(Round Table – Table ronde)

"To what extent are European development theories on industrialization valid from a world point of view?"

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Discussion and debates

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INTRODUCTORY PRESENTATION

by Louis Galambos (United States, Johns Hopkins University, Baltimore)

Once upon a time, Alfred D. Chandler and I were both in Cambridge, Massachusetts. Chandler was at MIT working on his first important book, *Strategy and Structure: Chapters in the History of the Industrial Enterprise*, which was published in 1962.[1] I was a Newcomen Fellow at the Harvard Business School (HBS, 1959-1960) frantically trying to learn something about business history and finishing the dissertation I was supposed to have already completed. I was a postdoc without a doc. At that time, Chandler was still a planet in

[1] Alfred D. Chandler, *Strategy and Structure: Chapters in the History of the Industrial Enterprise*, Cambridge, M.I.T. Press, 1962.

another galaxy, far away from my daily concerns and those of most of the senior scholars at HBS. HBS's reigning pundits of business history frequently ate lunch together and also found many other opportunities to discuss the sub-discipline and its academic and intellectual context. You can imagine how important those discussions were to me. There was a great deal of debate about the failure of the many historians writing on subjects other than business to pay any attention to the work coming out of HBS and the few other schools teaching business history. There was as well a vigorous, relatively emotional discourse about economics. Unlike the history profession at large, economists did not ignore economic change and the role business played in American history.

Indeed, the economists appeared at that time to be taking over the subject of economic and business history. The business historians had felt safe when Fred Lane, the great historian of Venice and the commerce and culture of the other Italian city-states, had served as editor of the *Journal of Economic History.* But in 1960, Douglass North and William Parker, two economists, became co-editors of the journal. They leaned toward the cliometrics of Alfred Conrad, John R. Meyer, and Robert W. Fogel.[2] HBS was abuzz with concern about the future of business history and the study of closely related economic institutions. Few kind words were bestowed on the economists, who were seen as foreign conquerors, the New Vikings, who were using econometrics instead of swords.

I was a bit baffled by this particular discourse. Because my dissertation subject dealt with questions of antitrust and economic concentration, I was reading some economists and rather enjoying my encounters with a discipline designed to use explicit theory and formal proofs, all encased in a neoclassical paradigm.[3] Many of the economists interested in history were developing evidence and analyses geared to the national income accounting developed by Simon Kuznets, et al., in order to foster comparative studies of different economies and of economies over time.[4] Others were working on productivity along the lines established by John W. Kendrick.[5] In short, the economists seemed to me to be providing some essential parts of the context for studies of individual firms and industries. Since they never bothered to look inside of those firms – this was their black box – or to express any interest in the individuals who founded and then ran the businesses, I was certain they were leaving business historians plenty of virgin territory to explore.[6] So my preliminary conclusion was that unless

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[2] See John Lyons, Lou Cain, and Sam Williamson, "Cliometrics," at https://eh.net/encyclopedia/cliometrics/; and Michael Haupert, "The Impact of Cliometrics on Economics and History," at https://afse2016.sciencesconf.org/98661/document.

[3] After significant additional research and revision, my dissertation was published by the Johns Hopkins Press in 1966 as *Competition & Cooperation: The Emergence of a National Trade Association*.

[4] Richard Easterlin, et al., *Population Redistribution and Economic Growth, United States, 1890-1950*, Philadelphia, American Philosophical Society, 1957, 1960, Vol. 1 and 2.

[5] John W. Kendrick, "Productivity Trends: Capital and Labor" , in *The Review of Economics and Statistics*, 38, 3 (August 1956), p. 248-57. Kendrick published (assisted by Maude R. Pech), *Productivity Trends in the United States*, National Bureau of Economic Research and Princeton University Press, 1961.

[6] Nathan Rosenberg, *Inside the Black Box: Technology and Economics*, New York, Cambridge University Press, 1982.

business and economic historians were going to develop statistics on total factor productivity, they needed the economists.[7]

But did the economists need business historians when they were studying subjects like industrialization and the long-run aspects of economic development? Judging by the extent to which most professional economists discussed history, the answer was a simple, straightforward "No." But that was not the answer economist Walt Whitman Rostow was advancing. He wanted to absorb history in a new paradigm constructed largely with ideas drawn from neoclassical theory. While I was at HBS, I had my first encounter with Rostow and his *Stages of Economic Growth* – a publication modestly advertised as a "*Non-Communist Manifesto*."[8]

By way of Rostow and his book, I encountered for the first time the relatively new sub-discipline of development economics, an inquiry closely linked to the Cold War, the Bretton Woods institutions, and the effort to encourage some of the least developed and poorest economies in the world to make a happy transition into what was called "modernization."[9] In Rostow's stages, the economy that had successfully mastered the "pre-conditions," could propel itself into the take-off into sustained growth by increasing its investment rate from 5 to 10% of its national income.[10] While I was suspicious of this analysis, at the time I was not inclined to cross swords with Rostow or the other economists who were advising the World Bank and the other leading international economic organizations engaged in the effort to promote modernization.[11]

Then, two things happened – slowly in the 1960s and then faster in the 1970s. First, the development enterprise failed. This was especially true in Sub-Saharan Africa but also in most other parts of the non-communist world where the emissaries of growth were building dams and railroads and looking forward anxiously to the take off. All too often, the economies did not "take off."[12] That left the planners at the World Bank and other institutions

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[7] Guided by the aphorism that "beggers can't be choosers," I kept quiet about this conclusion while I was at HBS. I was a bit cowed after Professor Barry Emanuel Supple told me that too many of my sentences began with "I."

[8] (Cambridge, Cambridge University Press, 1960).

[9] Devesh Kapur, John P. Lewis, and Richard Webb (eds), *The World Bank: It First Half Century*, Washington, Brookings Institute Press, 1997. Paul Krugman, "The Fall and Rise of Development Economics," Accessed October 25, 2017. web.mit.edu/krugman/www/dishpan.html. Luiz Carlos Bresser-Pereira, "Development Economics and the World Bank's Identity Crisis," *Review of International Political Economy*, 2, 2 (Spring 1995), p. 211-47.

[10] Walt Whitman Rostow, *The Stages of Economic Growth*, p. 36-58.

[11] For an instructive perspective on Rostow and other growth theorists, see Robert W. Fogel, "The Impact of the Asian Miracle on the Theory of Economic Growth", in Dora L. Costa and Naomi R. Lamoreaux (eds), *Understanding Long-Run Economic Growth: Geography, Institutions, and the Knowledge Economy*, Chicago, University of Chicago Press, 2011, p. 311-54. Fogel positions Rostow among those economists who were analyzing exogenous and endogenous economic growth, with an emphasis upon changes in technology and total factor productivity.

[12] See, for instance, Alex Duncan, "The World Bank as a Project Lender: Experience from Eastern Africa", in Devesh Kapur, *et al*., *The World Bank*, vol. 2, p. 385-434. For fierce attacks on the World Bank's programs see the following: William Easterly, *The White Man's Burden: Why the West's Efforts to Aid the Rest Have Done So Much Ill and So Little Good*, New York, Penguin Books, 2006; and Dambisa Moyo, *Dead Aid: Why Aid is Not Working and How There Is a Better Way for Africa*, New York, Farrar, Straus and Giroux, 2009. I recently

to ponder whether their economic models were wrong or whether those leaders implementing the programs were just too corrupt or too inefficient to achieve the promised results.[13]

Without denying that corruption and inefficiency were problems, my own reflections on the growth process led me to conclude that what economics needed in this case was a stronger dose of history. The planners had to look deeper into the history of the societies that had achieved first and second industrial revolutions to get beyond the abstractions and aggregates of early development theories like the Rostow paradigm. Thinking historically and exploring history in depth, they might well have discovered why top-down programs implemented through a central government were no substitute for the wave of entrepreneurship that drove and sustained economic expansion in countries like Britain and the United States. Many of the most important changes in these nations took place decades before the results would show up in improvements in GNP per capita or total factor productivity. In both nations, small-scale innovation from the bottom up was needed to tailor growth to the nation-specific, region-specific, and locality-specific conditions that either constrained growth or created opportunities for innovative changes. Abstraction about those conditions was still important. But abstraction to a high level would leave the planners and the implementers unable to reshape a society and promote commercial and industrial expansion.

While that early expansion would take place primarily in the private sector, there were also lessons to be learned from the history of governmental settings that have fostered or retarded these essential economic transitions. The work of Douglass North, Naomi Lamoreaux, John Joseph Wallis, and Hernando de Soto provide guidelines to the types of institutions that were needed.[14]

Within that setting, the long-run performance of the economy still depended primarily upon the efforts of the entrepreneurs who searched for the society's opportunities and then built successful organizations that exploited those opportunities. Because they were dealing initially with uncertainty and then with relatively high levels of risk, more of the entrepreneurs failed than succeeded in those endeavors. If enough succeeded, they sustained the mythologies and realities of an entrepreneurial culture that could over the long-term guide men and women toward the tasks of innovation. Most of this micro-activity took place at lower levels of a society, beneath the scrutiny of government bureaucracies. It has also, for

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discussed this subject in Louis Galambos, "The Entrepreneurial Culture and the Mysteries of Economic Development," *Essays in Economic & Business History*, No. 36, 2018, p. 307-313.

[13] Compare Albert O. Hirschman, *Development Projects Observed*, Washington, The Brookings Institution, 1967, with the same author's essay, "The Rise and Decline of Development Economics," in *Essays in Trespassing: Economics to Politics and Beyond*, Cambridge, Cambridge University Press, 1981, p. 1-24.

[14] Douglass C. North, John Joseph Wallis, and Barry R. Weingast, *Violence and Social Orders: A Conceptual Framework for Interpreting Recorded Human History*, Cambridge, Cambridge University Press, 2009. Naomi Lamoreaux and John Joseph Wallis, "States, Not Nation: The Sources of Political and Economic Development in the Early United States" (2016). Working Paper, American Capitalism, Johns Hopkins University, Institute for Applied Economics, Global Health, and the Study of Business Enterprise. Hernando de Soto, *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else*, New York, Basic Books, 2000. See also, Daron Acemoglu and James A. Robinson, *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*, New York, Crown Business, 2012.

the most part, been beneath the scrutiny of development theory, as it was when Samuel Slater – with support from merchant Moses Brown – launched the industrial revolution in America in 1790. The Second Industrial Revolution had similar origins in the late nineteenth century in specific innovations in the chemical, electro-chemical, electric, and assembly-line industries that once again transformed the U.S. economy, society, and polity. So too with the Bio-Digital Revolution of the era following WWII. Guided only by economic theory, we would never have looked for the origins of the digital age in a pervasively regulated monopoly like the American Telephone and Telegraph Company. But that is where the transistor was invented and developed.

Each of these successive industrial revolutions can best be studied through a fruitful combination of history and economics. In each, individual decisions were made about technology, about organizational structures, about markets, about politics; those decisions, as well as their cumulative effects, deserve a central place in our study of the American economy.

Let me return now briefly to the pioneering business history that Al Chandler researched and wrote on America's Second Industrial Revolution. In his study of The Visible Hand, he pointed to the limitations rather than the promise of economic analysis.[15] But then, inadvertently, he fostered a very special and important combination of the two disciplines. His work on vertical integration provided an empirical basis for Oliver E. Williamson's breakthrough analysis of the economics of transactions costs.[16] Williamson's work threw some sand in the smoothly running gears of neoclassical economics, but that, I believe, is one of the important contributions history can make to the two disciplines essential to our study of the processes of industrialization and economic development.

QUESTIONS TO THE PARTICIPANTS IN THE ROUND TABLE

1 / Is it really possible to merge the approaches of economic history and those of business history about the issue of industrialization? How important is the link between economic backwardness and firm size? What are the implications for the respective roles of the financial system and the state? Does this lead to a complete reconsideration of Alfred Chandler's typologies?

1.1/ Harm G. Schröter

[15] Alfred D. Chandler, Jr., *The Visible Hand: The Managerial Revolution in American Business*, Cambridge, Harvard University Press, 1977.

[16] Williamson graciously acknowledged his debt to Chandler by dedicated his book on *The Economic Institutions of Capitalism*, New York, The Free Press, 1985, to his four teachers: three social scientists – Kenneth J. Arrow, Ronald H. Coase, and Herbert A. Simon – and one humanist, Alfred D. Chandler, Jr. Chandler, who seldom wrote blurbs, called the volume "the most valuable book written by an economist since those of Joseph Schumpeter."

I think it is not only possible, but necessary. Economic- and business history represent supplementary views, both of which surely need to be applied. They ask different questions about the same issue and apply different methods. It is necessary to relate the answers in order to receive a more comprehensive view. Chandler tried to answer economic questions on a country's level by applying methods of business history. That approach remains. His three variations of typology (competitive, cooperative and personal capitalism) can and should also be used, but as ideal-types, including the stimulation of other types. However, cooperative and, even more, personal capitalism do not sufficiently explain the course of industrialization in Germany or the UK. Already in the volume "…wealth of nations", which Chandler edited together with Amatori and Hikino in 1997, he did no longer insist strongly on his three typologies. Economic history asks first of all about *making a country*, business history asks primarily about *making(private) money*. The comparison of French and UK enterprises in "*Performance of European Business…*", edited by Cassis, Colli and Schröter in 2016, interestingly showed that states looking after *making a country* fared better than states simply leaving business to looking for *making money*. This is a strong argument in favour for combining methods of both, business- and economic history.

There surely is a link between firm-size and economic development. The industrialization of Japan, South Korea or China cannot be explained without large enterprise. Zaibatsu and Chaebol were decisive. These were business groups, and business groups are just another type of big business (though largely omitted by Chandler). In their edition on "Business Groups in the West" (2018) Colpan and Hikino showed the importance of this type of large enterprise also in the West. But on the other hand the existence of big business is no guarantee for development, as América Móvil in Mexico, Tata in India or Petrobras in Brazil show. What matters more than big business is an environment which values learning and controls corruption. Rather than countries with large economic concentration, trustful or controlled societies thrive economically. And, of course, it is the state which creates and supports such societies or not.

1.2/ Albert Carreras

I have felt as the major challenge of the theme of the session the merger of the economic history tradition on industrialization typologies with a business history approach. My feeling is that we have not yet managed to provide a satisfactory solution and, consequently, there still is a suggestive road ahead. Some papers have provided very interesting considerations on this issue. Among traditional typologies only Gerschenkron pays explicit attention to the relationship between degree of backwardness and size of factories during the "big spurt". The bigger the backwardness, the bigger the size of factories. This insight is related to the role of the financial systems and with the role of the state.

The only important business history approach that could assist us in making sense of this kind of link, is the one that considers systematically the size of firms, worldwide. The effort has been done, in various ways by David Jeremy, Peter Wardley, Youssef Cassis and, during the recent years, by Leslie Hannah and by him and James Foreman-Peck. All of them have reacted towards the ranking-based approach of Alfred D. Chandler jr in various occasions, most notably in Scale and Scope. All of them (but Chandler) mainly focus on the years immediately previous to First World War – by the end of first globalization –. Jeremy and Cassis pay attention to other, more recent, benchmarks. More interesting information is provided by Cassis, Colli and Schröter, eds. (2016). Perhaps what is needed is a fresh reading of these results – mostly Hannah complete world coverage of public societies by 1910 – but with industrialization typologies in mind.

1.3/ Norma Silvana Lanciotti (with Martin Schorr and Gustavo García)

To analyze the conditions that drive or limit economic development and industrialization, it is necessary to merge economic history and business history. The structure of the corporate elite, the organizational forms of the companies, their origin and sectoral insertion determine the limits of the economic development programs. The relationship between the state and companies, including the degree of embeddedness (as proposed by Peter Evans), also determines the limits and possibilities of carrying out a program of economic development over time. The link between economic backwardness and firm size is not as important as the origin of the companies (national or foreign) and the degree of diversification of the activities of the companies. If the companies that control the exports of an Economy are mostly foreign, they will not contribute to solving the bottleneck problems of an economy, and therefore, will hinder its development. If foreign companies control the financial system of a country, they will not invest in productive development. This does not imply a reconsideration of Alfred Chandler's typologies, it only indicates that its validity applies to the case of US, and not to other cases.

1.4/ Pierre Lanthier

The size of the firms in a specific country depends on the share of the market they manage to get. It is important to remind here that this market doesn't have to be exclusively national. Small countries such as Switzerland and the Netherlands gave birth to multinational giants like Nestlé and Philips. Many amongst the biggest companies in India, in spite of its 1.3 billion inhabitants, prioritize exports. Nevertheless, to be able to produce large firms, a country must possess a minimum of human capital hard to find in subsistence and informal economies. Human capital may emerge from an important commercial network, as did Great Britain with its colonial cities and merchants ready to take risks. It can also result from the setting up of schools or universities open to studies in commerce and engineering, like those of France and Germany. The state and the army, with their capacity to set up working teams and build infrastructure, can also generate human capital. In other words, if the size of a firm depends on its market, its capacity to grow is related to the presence of human capital generated by a local elite open to economic organization.

Under these conditions, are the Chandlerian typologies still relevant? Alfred Chandler stressed out the importance of big business for the economic growth of a country and he proposed an evolution model consisting of a succession of horizontal and vertical integration leading towards a more complex internal organization of the firm (throughput) and culminating in the multidivisional structure. Here, human capital takes the shape of an evolving managerial structure. Chandler based his model on the American experience and later he added the German and the British cases to it. Moreover, he associated himself with scholars from developed countries to test his model worldwide. However, more than geography, recent history challenged Chandler's multidivisional structure, imposing instead a return to horizontal integration. Globalization challenged multidivisional and even vertical concentration. This is evident, for instance, in the case of the aluminum industry, where groups like Pechiney and Alcan have been replaced by horizontally concentrated entities like Rio Tinto, Constellium and Novelis. Even Alcoa split its activities in two horizontally oriented units recently.[17] Nevertheless, this evolution does not necessarily question Chandler's theories: on the contrary, it may result from the addition to mature markets in the West of new and bigger markets in the developing countries, especially in Asia. From the Chandlerian point of view, this could mean a new round of structural evolution.

However, there is another dimension that can be questioned in Chandler's model: the role of external institutions such as the bank and the state. Chandler tended to describe the evolution of his model as an organic one, as something quite autonomous in relation to the rest of society. The European and, today, Asiatic experiences show otherwise. These institutions gave and still give a hand to help many companies to develop or to survive a difficult period. Thanks to the government, Ericsson has been able to set up a telephone network in Sweden that helped the company to compete efficiently abroad. A few decades later, Ericsson found itself in a crisis, the Kreuger affair, that could have made it disappear. But the group survived thanks mainly to the intervention of the Swedish banks.[18] The Chandler typologies should be applied not as if they were a model to be followed by all the countries in the world, but as an indicator of the evolution of the market. And, from this point of view, yes, business history could propose a useful perspective to economic history.

1.5/ Irina Potkina

I think that not only possible to merge the approaches of the disciplines but necessary, because in the final analysis we could receive the more accurate descriptions of the phenomenon. In my opinion, the link between economic backwardness and firm size is proxy, and nevertheless meaningful. The development of the Russian Empire in the 19th century gives us an example. The respective roles of the financial system and the state depend on a combination of flexible and time-varying factors: national historical tradition, path dependence, existing institutions, degree of economic development. Consequently, their significance differs greatly from country to country. The role of the state in various historical eras is different: from the creator to the regulator. In this framework Chandler's typologies are still meaningful.

[17] See the debate organized by Ivan Grinberg bringing together Marco Bertilorenzi, Olivier Dufour, Gerd Götz, Olivier Lambert: "Le déclin de l'aluminium européen?", in *Entreprises et Histoire*, n° 89, décembre 2017, p. 113-136.

[18] Artur Attman, Jan Kuuse, Ulf Olsson, and Christian Jacobaeus, *LM Ericsson, 100 Years*, vol. 1: *The Pioneering Years, Struggle for Concessions Crisis 1876-1932*, Obrero, 1977.

1.6/ Huang Chun and Wang Jue

Merging the approaches can be rather delicate. Historical development is continuous and multistage. The mega-enterprise organizations emerged in the 19-20 century, which was closely related to the prosperity of manufacturing industry. The importance of bureaucratization of companies was highlighted. On the contrary, companies born in the 21st century pay more attention to the creating knowledge and human themselves. Now the world economy stick to consumers' feelings, information and the increase of people's value needs. However, business organizations in developing countries are constrained by the countries' economic position in the modern world and have not yet demonstrated from unified paradigm. The Chandler's theory, needs to be revised. At least the existence of enterprises is not only an economic entity, but a social organization. When the enterprises doing the business around the world, they should consider the mutual influence of the different regional, culture and government relationship, rather than a business.

1.7/ Kazuhiko Yago

One single company could manage an influent innovation, but the company would not control the economic conditions of a country e.g. population and total factor productivity. The business is thus embedded in economy, the economy is stimulated by business, both sides independent. The link between economic backwardness and firm size, from the above point of view, appears to be weak: big businesses could be engines of development as well as burdens of economic growth at the times of change; SMEs might incarnate the economic backwardness, but also appear as an innovative cluster. This leads naturally to reconsider Alfred Chandler's typologies.

1.8/ Martin Shanahan

The links between economic history and business history are still being forged. In part this reflects the long-standing discipline divisions (micro and macroeconomics; management and industrial history) as well as the divide between qualitative, individual case studies and quantitative economic histories; something that Chandler's work began to close. As many recent business historians have noted, (see especially Scranton and Fridenson 'Reimagining Business History'[19]) the need to move beyond Chandler is clear. Despite the importance of Chandler's work, and the dominance of the Atlantic economy and American forms of economic industrialization, alternative histories of national industrialization have emerged, and are continuing to develop.

A second aspect of this tendency toward merger, in addition to considering non-American forms, is recognition of complementary institutions, such as the sophistication of the financial system, the level of savings, the rule of law, to name but three, and that these elements differ in form and process over time and place. Thus an important step in moving economic and business history models beyond a single dominant typology is to recognize and systematically

[19] Scranton Philip and Patrick Fridenson, *Reimagining Business History*, Baltimore, John Hopkins University Press, 2013.

understand the interconnections between complementary components of the society that combine to advance industrialization. In answer to the question – can economic and business histories of industrialization merge – the answer is likely to be yes, but only through the adoption of multiple frames of reference and a recognition that more than one path exists toward industrialization.

1.9/ Grietjie Verhoef

Enterprise, capital, labour and resources, human and natural, constitute the economy system. The macro-economic approaches to development, which encompass the process of industrialisation, fix attention on the macro level. Enterprise and the interaction of the entrepreneur with the macro-economic context, cannot be separated from the macro-context of its operation. Sustainable industrialisation starts at the entrepreneurial industrialist, an entrepreneur, a businessman. This was evident in the development of the mining industry in South Africa, subsequently leading to aligning industries. A symbiosis of macro policy on economic diversification and entrepreneurial enterprise in manufacturing, leads to a convergence of an enabling industrial policy and innovative business. This dynamic unfolded in South Africa, but was less apparent in the rest of Africa, where the strategic engagement between state and business/entrepreneurs, failed to develop diversified economies. Approaches to the macro context in Economic History supplement the Business History micro-centred enterprise approach.

As was illustrated by Soviet state-driven industrialisation, the absence of the entrepreneurial market dimension in business, left the massive heavy industries completely inefficient. In South Africa business interests lobbied the state for industrial protection and policies supporting industrial enterprise. With economic growth came structural diversification and small enterprises expanded into large corporations, able to innovate, implement new technology and grow production. Large business units indeed developed a strong capital structure, manufacturing and/or distribution network and managerial expertise, which facilitated industry expansion. This is why South African industrial and financial conglomerates are the leaders in Africa. Industrial policy on the macro-level and business developed in tandem, as market incentives supplemented state policies. As state policies enabled the development of a diversified economy, so did entrepreneurs in mining, manufacturing and finance grasp the opportunities of the market to grow.

2 / Are theories of industrialization formulated by A. Gerschenkron (economic backwardness), W. W. Rostow (take-off and leading sectors) and W. A. Lewis (dual economy model) still relevant? Does the economic emergence of Asia not offer the opportunity for a renewal of approaches (Justin Yifu, Kim Tai-Yoo for example)?

2.1/ Harm G. Schröter

The theories of Gerschenkron, Rostow and most others have now passed the age of two generations or more. Some issue, such as the idea of a short, measurable period of take-off, have to be dropped, while others, for instance the idea of a “leading sector”, can be upheld. Gerschenkron’s idea, that in the beginning a liberal economy could thrive, while later the state and other institutional players are more necessary, surely is true – on the one hand, but on the other hand it is so broad and sketchy that it offers only limited use. Surely new theories need to be elaborated. These need to be built not only on one country or on Europe but on a broad combination of cases. For a new and comprehensive approach such initiatives as the *Theory and Empirical Performance* project need to be organized and orchestrated for quite some time, before on a broad basis of information a new, comprehensive theory can be suggested. At the same time not only cases of success need to be taken into account, but also failure.

2.2/ Albert Carreras

Traditional typologies of industrialization still are surprisingly adequate to understand the challenges of developing and emerging economies. Gerschenkron and Rostow make a lot of sense. I would like to remind that the economic ideologue of Chinese industrialization – Justin Yifu Lin – has always had in mind Gerschenkron and Rostow typologies and W.A. Lewis dual economy model. His books and papers are very illuminating. I was very impressed with his strict “typologies of industrialization” based lecture on Chinese industrial revolution. Justin Yifu Lin is extremely interesting – starting with his own life. He has PhDs from Beiking University and from Chicago University! He has been Chief Economist of the World Bank.

Another name that views the world with Rostovian glasses is a Korean scholar, Tai-Yoo Kim, coauthor of *The Secrets of Hegemony* (Springer, 2017). Both authors pay a lot of attention to the dynamics of structural change – from agriculture to industry. Kim also from first to second to third and to fourth industrial revolutions.

2.3/ Norma Silvana Lanciotti (with Martin Schorr and Gustavo García)

The economic emergency of Asia contributes to review the patterns of industrialization of peripheral economies, in particular those of the southern cone of Latin America. Although the international conditions, the geopolitical context and the social structure of the Latin American countries differ substantively from the East Asian countries, we can identify some useful elements of these experiences. On the one hand, we must reconsider the economic specialization based on comparative advantages as the main option for underdeveloped countries. On the other hand, we should emphasize the role of the State in the process of industrialization at different levels: policies of “protectionism for learning”, subsidized financing, regulation of productive chains, etc. Finally, it is necessary to accomplish policies for development to selected strategic sectors and agents with a clear (and consensual) system of “prizes” and “punishments”.

2.4/ Pierre Lanthier

Theories of industrialization (or transition theories) have proliferated since Karl Polanyi's classic, *The Great Transformation*.[20] Many, including myself, still get inspiration from this book. However, today, new attempts to better address the subject are made as a result of two recent phenomena: the limited success of the Washington Consensus and the tremendous growth of China. For the first time, the rise of emergent countries has given new models on which economists can work. It is no longer necessary to refer to the British or the German cases to build up a transition model for developing countries. Asia, in particular, is producing successful experiences that might emulate Africa and South America.
Economists like Justin Yifu Lin and Tai-Yoo Kim[21] both acknowledge the limits of neo-liberalism and the need to conceive theories better adapted to today's developing countries. As Kim suggested it, today's debate in political economy should not oppose Hayek to Keynes, but the strategies behind developed economy to those emerging from the developing economies.[22] And both economists insist on the necessity of keeping the government as a major actor within the economic transition. Not a government that would suppress the private sector and essential freedoms, but a government that would guide and facilitate the growth of private and public enterprises.

In many respects, these new theories extend those of Alexander Gerschenkron about the necessity of bigger institutions as industrialization gets more capital intensive. Actually, governments are as necessary as ever, but for additional reasons beside capital intensity. The present industrial revolution, based on information technology (IT), requires externalities that are assumed generally by public institutions, such as education and regulation. Moreover, the size of the Asian market is such that it redefines the industrial structure of the OECD countries, and consequently the state is bound to interfere to protect the national economy in the process.

Now, should we hurry in theorizing the Asian experience? A lot has been written about China, South Korea, Taiwan and, to a lesser extent, Viet Nam. India has also interested economists, but its uneven growth and unstable politics make it difficult to theorize from its experience. My view would be to extend further the analysis of these countries and include others like Indonesia and the Philippines in the theoretical reflection. What is going on right now is a developing experience. Any theory based on it could be challenged by an unexpected event or situation. Moreover, the emergence of China and India is not unprecedented. The taking off of the US before 1914 had an impact on the industrial economies in Europe. A comparison of the two periods would be instructive here.

2.5/ Irina Potkina

[20] Karl Polanyi, *The Great Transformation. The Political and Economic Origins of Our Time*, Boston, Beacon Press, 1957 (first edition: 1944).
[21] Amongst their numerous publications, one can consult: Justin Yifu Lin, *Economic Development and Transition: Thought, Strategy, and Viability*, Cambridge, Cambridge University Press, 2009; and Tai-Yoo Kim and Almas Heshmati (eds), *Economic Growth: the New Perspectives for Theory and Policy*, Heidelberg, Springer, 2014.
[22] Kim, *op. cit.*, p. 305-6.

The theories are still useful for describing and interpreting individual phenomena. In this sense, they are relevant, but strictly limited by time and specific national economies. The theories have lost its universal character and turned out to be that is to say “local”. For a large group of developing countries on their road to industrialization Rostow’s idea of leading sectors is very significant. It is true for the modernization model of the Russian Empire at the turn of 20th century and for the contemporary Russia.

2.6/ Huang Chun and Wang Jue

In China, the theories of these economists are still very popular, especially the Rostow, but they seems one-sidedness in explanation. Rostow means that countries at different stages of development should have different policies and expectations, which was decided different roles of government. Lewis’ theory implies the structural change path of labor force in the latecomer countries: many of the labor force exists in the traditional sector, which seems to constitute a stage of restraining technological development. Many of Chinese scholars are also using this model to calculate Lewisian turning point. Both Rostow and Lewis took the traditional sector of social development too passive and too static. It’s the same as the modern sectors facing the shock by the economically developed areas. If the traditional sectors have power to absorb technology and carry out transformation, it’s also possible to keep pace with the development with the modern ones. In China, the experience is not that the surplus labor force stays in the traditional sector, but that labor is more plentiful compared with capital and has substitutional significance to technology. Therefore, even if the modern sector more came out, it will not be able to increase the relatively value of the labor force. Only when the labor force becomes scarce it would be possible. Beyond question, the development experience of East Asia conforms the judgment of these development theories in some aspects, but as a new paradigm, it also puts forward some possibilities for revision of the western ideas, especially in today’s China. Perhaps it is more explanatory to observe such factor as culture, ideology and history from the perspective of long-term economic development.

2.7/ Kazuhiko Yago

As referred to in previous studies, those theories are often “translated” and reinterpreted in the historical context of development and growth. The international institutions such as the World Bank also made use of the theories, rather than keeping one model as a single measure. The economic emergence of Asia suggests us to rethink of the theories such as the Lewisian Turning Point, which has not been clearly observed in recent Chinese case.

2.8/ Martin Shanahan

When it comes to explaining the path to industrialization, ‘one size does *not* fit all’. The models of Gerschenkron, Rostow and Lewis were based on observations of particular historical periods and patterns of development from which they sought to extract the critical factors that explained industrial development. The central issue is which of the factors they saw as critical are applicable in other societies, with different cultural and institutional norms, and different levels of technological development.

As Tai-Yoo Kim and Daeryoon Kim have recently highlighted, underemphasizing sectoral differences in national histories while overemphasizing similarities can mislead[23]. Justin Yifu Lin has noted the need for the complementarity of economic structures at critical stages of development[24]. Yet another under-emphasized elements includes the nature (exploitative or developmental) and extent (marginal or overwhelming) of international contacts between nations. Not only the economic emergence of Asia, but the developmental history of Africa and the trajectory of many South American countries offer numerous opportunities to develop our understanding of the various elements that impact on industrialization. As economic and business historians we need to look more closely, at the evidence detailing the differences (as well as similarities) between nations' various paths to economic industrialization.

2.9/ Grietjie Verhoef

The theoretical explanation of the Rostowian stages of development explains the critical trajectory of industrialization in South Africa. During the transition from a primary economy to an emerging industrial economy the enabling role of the state, as suggested by Karl Polanyi, constituted a crucial factor. The broad outline of the development trajectory emphasising the introduction of technology through mechanisation, indeed characterised the industrial take-off in South Africa. The advanced education and research context of South African tertiary institutions and education system, contributed to the development of human capital. In other African countries two factors held a similar development back: under investment in education and human capital development, and a state failing to embrace the importance of technology acquisition.

While South African industry could acquire advanced technology from advanced nations, as suggested by Gerschenkron, much of the required technology was developed locally. This was the case in the technology of deep-level mining, CTL technology and the innovative GTL technology. Gerschenkron's theory of catch-up is especially relevant for most African economies, providing that industrial development is prioritised by the state. The failure of Sub-Saharan economies to perform comparatively to the South East Asian economies, does not refute Gerschenkron's theory on the advantage of latecomer nations, but underlines the crucial role of a benevolent capable state prioritising industrial advancement. One dimension of the Rostowian model in which South Africa and other African economies fail to perform, is with respect to domestic saving and investment. National savings levels are insufficient to fund domestic industrialisation and cannot be compared to any degree with domestic savings and investment levels in Japan or South East Asian countries. African countries heavy dependence on foreign substantially undermined the development of a domestic work-ethic and productivity drive.

3 / What place should be accorded to economic sociology, compared to neoclassical, structuralist or institutionalist approaches in the analysis of development differentials,

[23] Tai-Yoo Kim and Daeryoon Kim, *The Secrets of Hegemony*, Singapore, Springer, 2017.

[24] Lin, Justin Yifu, *New Structural Economics: A Framework for Rethinking Development*. Policy Research Working Paper; No. 5197 : World Bank, Washington, 2010.

especially around the question of the respective place of the market and the State? What is the relevance (or importance) of the link between economic modernization and institutional and political objectives?

3.1/ Harm G. Schröter

I think the theoretical eclecticism used traditionally in history is very suitable and fruitful; meaning: all approaches with a potential for explanation are O.K. After the collapse of "real existing Socialism" also Marxism as the last comprehensive and philosophically founded system has failed, we consequently look for theories of medium reach for explanation. We may understand *market* and *state* as two opposing points of a single line. On that line there is a continuous change from one side to the other. But this observes only one of several of such lines of continuum. Others need to be added in order to form a radar chart, which might be useful in comparison.

But social economy is a key-word indeed. State and market are necessities for development, but not sufficient ones. Trust and support for agreed rules are required. When loyalty is less to the state but more to, for instance, a clan, a tribe or a religion, economic development of that state is difficult because of these competing loyalties. Oil-rich Nigeria can serve as a negative example while Sweden as a positive one: During the 1990s Sweden was in economic trouble and the parliament voted that henceforth the annual state-budget should have not new debts but a small surplus. Political subdivisions were suggested doing the same, but not sanctions were included for deviation. In spite of this, all regional authorities and all later governments followed that rule in spite of the fact, that parties, which later came to power, had fought that rule in parliament. Economic success of the Nordic states is built above all on trust and rule-observation. Such socio-economic behavior needs to be more taken into account in our historic explanations without dropping neoclassical, structuralist, institutionalist or other approaches.

3.2/ Albert Carreras

A lot of literature making sense of economic modernization has institutional or political roots. This tradition can always be related to Marx. Barrington Moore, Stein Rokkan, North, Wallis and Weingast, Acemoglu, Johnson & Robinson, share a common goal: to explain the interplay between political and economic developments. How does this relate to business history is a fascinating challenge. Recently we have had the contribution of Jared Rubin on the failure of the Middle East that points at directly at the firm in the Muslim world.

3.3/ Norma Silvana Lanciotti (with Martin Schorr and Gustavo García)

Economic sociology can contribute a lot to the comparative analysis of development between countries, as economic development is associated with "sociological" factors, such as: the characteristics of economic agents, the logic of accumulation of the different fractions of capital and the behavior of different segments of the business elite, the nature of state intervention (public policies, regulatory environments, etc.), the socio-political disputes that arose when a new economic plan is implemented , the prevailing social coalitions, etc. It is also necessary to consider that the "transition to development" gives place to conflictive situations as a consequence of the promotion of activities not related to the economic specialization and the international insertion of the country. Also, the dispute about who should provide the resources to finance the process of industrialization is a topic frequently analyzed by economic sociology.

3.4/ Pierre Lanthier

Economic sociology should be practised along with a more standard approach to economy. If the globalization has brought similar technology and rules for competition, there are nevertheless many ways their reception can occur around the world. Of course, one must avoid sociological determinism that would bring simplistic explanations. However, several elements explain why some countries can develop their human capital better than others. Amongst them, the existence of a local elite, be it a *bourgeoisie* or trained professionals, both with a propensity for national or regional development. Its members generally know each other and can conceive projects together beyond the public-private ideological barrier.

This elite tends to push education as an absolute priority. Education matters for the acquisition not only of knowledge, but also of a social discipline necessary for the functioning of the industry and of the many public institutions dealing with economy. This discipline is not spontaneous. It can require generations to be implemented. During the 19th century, in Carmaux (France), it took three to four decades for mine owners to persuade their workers of peasant origins not to leave their work at the end of summer to participate to the harvesting.[25] School is essential to instill social discipline. So are military service, reform programs replacing harsh repression in jail, religious observances, and so on.

Such an elite is also driven by the ideology of collective development. In the last century, socialism competed with capitalism as to find ways to improve the material condition of the population. This sense of competition is perhaps the most useful for economic growth. It can be enhanced through nationalism or, more precisely, nationalist developmentalism. J.N. Tata, from the end of the 19th century until his death in 1906, made investment campaigns across the Indian subcontinent in order to erect a major steel factory in the Eastern part of India and a hydroelectric power house to feed the cotton mills in Bombay. These projects were made in accordance with the Swadeshi movement, which manifested defiance to the British administration.[26] W.W. Rostow[27] mentioned how political patriotism was quite often followed by a nationalist approach to economy.

3.5/ Irina Potkina

[25] Rolande Trempé, *Les mineurs de Carmaux, 1848-1914*, Paris, Les éditions ouvrières, 1971.

[26] Pierre Lanthier, « L'électrification de Bombay avant 1920. Le projet de Jamsetji N. Tata», in Dominique Barjot, Danielle Lefeuvre, Arnaud Berthonnet et Sophie Cœuré (dir.), *L'électrification outre-mer de la fin du XIXe siècle aux premières décolonisations*. Paris, Publications de la Société française d'histoire d'outre-mer/La Fondation EDF, 2002, p. 211-233.

[27] Walt Whitman Rostow, *The Stages of Economic Growth: A Non-Communist Manifesto,* Cambridge, Cambridge University Press, 1960.

I think economic sociology is very important because allows to study the totality of socio-economic processes related to markets, the state, households and individuals. The theory helps to reveal the peculiarities of development, since these processes and historical context differ from country to country. The success of economic modernization is closely connected with institutional and political transformation, and therefore its main objectives are not only catching up the advanced countries but stable and self-sustaining development.

3.6/ Huang Chun and Wang Jue

Understanding the modernization transformation of one society with a historical tradition, economic sociology perspective and methods are needed. Taking China as an example, in the analysis of the differences in development, the neoclassical theory fails to explains that why Chinas had a developed market system in the Ming and Qing Dynasties but did not develop modern economic factors. The relationship between the existence of the market and economic development needs to be re-examined. Institutionalism might be too rational and utilitarian on the institution. Obviously, the efficiency of the institution cannot explain why it exist. For example, in the traditional Chinese land right transaction, there is a separation of ownership and management right. The seller is given the right to redeem the land at and appropriate time. This undoubtedly increases the complexity of the rights transaction, but as a true “fair trade”, it is necessary. As for structuralism, it regards the development of a society as a relatively mechanical one. In the late-development countries, the government undoubtedly regards economic modernization and industrialization as the top priority. And from China’s experience after the 19th century, the weakening of state power is usually seen as the biggest obstacle to modernization. A unified and stable central government is the premise of economic development, however, the construction of society is also needed. The formation of autonomous enterprises, professional unions and even new social concepts cannot depend on the government. The emergence of new economic organizations must be based on the society.

3.7/ Kazuhiko Yago

Major role to be played by economic sociology may be to coordinate neoclassical, structuralist or institutionalist approaches. To take up the case of the Japanese economic development after WWII, the neoclassicals would demonstrate productivity rise, the structuralist may refer to dual structure of Japanese agriculture and manufacturing, while the institutionalist might emphasize the capitalist regime under the American occupation and new constitution. Each of their conclusion is persuasive, but economic sociology would make clear how the people and business acted in these circumstances, and how the above different conclusions were amalgamated into one historical image.

3.8/ Martin Shanahan

Economic sociology certainly has a role to play in alerting business and economic historians to factors outside the neoclassical, structuralist or institutionalist market models used to explain industrialization. More subtly, economic sociology can alert us to the fact that different communities and societies view institutions such as markets, trade, property rights, and so on, through different perspectives (such as relational perspectives) and that while the labels for these institutional elements may be similar, the perspectives through which these factors are seen differs between societies and times. Awareness of this can improve researchers' search for historical evidence and improve their understanding of the relationships that create and sustain the institutions used to depict the transition toward industrialization.

3.9/ Grietjie Verhoef

The long-term forces that grow the wealth of nations (Adam Smith) will expand community capital only if people are ambitious and driven to achieve such elevation. Macro-economic discourse since the 1980s noted the failure of Sub-Saharan African, Latin American and South Asian economies to 'catch-up', but Paul Romer turned to the 'endogenous' drivers of economic growth. Greater emphasis on investment in knowledge and human capital will spill over into new technology, which will support the human capital enhancement of productivity. At this level the dimension of ambition, work ethic and human agency benefits from the explanation by Max Weber of earlier European economies' performance. Whereas the discourse on the protestant work ethic has deepened to a wider consideration of cultural and religious dimensions of human dedication, these theories have shed a highly illuminating light on the course of economic development and industrial growth in South Africa. The convergence of a nationalist ambition of Afrikaners to pull themselves from poverty and economic marginalisation, and state policy to assist a Gerschenkronian catch-up, delivered the strongest growth in the economy and the longest upward business cycle in the country's history. Equally, as African states gradually embraced elements of the market economy, African economies performed strong growth since the first decade of the twenty-first century. Only as the more market enabling context rendered improved (still insufficient) investment in human capital, has 'Africa risen'. As technology became relatively cheap and readily accessible, access to knowledge enhanced human capital is the x-factor in economic growth and diversification.

4 / Most of the work proposed in the framework of the *Theory and Empirical Performance* project focused on the period after the Second World War: is it possible to place the notion of catching up at the center of the analysis? Is it possible to adopt this concept for earlier periods? Can we always talk about first and second globalization? Can she adapt to regional specificities? How can it take into account the strategies of actors, in particular companies? Are the learning by doing and path dependency concepts still relevant? Or should we prefer Michael Porter's approaches in terms of relative competitiveness and cluster effects? Does the industrial district concept remain operational?

4.1/ Harm G. Schröter

The *Theory and Empirical Performance* project is founded on three main ideas: 1) Industrialization-theories (Marx, Rostow, Gerschenkron etc.) were used as tools in the Cold War. Since that period has ended, we now can evaluate their potential without ideological mist. 2) Some of these theories were applied in several countries; Tanzania for instance for years followed the economic dissociation-theory. Today we are in the position that the empirical performance of these theories can be evaluated. 3) Obviously there is no golden way of development. Consequently it is worthwhile to combine *theory and empirical performance* of these theories in order to stepwise construct a modern and better one. At the centre is, of course, the idea of catching up; that was the intention of most attempts, while those of a "third way" all failed.

Porter's writings are excellent and very useful; however tuned to today's needs. From a historian's point of view they are static. One would need several of similar measurements of relative competitiveness in order to find out something about development. – One more approach to be tested! I am convinced that it will show a substantial path dependency, which rests not only in the economy, such as on sunk costs, but much more on what people have learned and how they used to behave (e.g. rule-bound? Trustful?).

The concept of industrial districts is useful, though of limited use. First it is useful to draw the reader's attention to the fact that all industrialization is regional or even local. The British industrialization left vast parts of the country, actually their majority, untouched. There was little or no industry in Sussex, Essex or East Anglia. In Italy it affected only small parts of the North, leaving the South to itself, and even small countries, such a Switzerland, developed on a basis of local or regional industrialization; for instance chemical and pharmaceutical industry emerged only in the town of Basel. All national industrializations are statistical aggregates of industrial and non-industrial districts, as Alfred Marshall described it already 150 years ago. But the concept is still useful as it reminds politicians that investment concentrated at a few places is much more useful than one evenly spread over the whole country (from an economic point of view, though political elections may follow different rules).

Of special interest are industrial districts which exceed over political borders. Europe, which is characterized by small countries, has several of these districts, for instance the Öresund district comprehending the Danish capital Copenhagen and Sweden's third largest town Malmö. Other districts reflect the concept in a more specific way: the machine-building industry of German's South-West is intertwined with that of northern Switzerland. But there are also a few cross-border districts in large states, such as the common automobile district of the Michigan, USA and parts of Ontario, Canada. In any case, the approach of industrial districts is a useful tool, a method of analysis and maybe politics, but not a theory with the potential of explanation.

4.2/ Albert Carreras

Most of the focus of the theme is on the post second world war era. Perhaps a unifying theme is "catching up" – an inclusive concept word for all the industrialization typologies –. Catching up encapsulates many elements, including the willingness to grow.
The other theme for post 1945 world is the extent or not of globalization. The backlash to the first globalization lasted for almost half a century. Implementing the second globalization has

taken another half a century. It seems that we are entering into a new backlash era. Opportunities to industrialize might vary a lot according to global context and to "regional" (world regional) specificities.

4.3/ Norma Silvana Lanciotti (with Martin Schorr and Gustavo García)

Except in the activities associated with comparative advantages, the southern countries of Latin America show large productivity gaps compared to the central countries and those of East Asia. Latin American economies have a high degree of structural heterogeneity, so the "catching up" continues to be a great challenge, especially in the current phase of capitalist globalization. In this context, there are many lessons to be drawn from successful experiences regarding the criteria of state intervention and the recurrence of active and targeted policies, often adapted to the characteristics of the sectors and agents to be promoted (that is, not only macroeconomic or horizontal policies).

In the context of globalization and the predominance of global value chains (GVCs), there is very little that can be done in terms of socio-economic development, since the region does not have much to offer beyond its comparative advantages. The problem is this kind of specialization is not very dynamic in terms of the creation of employment, income improvement, or the increase of industrial and technological linkages (not to mention the critical environmental aspects that are usually associated with the exploitation of natural resources). Consequently, industrialization is an imperative for the achievement of "catching up", but also it constitutes a challenge of the first order in countries with high social gaps.

4.4/ Pierre Lanthier

One can see globalization as a process that pushes all the nations in the world to obey the same rules and practices and consequently to facilitate the circulation of investment. These rules and practices have been summarized in the early 1990s in what has been called the Washington Consensus. The IMF and other development banks promoted this consensus strongly. Today, there is a general agreement amongst economists and political scientists about the limitations of the consensus and even about its negative aspects.[28] However, the new set of rules has been put into effect and has achieved some results. There is one reason explaining this partial success: the worldwide willingness to catch up, not to be left behind technologically speaking, to participate as much as possible to the international trade. This willingness does contribute to the persistence of globalization in spite of the ambient populism and its tendency towards protectionism.

There is nothing new about catching up. During the 19th century, countries such as Sweden and Germany did adopt policies stimulating the adoption of new technologies within their respective territory. France, after its defeat in 1870, made a point of keeping pace with Germany, even if it was not always successful. In the 20th century, the consciousness of many countries and even regions about the need to catch up led to publications deploring their

[28] Lin, *op. cit.*

backwardness and promoting national resurgence. The United States was regularly shown as the model to emulate. Economists tried to put forward various catching up policies. It would be interesting to analyze the evolution of their ideas on that specific subject.

There have been numerous policies, from deregulation to open regionalism, stimulating the insertion of local and national economies in the globalized exchange. Do these policies necessarily lead towards an international path dependency, in which the newcomers have no choice but to follow the technological channel set up by their predecessors? To be sure, the emergent countries so far have borrowed many technologies from the OECD members. But so did the OECD members amongst themselves. The application of a technology, especially if it requires sophisticated knowledge, is path dependent. Companies prefer to borrow a well-established technology instead of implementing a new one. It pays more to improve on an existing technology. The only time where technological competition is profitable is during the first years of a major invention. For instance, at the beginnings of the personal computer during the 1970-1980s, many brands were on display. It is only years later that competition limited itself to a few groups or companies and, in this process imposed path dependencies.

To summarize my point of view, there are three prerequisites to a successful integration into today's globalization: 1) the presence of human capital, that is, qualified personnel able to work in teams; 2) the willingness, within the economic elite, of working for the common development; 3) a minimum of social discipline imposed on the entire nation, in particular through education.

4.5/ Irina Potkina

The concept of catching up is well suited in analyzing industrialization process of the countries-followers, including experience of the earlier periods. However, this is only part of the problem because long-term objectives wider and more sophisticated. As for the notion of globalization we should proceed from the fact that this process is restarting and we can talk about several waves during the last three-four hundred years. National economies in different historical epochs go through these waves accordingly to the specific economic challenges.

4.6/ Huang Chun and Wang Jue

Since the outbreak of the Industrial Revolution in Britain, there has been a divide between the fore-developmental countries and post-developmental countries all over the world. "Catching up", being a national goal, might be insist a long period. But it seems that if we go back to the 17th century or earlier, in the long Malthusian period, the significance of catching up may become less obvious. The question that we used to talk about globalization a little bit too much: most wave of globalization inspires people and promotes the progress of civilization. At the same time, it's important to reassess the significance of globalization, especially in today's tough time. The first and second globalization already happened ,but it cannot prove the globalization as a Inevitable wave, especially in Europe and the Unites States in recently. Is globalization bound to bring about regional economic growth? Is the theory of globalization able to be adapted to all local conditions? it need to be proved in the future. So the catch up theory cannot apply to the whole world. Some countries have to be more international and open, instead of the other way to development. Michael Porter's theory may be more practical, but it's worth discussing how to equate national competition with company competition and how to indigenized the factors in the world competitiveness.

4.7/ Kazuhiko Yago

The term "catching up" was used to represent a process of development by a country as a whole, as has been the case of Truman "Point Four" thesis in 1949. The concept did not take into account the strategies of particular companies, nor regional specificities. What we need to consider is to create a new concept to describe the dynamic process of innovation and development both in micro and macro level. Michael Porter's "Diamond Model", including both the enterprises and the government, may be a hint for historians to think of a more operational concept.

4.8/ Martin Shanahan

There are so many elements in this question that I will address only one or two. At the present time, with growing concern about climate change, species loss and the growth of environmental history, the centrality of examining economic and business history through the lens of 'catching up' is likely to change. The mid 20th century focus on material progress (measured by factors such as GDP her capita) and the relative position of nations in that process will be tempered by a wider consideration of the environmental cost of those developments. While this will doubtless highlight alternative environmental pathways of development, it is likely that economic and business historians too will have something important to say about pre 20th century developments and their environmental impacts. Some of this is already emerging with studies about the history of energy use, (Kander *et al.*[29]) and the resources consumed by industrial processes. This shift in focus from GDP to wider impacts will also highlight regional differences (and differences in comparative advantage) that are a consequence of geography, typology etc. This opens the possibility for richer and more nuanced research into business and economic history in the future, as questions of industrialization and development are examined from more than a single perspective and with a deeper awareness of the importance of considering regional and environmental opportunity costs.

4.9/ Grietjie Verhoef

The discourse on industrial development has progressed from a static approach defining country and industry competitive advantages to the dynamically changing advantages in global markets. Historically the first and second industrial revolutions happened, as was the case with the first and second generation globalisation of enterprises. The question in a dynamically moving competitive environment is indeed as Porter suggested, now about different levels of competitiveness in changing waves of globalisation. As entrepreneurs from

[29] Astrid Kander, Paolo Malanima and Paul Warde, *Power to the People. Energy in Europe over the last five centuries*, Princeton University Press, Princeton, 2013.

emerging economies challenge market leaders, not necessarily in scale and scope, but with innovation and consumer loyalty through cultural specificity, such as ‘buy local’ campaigns, or new products, such as Mark Shuttleworth’s technology (digital certificated and internet security verification), industrial development will take-off outside the current industrial core. The international transmission of knowledge and technology through the fourth industrial revolution, has shifted the boundaries of industrial development. Stronger industrial growth in South Africa , as well as the rest of Africa, depends on the optimal utilization of local endowments, enabling state policies and human capital development. The latter has been crucial to the leadership South Africa has taken in industrial development in Africa since the 1920s. South Africa and Africa have missed the second industrial revolution, but are participating fully in the fourth, as Gerschenkron anticipated. The sustainability depends on human capital, both at the level of state policy and enterprise innovation. Porter’s notion of relative competitiveness is important. It takes account of the dynamic fluidity in corporate and industry leadership globally and it provides for the best minds to take enterprises and industries out of a marginalised geography, into a successful global competitor. This phenomenon has already been illustrated in the chemical and mining industries of South Africa.