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研究課題名（和文）要素コストと産業構造から見る中国経済パフォーマンス

研究課題名（英文）Factor Costs, Structural Distortions and Productivity Performance of the Chinese Economy

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研究成果の概要（和文）：本研究では中国の構造上の歪み及びその歪みが生産性に関して示唆するものを明らかにしようと試みた。構造上の歪みは産業別生産性パフォーマンスに大きく関わる政府の介入や制度上の不備による不適切な資源配分が原因で起こると論じる。研究方法は適正に要素コストを測定し、それに基づいた経済全体の産業別生産性を分析した。その結果、中国生産性だけが同じ発展段階の他の東アジア諸国のそれに比べかなり遅い年0.8%で成長していたこと、政府が介入しにくい産業は政府が介入しやすい産業と比べ生産性の成長が速いこと、労働の再配分がマクロ生産性の伸びにプラスに貢献する一方で資本の再配分はマイナスに貢献していることが明らかになった。

研究成果の概要（英文）：This research project was motivated by China's structural distortions and their productivity implications. We argue that structural distortions are caused by the misallocation of resources due to government interventions and institutional deficiencies which have significant bearing on industry-level productivity performance. A sensible investigation in the problem requires a proper measure of factor costs and based on which, an economy-wide industry-level productivity analysis. We show that China's productivity only grew by 0.8% per year, much slower than its East Asian counterparts at the same development stage. Industries less prone to government intervention, e.g. “semi-finished & finished” manufacturing industries, appear to have a faster productivity growth than those subject to more government interventions. We also show that while the reallocation of labor made a positive contribution to aggregate productivity growth, the reallocation of capital indeed played a negative role.

研究分野：　経済発展論／中国経済／経済政策

キーワード：　Input-Output accounts　factor cost　productivity growth　resource allocation　structural change　government intervention　Chinese economy

１．研究開始当初の背景

(1) China's economic structure appears to be atypical or distorted in the East Asian context. By the end of 2010, China had emerged as the "world factory" and overtook Japan as the world's second-largest economy, a position that Japan achieved 45 years ago. However, by then there was still 40% of China's workforce engaged in agriculture producing only 10% of GDP, compared to 25% and 9%, respectively, in the case of Japan.

(2) The structural distortion is also reflected by the imbalance between investment and consumption. China's private consumption has been weak and the growth has been heavily input driven, supported by an abnormally high saving rate unprecedented in economic history.

(3) Furthermore, China has accumulated the world's largest foreign exchange reserve which forces the economy to upgrade, as an inevitable effect of currency appreciation, hence leaving behind a large number of low-skilled, less-educated and least-productive workers.

All these suggest that the resources in China may have been severely misallocated.

２．研究の目的

The nature of the structural problem means that it cannot be addressed at the aggregate level. This is simply because government interventions and policy regime changes are mostly industry-specific. Therefore, industry-level productivity analyses are the key to comprehending the factors behind resource misallocation. Therefore, the study has two main objectives:

(1) The first objective is to substantially improve the industry-level productivity database developed by the principal investigator for the industrial sector by extending it to all non-industrial sectors (agriculture and services) and by measuring factor costs.

(2) The second objective is to use the so-constructed data to analyze the economy-wide industry-level productivity performance against the background of government interventions and policy regime changes and to see whether industries that are subject to more government interventions are least productive or efficient.

３．研究の方法

To analyze China's productivity performance in the light of the role of government, it is essential to have an appropriate methodological framework that is able to examine productivity performances of individual industries and their contribution to the aggregate productivity performance of the economy.

(1) This study adopts the Jorgensonian aggregate production possibility frontier framework, incorporating Domar weights, to account for contributions of individual industries to the growth of aggregate inputs and output (Jorgenson, Ho and Stiroh 2005). This approach relaxes most of the restrictive assumptions of the widely used aggregate production function approach in the growth accounting that all industries are homogenous, subject to the same value added function, and facing the same input and output prices.

(2) Data-wise, this approach also requires industry productivity accounts to be constructed as coherent parts of the national input and output accounts that also define the costs of all inputs (Wu 2015).

４．研究成果

(1) Data construction results: A data set of industry accounts for 37 Chinese industries over the period 1980-2010 which have already been made to the public.

(2) Analytical results (also see Table):

① China achieved a TFP growth of 0.84 percent per annum for the entire period 1980-2010. This means that compared to an industry-weighted value-added growth of 9.16 percent per annum, TFP growth accounted for about 9.2 percent of the average GDP growth. This is much smaller than all previous productivity studies on the Chinese economy using the aggregate approach.

② At the industry group level, in general industries less prone to government intervention, such as agriculture and the "semi-finished & finished" manufactures, tended to have higher total factor productive growth rates than those industries subject to direct government interventions, such as the "energy" group.

③ We also found strong effects of factor input reallocation across industries which significantly address the key issue of resource misallocation in the on-going policy debate. While the reallocation of labor made a positive contribution to aggregate productivity growth, the reallocation of capital indeed played a

negative role.

DOMAR-WEIGHTED TFP GROWTH AND REALLOCATION EFFECTS IN THE CHINESE ECONOMY
(Growth in percent per annum and contribution in percentage points)

	1980-91	1991-01	2001-07	2007-10	*1980-10*
Aggregate TFP growth	1.39	1.79	1.57	-1.80	1.24
1. Domar-weighted TFP growth	0.74	1.81	0.98	-2.31	0.84
- Agriculture	*0.99*	*0.75*	*0.82*	*0.76*	*0.85*
- Construction	*-0.05*	*0.12*	*0.29*	*0.22*	*0.10*
- Energy	*-0.76*	*-0.24*	*-0.33*	*-0.37*	*-0.48*
- Commodities & primary materials	*-0.50*	*0.77*	*0.21*	*-0.61*	*0.05*
- Semi-finished & finished goods	*0.55*	*1.39*	*0.59*	*-0.27*	*0.68*
- Services I (market monopolies)	*0.30*	*-0.58*	*0.55*	*-0.08*	*0.02*
- Services II (market)	*0.36*	*-0.37*	*-0.76*	*-1.10*	*-0.25*
- Services III (non-market)	*0.06*	*-0.08*	*-0.40*	*-0.71*	*-0.14*
2. Reallocation of K (ρ^K)	0.30	-0.03	-1.15	-0.30	-0.16
3. Reallocation of L (ρ^L)	0.35	0.01	1.73	0.81	0.56

(3) Significance of the results:

① The fact that the "SF&F" group maintained a positive TFP growth while the "energy" group experiencing persistently TFP decline suggests the existence of "cross-subsidization" between upstream and downstream industries in which the government plays different roles to serve its strategy.

② This large magnitude of the reallocation effect on the one hand reflects barriers to factor mobility in the economy and on the other hand also suggests potential gain from market-driven reallocation. Institutional deficiencies in the Chinese economy that allow the government at all levels to intervene resource allocation at their discretion are responsible for resource misallocation.

③ Therefore, disentangling government from business and allowing market to correct the cost structure of industries is the key to solving China's "structural problems".

④ Given China's sheer size, such an inefficient performance has a significant bearing on the world economy in terms of factor costs.

5．主な発表論文等

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6．研究組織

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