

# 中國大陸經濟成長與總要素生產力變動： 合併能源與人力資本投入之分析<sup>+</sup>

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## 摘 要

實質資本與人力資本是中國大陸經濟成長的重要來源，許多先前的實證文獻在評估中國大陸總要素生產力變動時，常忽略對於中國大陸實際經濟發展情況而言相當重要的投入要素—能源投入，也因此會導致總要素生產力的估計偏差。為了重新評估這個問題，本研究修正 Wang and Yao (2003) 應用人力資本投入的估計中國大陸總要素生產力變動的模型，併入能源投入要素，重新估計中國大陸 1953 年至 2003 年總要素生產力的變動情況與貢獻度。本研究發現：(一) 無論改革開放前後，能源投入對於中國大陸經濟成長具有正向的貢獻，且改革開放前的貢獻度大於改革開放後；(二) 合併能源投入與人力資本投入後的實證模型估計，1953 至 2003 年中國大陸總要素生產力平均成長率為 1.02%，對經濟成長平均貢獻率為 12.76%，「改革開放」前 1953 至 1977 年中國大陸總要素生產力平均成長率為 -0.59%，對經濟成長平均貢獻率為 -9.18%，「改革開放」後 1978 至 2003 年中國大陸總要素生產力平均成長率為 2.57%，對經濟成長貢獻率為 27.19%，和其他相關實證文獻比較，本研究獲得較佳的實證估計結果。

關鍵字：中國大陸、經濟成長、總要素生產力、能源投入、人力資本

## Sources of China's Economic Growth:

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# Incorporating Energy Input and Human Capital Accumulation <sup>+</sup>

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## Abstract

It is widely accepted that physical capital and human capital are important sources of China's economic growth. Empirical evidence has come from some empirical studies on measuring China's total factor productivity (TFP), which we now know may give rise to invalid inferences if any of the empirical evidence concerning China's economic growth has happened to be influenced by some third, omitted, variable. This paper measured the TFP growth in China and investigated the possibility that earlier inferences may be potentially biased due to the omission of a third relevant variable, by incorporating energy input in this study. The inclusion of a third variable requires us to revise some of the earlier inferences reported in Wang and Yao (2003). First, the most striking result is that this study shows that even in the presence of a third variable, energy input, the TFP growth rate of China's economy has relatively higher contributions to GDP growth. Irrespective of whether it was in the prereform period or the reform period, energy input had positive contributions to China's economic growth. Energy input does constitute a source of China's economic growth. Second, the estimation results obtained in this study reveal that the TFP growth rate of China's economy averaged approximately 1.02% during the years between 1953 and 2003 and contributed to approximately 12.76% of GDP growth; during the prereform period between 1953 and 1977, China's TFP growth rate was approximately -0.59%, and contributed to approximately -9.18% of GDP growth; during the reform period between 1978 and 2003, China's TFP growth rate was approximately 2.57% and contributed to approximately 27.19% of GDP growth.

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