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研究課題名（和文）China's State Capitalism and Its Implications for Growth and Productivity

研究課題名（英文）China's State Capitalism and Its Implications for Growth and Productivity

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研究成果の概要（和文）：本研究では、最先端の方法論を用いて中国経済には市場のゆがみが依然残っていることを示している。中国の成長率はWTO加盟後の年率10%以上から2012-17年の6%未満に低下した。同時に、経済の効率性パフォーマンスの重要な指標である全要素生産性の成長も、年間約1.5%の上昇から1.1%の低下に転じた。

これは政府の介入による深刻な資源配分の非効率性が、より効率的な民間企業を締め出す一方、赤字プロジェクトへの過剰投資を行う国有企業または関連企業の利益を誇張していることを示唆する。このことが中国の製造コストを引き上げ、40年間の急成長後の経済を向上させることとの大きなジレンマに中国政府は陥っている。

研究成果の学術的意義や社会的意義

中国はWTOの加盟が承認された2001年を契機に世界の生産工場として台頭し、その後の中国の急成長と世界経済との統合は、20年間におよぶ国際的なサプライチェーンの前例のない再構築を通して、世界の製造業の分野を大幅に変えた。この変化は世界のほぼすべての主要経済、特に米国、日本をはじめとするアジア全体およびEUの経済に大きな影響を与えることとなった。したがって、中国の生産性パフォーマンスをモニタリングすることは世界の政治経済の今後の変化を予測および理解するために役立つ可能性がある。

研究成果の概要（英文）：With state-of-the-art methodology in growth accounting, this research project shows that market distortions have kept the Chinese economy operating with increasing costs and deteriorating productivity. China's growth dropped from over 10% per annum following its WTO entry to less than 6% over the period 2012-17. Meanwhile, China's total factor productivity or TFP growth, a critical measure of an economy's efficiency performance, turned from a rise of about 1.5% to a decline of 1.1% a year.

Our study suggests that severe resource misallocations that were attributable to various government interventions have crowded out more efficient private enterprises while exaggerating profits of state-owned or connected enterprises that have led to overinvestment in money-losing projects. This has been raising up the cost of Chinese manufacturing, hence putting the government in a great dilemma while struggling to upgrade its economy after 40 years of rapid growth.

研究分野：Economic growth and productivity measurement

キーワード：China's state capitalism Institution Resource misallocation Productivity

1. 研究開始当初の背景 (BACKGROUND OF THE BEGINNING OF RESEARCH)

On the top of rising social, political and environmental problems, the post-GFC (global financial crisis) significant growth slowdown (from an average 13.5% in 2005-07 to 7% in 2013-15 by official statistics) has raised a serious question about the sustainability of the China model of economic growth which has an imperative bearing on the rest of the world. This question cannot be answered without comprehending how China has achieved a rapid growth without developed pro-market institutions. Competition between growth-motivated local governments has been popularly explained as the key to China's post-reform growth. However, the China model of growth should be better analyzed in a unique institutional setting combining a politically centralized totalitarian (PCT) regime and an economically decentralized (regional) authoritarian (EDA) regime. Since maintaining a rapid growth is the only way to make the PCT regime legitimate, growth is more of a political target than an economic target. The EDA regime makes the inter-governmental competition possible because it grants localities economic autonomy. But it is the PCT regime that makes such competition self-enhanced and self-fulfilled. In such a process, the growth at the local level is essentially politically motivated. Local governments manipulate policy instruments, incurring massive negative externalities, to make the market work for their political gains. What described here is certainly not a Lange-Lerner-Taylor type market socialism and even not in line with the usual concept of the "state capitalism" (Bremmer 2009 and 2011; Naughton and Tsai 2015; Liebman and Milhaupt 2015).

2. 研究の目的 (PURPOSE OF RESEARCH)

There is no lack of explanations for the China model of growth (e.g. market-preserving fiscal federalism in Qian and Weingast 1997; regional competition model in Maskin, Qian and Xu 2001; regionally decentralized authoritarianism in Xu 2000; and interest group power intertwined with state objectives in Cai 2014), but little effort has been made to rigorously explain China's growth within a PCT-EDA framework and to empirically assess if such growth justifiable by its productivity performance. Modeling growth in such an institutional setting is where this project is positioned. In addition, to calibrate the model we make a substantial extension to the current version of the CIP (China Industrial Productivity) database. Distinguished from existing empirical studies with small samples covering a limited part of the economy, this new data set makes it possible to identify the role of local governments through regional input-output accounts linked industries.

As realized at the time of proposing the project, if the research problem facing the modeling is too difficult to solve, I would pursue an empirical solution to the problem that is what eventually done as reported in this summary of this research project.¹

3. 研究の方法 (RESEARCH METHOD)

The long and widely used aggregate production function (APF) approach, as criticized in Jorgenson, Ho and Stiroh (2005: 362), implicitly assumes that all (underlying) industries "value-added functions exist and are identical across industries up to a scalar multiple" and that "the aggregation of heterogeneous types of capital and labor must receive the same price in each

¹ For publications out of this project, please see the project final report list.

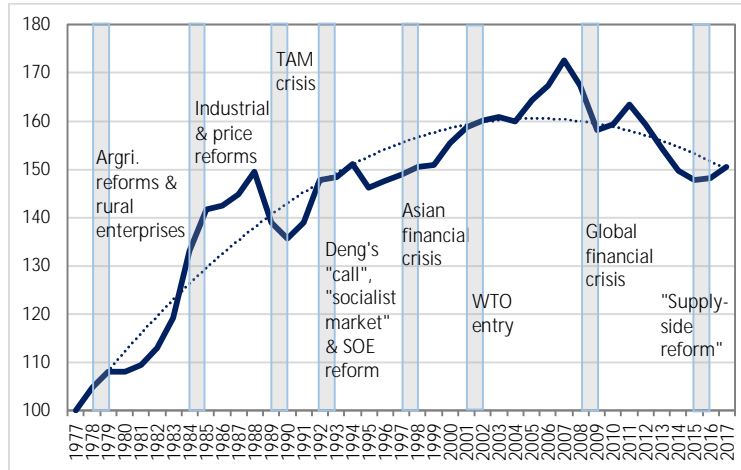
industry”. This is inappropriate to address the productivity problem of the Chinese economy where heavy government interventions and institutional deficiencies have caused severe market distortions. To better deal with China’s productivity problem, this study adopts Jorgenson’s aggregate production possibility frontier (APPF) framework (Jorgenson, 1966) and, following Jorgenson et al. (2005), also incorporates it with Domar’s aggregation scheme (Domar, 1961). This approach not only relaxes the stringent assumption that all industries have the same value added function but also takes into account that industries may pay different prices for the same factor.

4. 研究成果 (RESULTS)

China’s forty years of reform from a TFP perspective

Factor inputs are affected by policies and institutional arrangements to serve the policies, hence having significant bearing on TFP growth through externalities. To better explore an institutional explanation for the estimated TFP performance, I construct a TFP index in Figure 1 using the time series results for forty years since 1977 as summarized in the last line of the second panel of Table 2 (Wu 2019). It illustrates China’s TFP dynamism against the background of the major policy regime shifts, implying convincingly underlying institutional effects.

FIGURE 1: INDEX OF CHINA’S AGGREGATE TOTAL FACTOR PRODUCTIVITY, 1977-2017



One must bear in mind that the estimated aggregate TFP change is the *net* effect of changes of all driving factors moving in different directions. For example, a pro-market reform measure creates a positive externality, but if another policy intervenes resource allocation at the same time, it may create a negative externality as well. Consequently, the estimated aggregate TFP change is net of the two types of externalities. Historical knowledge on major policy regime shifts in China is thus essential in interpreting the TFP estimates (see Table 1, Wu 2019), but it also helps our understanding with a decomposition of TFP growth into genuine productivity improvement within industries and factor reallocation effect across industries as later presented in Table 3 (Wu 2019).

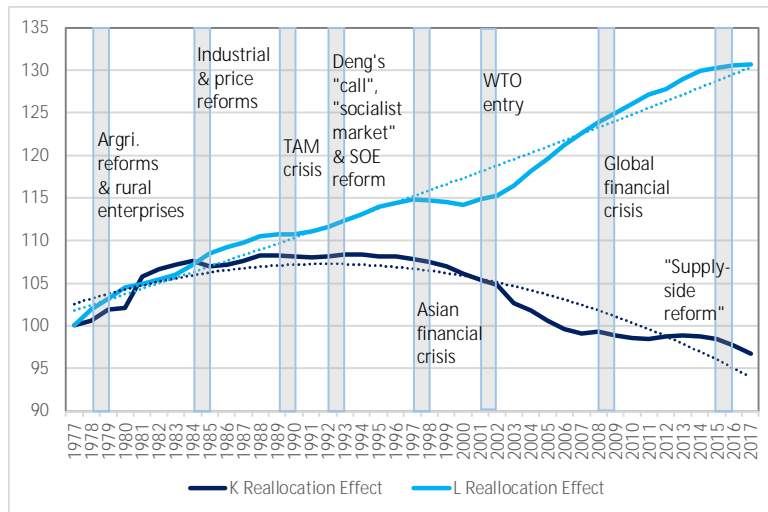
The effect of factor reallocation on TFP growth

All these suggest the existence of resource misallocation in the economy. Table 3 shows that China has an atypically large reallocation effect on TFP growth, which is not usually observed in market economies. For example, based on their empirical work on the US economy in 1977-2000, Jorgenson, Ho and Stiroh (2005) showed that first, the factor reallocation effect on TFP growth was generally negligible and second, if it was non-negligible for some subperiods, as reported in

Jorgenson, Gollop and Fraumeni (1987), the capital reallocation effect was typically positive and the labor reallocation effect was typically negative for the US economy over the period 1948-1979. This is because capital grew more rapidly in industries with high capital service prices, hence high returns on capital, whereas labor grew relatively slowly in industries with high marginal compensation.

As in Wu (2016) and Wu and Liang (2017), what I have found is opposite to what reported in Jorgenson, Gollop and Fraumeni (1987). China's labor reallocation effect on TFP growth remained generally positive over time, which suggests that the labor market was much less distorted than the capital market, benefitting from increasing labor mobility along with the reforms. Notably, the post-WTO period experienced the most significant TFP gain from labor reallocation (1.09 ppts in 2001-07) which could be driven by the rapid expansion of export-oriented and labor-intensive industries that were in line with China's comparative advantage. Yet, something institutional is hidden here. Part of the productivity benefit from the labor side could also be attributed to the strictly banned collective bargaining in China. Thus, even if all the "unwanted" factors have been removed from the "residual", one has to bear in mind that TFP growth is a net measure of externalities likely moving in different directions, which makes the interpretation tricky if lacking a good knowledge of the economic system in reality.

FIGURE 2: CHINA'S FACTOR REALLOCATION EFFECT ON TOTAL FACTOR PRODUCTIVITY GROWTH



The capital reallocation effect on TFP growth is opposite to the labor reallocation effect, especially since the 1990s. The earlier reform period indeed saw an improvement in the capital reallocation effect because of a partial removal of the distortions inherited from the central planning period. However, inefficient capital reallocation began to appear again from the late 1990s when consolidated large state-owned enterprises (SOEs), mostly upstream, reemerged after the government's SOE reform program "gripping the large while freeing the small", and continued to rise throughout the period after China's WTO entry. This is nonetheless the government's deliberate attempt to "counterbalance" China's increasing exposures to international competition after joining the WTO. Meanwhile the enhanced growth competition between local governments could also cause inefficient allocation of resources, mostly capital. Thus, the so-induced negative externalities could be overwhelming and productivity-damaging. This could be the key reason behind China's potential productivity slowdown since the mid-1990s despite continuous reforms till the global financial crisis as shown in Figure 1.

In Figure 2, to help intuitively examine the dynamics of the factor reallocation effect on the TFP growth in China, I construct an index based on the initial year 1977 for capital and labor, respectively, using my time series estimates behind Table 3.

To help our examination of the dynamic impact of factor reallocation on China's TFP growth, the labor reallocation effect index is fitted with an exponential trend, whereas the capital reallocation effect index is fitted with a polynomial trend. The two indices diverged after the mid-1980s, especially after the Tiananmen crisis. The labor reallocation effect index overcame the AFC shock as well as the subsequent long-lasting deflation in 1997-2000 and then managed to return to its trend in the mid-2000s. It remained above its trend since the GFC despite an apparent slowdown following the "supply-side reform".

The capital reallocation effect index stopped improving in the wake of the Tiananmen crisis. It is also a big surprise that it was little affected by the new reform wave promoted by Deng's south China trip in 1992. While the labor reallocation effect index managed to survive the AFC-deflation period, the capital reallocation effect index deteriorated and even further departed downward from its declining trend. This finding supports my conjecture that the growth competition between local governments may (temporarily) solve the growth problem but not productivity problem and the growth competition for faster industrialization and urbanization following China's WTO entry indeed caused severe misallocation of capital. Besides, we also observe that the capital reallocation effect index further worsened alongside the implementation of the "supply-side reform" in 2015.

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〔図書〕 計0件

〔産業財産権〕

〔その他〕

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6. 研究組織

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