

Accounting for China's Aggregate Growth and Productivity Performance in a Regional Industry Origin Framework

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Abstract

By constructing capital-labor-energy-materials-services (KLEMS) type of regional productivity accounts, this study adopts the aggregate production possibility frontier (APPF) framework and further incorporates Domar weights to account for industry and regional origins of China's aggregate economy and total factor productivity (TFP) growth over 1992-2014. The results show that the industry structures of each region and the regional distributions of each industry at national level constantly change over time, and the value added growth contributions of individual industries to each region and that of each region to the national industry are disparate across industries and regions. Differences in capital-labor ratio make the largest contribution to differences in labor productivity growth across most regions, followed by differences in labor quality and TFP growth. Differences in capital-labor ratio, labor quality, and TFP diversely contribute to differences in labor productivity growth across industries, and differences in labor productivity growth across industries obviously differ from those across regions. The annual growth rate of aggregate value added is 8.73% with 6.06% from capital input, 0.37% from hours worked, 1.68% from labor quality, and 0.62% from TFP growth, and industry origins of aggregate value added growth are service sectors, industries that are

prone to government interventions achieve relatively low or negative value added and TFP growth. The aggregate TFP growth can be further decomposed into -0.80% of Domar-weighted TFP growth, -0.37% of capital reallocation, and 1.80% of labor reallocation. The industry origins of aggregate Domar-weighted TFP growth are industrial sectors because TFP growth in nearly all service sectors is negative. The initial endowment and comparative advantage of each region may affect its growth contribution to aggregate value added and Domar-weighted TFP growth. Capital input is much more vulnerable to administrative planning rather than market mechanisms, causing its reallocation to be negative, while the positive labor reallocation benefits from the relaxation of regulations on labor mobility so that the labor market is much less controlled than the capital market, which may tend to follow market mechanisms. The reallocations of capital and labor would be improved by taking regions into consideration, which may imply that allowing factor inputs to flow freely across regions is conducive to factor allocation. The net reallocation of capital and labor accounts for all aggregate TFP growth, and the growth sources of the reallocations of capital and labor inputs are quite disparate from the point of view of industry and regional perspectives, respectively.