the population and the effects of the one child policy are having an important effect on employment patterns. Unemployment of skilled and educated cadres is present in China now.

It is on the institutional side, on the transformation of the “state capacities” and the adoption of new rules, instruments and practices to guide the relationship between State-Financing System and Market that novelties and challenges arise. Throughout the 90’s it was common to hear that the Chinese financing system was the Achilles heel of China. The resilience of the Chinese economy in the financial crisis and the importance that its investment policies had on the maintenance of economic activity in Asia has exposed the shortcomings of these views. Very few China observers will argue today that the Chinese development models needs to adapt to traditional western market practices and that the reform of China’s financing system should be molded on western practices. Yet part of the unique aspects of the SEI program is exactly the immense availability of funds and how the program will conjugate strategic objectives and commercial policies

Many elements contributed to the success of the reform period: the enormous capacity of the State to implement choice investments, the decentralized decision making which

served to spurt different platforms of technological innovation, the role of FDI in reforming and diversification of the industrial park and the technology versus market access policy.

China's three tiered industrial structure carried its own problems but also ensured the coexistence of large State enterprises and small and medium suppliers as well as multinational investors, creating a highly competitive internal market. Innovation Surveys of Booz and Mackensie (2012) indicate that most multinationals carry R/D activities in China and use it as a global platform. Most Chinese firm are need seekers consistently out performing market readers and technology drivers and find themselves according to the Booz Innovation Survey of 2012 in the most powerful category of innovators. By 2020 more than 60% of all multinationals and Chinese companies expect to conduct R/D in China for global markets. How will the new emerging and strategic industries fit into this scenario?

There is a growing consensus that the policy instruments developed for the reform and opening up period: the Deng Legacy has limits for a complex market society such as China and for the current international economic scenario. There are many indications that the direction and main contours of the new economic institutions are already in place

Political and administrative reforms began by Deng but mainly implemented in the Zhang/Zhu period changed the nature of power relations and the realms of authority of the public bureaucracy. Important distinctions were made in the spheres of authority between States/ Party/ Government, a distinction which lies at the core of the governance debate of today and that inspired many of the modifications in governmental structure and the relative autonomy of many ministries. (Shambaugh, Saich).

The organization of State enterprises and more particularly the internal governance of each enterprise became much more corporate and independent of sector ministries. The economic membership and quality of party cadres changed affecting the choice of the nomenclature and a much more open dialogue between government and technical elites emerged.

Heilman points out that the reorganization of the economic and industry ministries in a more horizontal manner I.e the creation of the NDCR and the disassociation of SOE's from sector ministries has contributed to the creation of technical elite committed to industrial

development. An elite which combines an academic trajectory with bureaucratic expertise and ensures quality and continuity in the planning exercise (Heilmann and Shin 2012).

The in depth research of Naughton and Chen (2013) on the Chinese industrial policy making process indicates radical departures as of 2003. For the authors the traditional framework through which policy making in China was analyzed: fragmented top down authoritarianism no longer applies and this is particularly evident in technology policy. Naughton and Chen argue that after 2003 there was a dramatic shift in China's technology policy both in direction and in the process of policy making. In terms of direction, technology policy became more structured, sector specific and systematic giving rise to of a techno-industrial policy paradigm. The 16 Megaprojects of 2005, the emphasis on indigenous innovation of the Hu/Wen administration, the Medium and Long Term Science and Technology Plan and the New Emerging Strategic Industries are the key elements of this techno-industrial policy.

In terms of process the policy making, Naughton and Chen (2013) argue that policy in China goes through four different phases: gestation, formulation, specification and implementation. Each of these stages is now routinized, with agreed upon rules which avoid a zero sum war amongst bureaucracies, open at the different levels to outside consultations and ideas but also organized to facilitate top-down decision making. What is the nature of this new techno-industrial policy "system" and what are the implications of this decision making process and network of institutions for the future development of the Chinese economy?

A set of questions emerge:

- What is the financing model for the SEI program, How does it interact with industrial financing in general?
- How is the program integrated into international networks of research and production?
- Most of the strategic emerging industries are within the purview of the state sector, how will they interact with the enterprises in the private sector? Will the new industries constitute privileged and insulated monopolies?

- How are technological strategies being chosen, what are the implications of picking winners for the innovation process as a whole, how open is the research process?
- How will the strategic industries interact with the industrial sector as a whole?
- Is there a progressive technological convergence, how do the new strategies relate to technological choices being made in the region?
- What are the markets for the new industries how does this effort relate to the effort to internationalize Chinese products and brands

The conjugation of large enterprises with ensured funding for mega projects has had many variations in Asia but there are unique features in the Chinese design. For one the relationship between different coordinating bodies which guarantee coherence between economic policy, industrial policies and choice of technological paradigms. While clearly a top down decision making process, the planning and project selection process involves different programming and implementing agencies and has competing enterprises as executing agencies.

Moreover the program can in theory be freed from the financial limitations of individual firm and budgetary constraints even though funding is commercially oriented. Outside of the military industrial procurement system there are very few precedents for such an unlimited source of funds and such a trial and error technological environment,

There seems to be important inter-relationship between bureaucratic, technological and commercial expertise, a circulation of elites in the formulation and implementation stages. Furthermore, China has a large epistemic community, academic circles are highly interconnected with Asia and US Universities and Chinese cadres are curious students of all foreign development experiences and in particular keenly aware of development disasters.

The Chinese economy was integrated in the global market through mastery, competitive prices and its own forms of best practice. Undoubtedly, changes in the global economy pose new challenges for China. It is more difficult to circumscribe conflicts through economic appeasement; resource dependency must be internationally mastered, competitive strategy must be reworked.

The 12 year Plan was couched on a vision which emphasized scientific and technological innovation as both achievement and necessity. Zhang Wenmu observation that policy is a result of the interplay of strategic culture, strategic thinking and strategic management is to the point. (Cheng 2012) The menace of the mid income trap, the potential vulnerability of

an economy integrated in world markets through the low end of the value chain and the defensive nature of international trade and trade barriers seem to have weighted heavily on the decision to embark on a new innovation drive.

The choices made by China will also have an impact on all emerging economies. How much of a unique model is China and what lessons does it impart on other emerging economies?

The Exceptionalism of China and the case of Brazil: Contrasts and Questions

China's SEI program is unique in scope, funding and attempt to forge new relations between the planning process and a complex market economy. There are probably no precedents for this policy effort and the institutional and historical process of development in China is in itself unique. Still, the program opens up new perspectives on public policy, in particular with regards to public policies for frontier technologies which have very significant implications for Brazil.

The China SEI program aims at setting the stage for sustaining innovation in sectors where expertise in China already exists and bring this expertise into global standards. The debate regarding the technological challenges for Brazilian industry has many different issues ranging from faulty industrial competitiveness to the stimulation of new technology sectors associated with areas for which the country has particular endowments and some valuable technological expertise. The differences in the national policy regarding the financing, commercialization and industrial application of science and technology in China and Brazil are also important. There is at present a large internal debate on how to upgrade and support and also redesign public policy for technology in Brazil.

The study of the China- SEI program is an opportunity to map out the various sector dynamics involved and identify the ranges of instruments, capacities and field of knowledge as well as actions required to start and sustain a new technology drive.

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