

中国运输成本和效率对出口贸易影响的实证研究

许利枝¹, 方述诚², 汪寿阳³

1. 北京航空航天大学 经济管理学院, 北京 100191;
2. 美国北卡罗来纳州立大学 工业与系统工程系, 罗利 27695;
3. 中国科学院 数学与系统科学研究院, 北京 100190

Analysis on transport costs and China's exports

XU Li-zhi¹, FANG Shu-cherng², WANG Shou-yang³

1. School of Economics and Management, Beihang University, Beijing 100191, China;
2. Industrial and Systems Engineering Department, North Carolina State University, Raleigh NC 27695, USA;
3. Academy of Mathematics and Systems Science, Chinese Academy of Sciences, Beijing 100190, China

- [摘要](#)
- [参考文献](#)
- [相关文章](#)

全文: [PDF](#) (721 KB) [HTML](#) (1 KB) 输出: [BibTeX](#) | [EndNote \(RIS\)](#) [背景资料](#)

摘要 本文首次将贸易引力模型扩展并应用到中国港口城市交通运输成本和效率对我国出口贸易影响的研究中。并基于我国四大港口城市出口到32个国家和中国香港的1997-2008年面板数据进行了实证研究, 主要研究结果可总结为3点: 1) 我国公路运输成本和港口效率是影响我国贸易扩展的主要因素。在控制了贸易引力模型中的其他相关变量, 我国港口城市公路运输成本每增加10%, 将减少出口贸易额大约9%; 港口效率每提高10%, 将给中国出口带来7.2%的增长; 2) 公路成本、铁路成本和港口效率代理变量的总弹性在中国出口亚洲子样本模型中弹性最大, 这3个变量对中国出口欧洲和美洲的影响与总样本模型结果相似, 弹性不同主要来自于港口效率指标在不同模型中的不同影响, 表明我国港口效率的提高不仅有利于提高我国在全球出口份额, 而且还对我国出口结构产生相应地影响; 3) 在控制了贸易引力模型中的其他相关变量, 公路成本、铁路成本和港口效率代理变量的总弹性为1.66, 几乎是平均工资弹性的3倍, 表明有效地利用和提高我国不同运输模式的运作效率是保持和增强我国出口产品的竞争优势的有效手段。

关键词: 港口效率 运输成本 贸易引力模型 集装箱吞吐量

Abstract: Based on the annual data set, which involves a balanced panel of four port cities exports to 32 countries and Hong Kong, China over the period of 1997-2008, this paper is the first attempt to extend the conventional gravity model to measure the effect of transport costs and port efficiency on China's exports. Our results can be summarized in three main findings: 1) the improvement of port efficiency and reduction of road transport costs play a vital role in China's export competitiveness in the global market. The coefficient estimates on them are relatively large, around 0.72 and -0.89, respectively; 2) the effect of transport costs and port efficiency on China-to-Asia exports significantly exceeds that on China-to-Europe and China-to-America exports; 3) the overall estimated elasticity of road, railroad and port measure is 1.66, which is almost three times that of the average wage of port cities. The empirical results provide strong evidences that improvement in the quality of transportation services in port cities of China exhibit significant economic effects not only on how much but also how trade grows.

Key words: [port efficiency](#) [transport costs](#) [gravity model of trade](#) [container throughput](#)

收稿日期: 2011-10-10;

基金资助: 国家自然科学基金(70810003)

引用本文:

许利枝, 方述诚, 汪寿阳. 中国运输成本和效率对出口贸易影响的实证研究[J]. 系统工程理论实践, 2012, (5): 1057-1067.

服务

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ E-mail Alert
- ▶ RSS

作者相关文章

- ▶ 许利枝
- ▶ 方述诚
- ▶ 汪寿阳

- [1] Limão N, Venables A J. Infrastructure, geographical disadvantage and transport costs[J]. *The World Bank Economic Review*, 2001, 15(3): 451-479. 
- [2] De P, Rout B. Transportation cost and trade competitiveness: Empirical evidence from India[J]. *Trade and Development Review*, 2008, 1(2): 95-121.
- [3] Bougheas S, Demetriadesb P O, Morgenrothc E L W. Infrastructure, transport costs, and trade[J]. *Journal of International Economics*, 1999, 47: 169-189. 
- [4] Nordås H K, Piermartini R. Infrastructure and trade[R]. *ERSD Working Paper No. 2004-04*, 2004.
- [5] Iwanow T, Kirkpatrick C. Trade facilitation and manufactured exports: Is Africa different?[J]. *World Development*, 2009, 37(6): 1039-1050. 
- [6] Wilson J S, Mann C L, Otsuki T. Trade facilitation and economic development: A new approach to quantifying the impact[J]. *The World Bank Economic Review*, 2003, 17(3): 367-389. 
- [7] Hummels D. Transportation costs and international trade in the second era of globalization[J]. *The Journal of Economic Perspectives*, 2007, 21(3): 131-154. 
- [8] Clark X, Dollar D, Micco A. Port efficiency, maritime transport costs and bilateral trade[R]. *NBER Working Paper No. 10353*, 2004. 
- [9] Blonigen B A, Wilson W W. New measures of port efficiency using international trade data[R]. *NBER Working Paper No. 12052*, 2006a. 
- [10] 王振全, 田延宾, 汪寿阳. 中国进出口贸易结构变化[J]. *系统工程理论与实践*, 2009, 29(2): 10-17. Wang Z Q, Tian Y B, Wang S Y. On structural change in China's import and export[J]. *Systems Engineering - Theory & Practice*, 2009, 29(2): 10-17.
- [11] 魏巍贤. 中国进口需求的决定因素分析[J]. *系统工程理论与实践*, 1999, 19(9): 58-64. Wei W X. Study on determinants of China's imports[J]. *Systems Engineering - Theory & Practice*, 1999, 19(9): 58-64.
- [12] Ma L, Zhang J. Infrastructure development in a fast growing economy: The People's Republic of China[G]// Brooks D H, Hummels D. Infrastructure's Role in Lowering Asia's Trade Costs. Cheltenham, UK and Northampton, MA, USA: Edward Elgar, 2009. 
- [13] Tinbergen J. Shaping the World Economy[M]. New York: Twentieth Century Fund, 1962.
- [14] Egger P, Pfaffermayr M. The proper panel econometric specification for the gravity equation: A three-way model with bilateral interaction effects[J]. *Empirical Economics*, 2003, 28(3): 571-580. 
- [15] Blonigen B A, Wilson W W. International trade, transportation networks and port choice[EB/OL]. <http://www.corpsnets.us/docs/PortDevInternalTransport/PortChoice114.pdf>, 2006b.
- [16] Tiwari P, Itoh H, Doi M. Shippers' port and carrier selection behavior in China: A discrete choice analysis[J]. *Maritime Economics and Logistics*, 2003, 5(1): 23-39. 
- [17] Hausman J A. Specification tests in econometrics[J]. *Econometrica*, 1978, 46(6): 1251-1271. 
- [18] Wooldridge J M. Econometric Analysis of Cross Section and Panel Data[M]. Cambridge, Massachusetts: The MIT Press, 2002. 
- [19] Greene W. Econometric Analysis[M]. New York: Prentice-Hall, 2000. 
- [20] Friedman M. The use of ranks to avoid the assumption of normality implicit in the analysis of variance[J]. *Journal of the American Statistical Association*, 1937, 32: 675-701.
- [21] Hoechle D. Robust standard errors for panel regressions with cross-sectional dependence[J]. *The Stata Journal*, 2007, 7(3): 312-321.
- [22] Baier S L, Bergstrand J H. The growth of world trade: Tariffs, transport costs, and income similarity[J]. *Journal of International Economics*, 2001, 53: 1-27. 
- [23] Carruthers R, Bajpai J N, Hummels D. Trade and logistics: An East Asian perspective[C]//East Asia Integrates: A Trade Policy Agenda for Shared Growth. Washington, DC: The World Bank, 2003.
- [24] Bergstrand J H. The generalized gravity equation, monopolistic competition, and the factor-proportions theory in international trade [J]. *Review of Economics and Statistics*, 1989, 71(1): 143-153. 
- [25] Hummels D, Skiba A. Shipping the good apples out? An empirical confirmation of the Alchian-Allen conjecture[J]. *Journal of Political Economy*, 2004, 112(6): 1384-1402. 
- [1] 黄安强, 肖进, 汪寿阳. 一个基于集成情境知识的组合预测方法[J]. *系统工程理论实践*, 2011, 31(专刊1): 55-65.

版权所有 © 2011 《系统工程理论与实践》编辑部

地址：北京中关村东路55号 100190 电话: 010-62541828 Email: xtll@chinajournal.net.cn

本系统由北京玛格泰克科技发展有限公司设计开发 技术支持: support@magtech.com.cn