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# **Economic Freedom and Governance Efficiency: Recent Evidence from China**

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## **Abstract**

We investigate the effects of economic freedom (marketization) on governance efficiency defined with the newest provincial level economic indicator data (NBSC, 2017) and economic freedom data (Fan et al., 2017) from 2008 to 2014 in China. With two different measures, the results suggest that economic freedom is positively correlated with governance efficiency. Moreover, the liberalization and marketization progress in the “factors market” is the single most significant area for both governance efficiency measures, while other areas like “market intermediary & legal system” have no significant effects.

**Keywords:** economic freedom, governance efficiency, marketization, regional economics, China

**JEL Codes:** H11, P25, P37

## 1. Introduction

The size of government is typically included as one area of economic freedom (Gwartney et al., 2016). However, public sectors stay influential in both the economic life and political life of each individual contemporarily, especially in countries with a centrally-planned economy. The divide between economic institutions and political institutions can be ambiguous, due to their interactions with each other. Meanwhile, the different areas within each of the institutions also interact, especially in developing countries where institutions vary with higher volatility. It is a complex process, or an unarticulated “evolutionary” order (Hayek, 1988).

In this paper, we investigate the contribution of economic freedom on governance efficiency. We use a fixed effects panel approach with provincial data in China from 2008 to 2014, employing the newest National Economic Research Institute (NERI) Marketization Index (Fan et al., 2017) as the economic freedom measure, and administrative expenses per capita and fiscal structure as two measures of governance efficiency.<sup>1</sup> The results suggest that more economic freedom can improve the governance efficiency of a regional government.

## 2. Data and Empirical Approach

The first dataset used in this study is from the *Marketization Index of China's Provinces: NERI Report 2016* (Fan et al., 2017), covering 31 provincial regions from 2008 to 2014. The NERI Marketization Index is published intermittently, and the latest one for years 2008 - 2014 is the 2016 report (Fan et al., 2017). It has been widely linked to many studies of Chinese outcomes,

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<sup>1</sup> Though there is a small literature on the marketization level and administrative cost in China, e.g. Zhang (2011), none of them manage to employ a systematic economic freedom/marketization measure or focus on this channel. Our paper is the first one using the systematic NERI Marketization Index to study governance efficiency.

such as trade (Lu et al., 2009), growth (Fan et al., 2011), and entrepreneurship (Zhou and Hall, 2017), but it has never been studied in the governance efficiency context. This index includes a summary marketization index, comprised of 18 components in five major areas: (1) “role of government vs. market” indicating the size of the government;<sup>2</sup> (2) “development of non-state economy”; (3) “goods market development”; (4) “factors market development”; and (5) “market intermediary & legal frameworks”. We employ the summary index and its modified version, which excludes “role of government vs. market”,<sup>3</sup> as well as the five area indexes.

All the other data are directly accessed or calculated based on the data from the National Bureau of Statistics of China (NBSC).<sup>4</sup> We measure governance efficiency by both administrative expenses per capita and structure of fiscal expenses, measured as administrative expenses divided by total fiscal expenses. The other control variables include: average urban wage, GDP growth rate, population, post-secondary education rate, international trade to GDP ratio, industry sector employment to total employment ratio, dependency ratio, and a dummy for minority autonomous regions. Refer to Table 1 for summary statistics.

Our panel approach with province and year fixed effects is presented in equation (1):

$$GovEff_{it} = \beta_0 + \beta_1 EF_{it-1} + \beta_2 Z_{it-1} + p_i + y_t + \varepsilon_{it} \quad (1)$$

where *GovEff* can take the form of either administrative expenses per capita or fiscal structure; *EF* can take either the (modified) marketization summary index, or the five area indexes; *Z* includes the lag of the aforementioned control variables, except for GDP growth rate, which

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<sup>2</sup> This area has three components: market’s role in distribution of economic resources, intervention by government and government size, and percentage of public sector employees to total population.

<sup>3</sup> As indicated in the results tables, this area has high correlation with the dependent, hence we excluded it from the summary index.

<sup>4</sup> <http://data.stats.gov.cn/english/>

already contains information of the previous year. Meanwhile,  $p_i$  is the province fixed effect for province  $i$ ,  $y_t$  is the year fixed effect for year  $t$ , and  $\varepsilon_{it}$  is the error term for province  $i$  in year  $t$ .

### **3. Empirical Results**

The results when using administrative expenses per capita as the dependent variable are presented in Table 2. Economic freedom (marketization) is negatively associated with provincial level government administrative expenses. In other words, more economic freedom leads to more governance efficiency. However, the modified summary index does not affect governance efficiency significantly.

Individually, “factors market development” is the only single area index significantly promoting governance efficiency. According to Fan et.al (2017), this reflects marketization progress or economic liberalization from three areas, the financial sector, labor market, and technological research and development. With few major state-owned banks monopolizing the market, the marketization progress in the financial sector is far behind other sectors in the products market. The labor market development measure focuses on improvement of human resources mobility, which is a highly regulated area in a centrally-planned economy. Improvement in the research and development marketization process could be led by three proposals - more R&D funded by non-government or non-government owned companies, more registered patents per researcher, and more R&D in application of product industries, as Fan et.al (2017) indicate. Both the “role of government vs. market” and “goods market development” areas are excluded from Table 2, as they are omitted by Stata due to high correlation with the dependent variable.

The results when using the alternative dependent variable, the ratio of administrative expenses over total fiscal expense, are presented in Table 3. The findings are generally consistent with those in Table 2. The “role of government vs. market” area stays significant.<sup>5</sup> Overall, the evidence suggests that marketization progress in the factors market is the single most important area promoting governance efficiency, while other areas like “market intermediary & legal system” do not have significant effects.

#### **4. Conclusion**

This paper examines the relationship between a marketization index and governance efficiency in China with the most recent data, using a fixed effects panel approach. We find that a higher marketization level, or economic freedom, is associated with a smaller share of the fiscal budget being distributed to administrative expenses, i.e. public goods and services. Among the several, the “factors market development” is the driving factor.

The results suggest that the government runs more efficiently in the presence of higher levels of economic freedom - areas of economic freedom are interlinked! Further, marketization reform on economic institutions can certainly affect political institutions.

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<sup>5</sup> We also use pooled ordinary least squares, the results of which are not reported here due to the limit of space, but available upon request. The significances of the fixed effects model are verified in the pooled OLS approach, while the pooled OLS approach suggests more potential significant effects of the other areas (e.g. “goods market development”) of the EF Index.

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Table 1: Summary Statistics.

Variable	Mean	Std. Dev.	Min	Max
Administrative Expenditure Per Capita	6.707	0.413	5.945	8.663
Governance Efficiency	11.555	2.928	5.054	19.092
EF Summary Index	5.822	1.933	-0.300	9.950
Modified EF Summary Index	5.779	1.940	0.975	10.310
Factors Market Development	4.623	2.233	-1.210	12.230
Goods Market Development	7.618	1.376	1.460	9.790
Role of Govt. vs. Market	5.992	2.429	-6.750	9.650
Market Intermediary & Legal System	4.608	3.524	-0.700	16.190
Non-state-owned Economy Index	6.267	2.297	0.940	10.380
Wage (log)	10.578	0.314	9.933	11.535
GDP Growth Rate (%)	11.384	2.476	4.900	17.800
Population (log)	10.400	0.852	7.979	11.583
Post-secondary Ratio (%)	9.859	6.000	1.565	39.298
Foreign Trade to GDP (%)	31.021	37.115	3.575	169.883
Industry employment ratio (%)	20.051	7.021	2.858	35.808
Dependency Ratio (%)	36.253	7.099	19.300	61.550

Notes: Dataset contains 217 observations from 31 provinces between the years of 2008 to 2014.

Governance Efficiency is measured as the ratio of administrative expenses over total fiscal expenses. EF Summary Index refers to the summary index of NERI report (Fan et. al 2017). Modified EF Summary Index equals to summary index excluding index of Role of Govt. vs. Market. All the NBSC data, with the exception of post-secondary and age composition data in 2010, was obtained from the National Bureau of Statistics of China (NBSC) Annual Data by Province Database at: <http://data.stats.gov.cn/english/easyquery.htm?cn=E0103>. Postsecondary and age composition data in 2010 is not available in that database and was obtained from the 2010 census from NBSC, available online at: <http://www.stats.gov.cn/tjsj/pcsj/rkpc/6rp/indexch.htm>.



Table 2. Economic Freedom and Administrative Expenditure Per Capita Measure of Governance Efficiency.

	Model 1	Model 2	Model 3	Model 4	Model 5
EF Summary Index	-0.054* (0.031)				
Modified EF Summary Index		-0.037 (0.033)			
Factors Market Development			-0.033** (0.014)		
Market Intermediary & Legal System				-0.004 (0.009)	
Non-state-owned Economy Index					-0.002 (0.044)
Wage (log)	-0.209 (0.313)	-0.168 (0.351)	-0.241 (0.308)	-0.138 (0.389)	-0.149 (0.347)
GDP Growth Rate (%)	0.014 (0.011)	0.016 (0.010)	0.014 (0.010)	0.019* (0.011)	0.019 (0.011)
Population (log)	-1.101* (0.588)	-1.193* (0.585)	-0.974 (0.583)	-1.385** (0.559)	-1.452** (0.576)
Post-secondary Ratio (%)	0.002 (0.006)	0.002 (0.006)	-0.000 (0.006)	0.001 (0.006)	0.000 (0.007)
Foreign Trade to GDP (%)	0.004 (0.002)	0.004* (0.003)	0.004* (0.002)	0.004* (0.003)	0.004* (0.003)
Industry employment ratio (%)	-0.000 (0.003)	-0.001 (0.003)	-0.000 (0.003)	-0.002 (0.003)	-0.002 (0.003)
Dependency Ratio (%)	0.004 (0.005)	0.005 (0.005)	0.006 (0.005)	0.005 (0.005)	0.005 (0.005)
Constant	20.45** (7.677)	20.86** (7.966)	19.27** (7.718)	22.33*** (7.680)	23.14*** (7.279)
Observations	186	186	186	186	186
R-squared	0.849	0.845	0.850	0.843	0.842
Number of province	31	31	31	31	31
Province FE	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y

Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Notes: Dependent variable is log of administrative expenses of providence government per capita. All independent variables are in lags, except for GDP growth rate. Goods Market Development and Role of Govt. vs. Market have high correlation with dependent variable thus excluded in the table.

Table 3. Economic Freedom and Fiscal Structure Measure of Governance Efficiency.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
EF Summary Index	-0.470*					
	(0.267)					
Modified EF Summary Index		-0.380				
		(0.281)				
Factors Market Development			-0.317**			
			(0.154)			
Role of Govt. vs. Market				-0.331**		
				(0.152)		
Market Intermediary & Legal System					-0.057	
					(0.076)	
Non-state-owned Economy Index						0.037
						(0.305)
Wage (log)	-0.897	-0.576	-1.261	-1.513	-0.236	-0.299
	(2.987)	(3.198)	(2.946)	(2.858)	(3.514)	(3.355)
GDP Growth Rate (%)	0.036	0.045	0.030	0.041	0.069	0.078
	(0.117)	(0.115)	(0.106)	(0.121)	(0.118)	(0.122)
Population (log)	0.105	-0.259	1.652	-1.564	-2.067	-2.879
	(3.386)	(3.423)	(3.440)	(3.656)	(3.325)	(3.474)
Post-secondary Ratio (%)	0.017	0.018	-0.004	-0.004	0.014	0.001
	(0.053)	(0.053)	(0.050)	(0.053)	(0.051)	(0.049)
Foreign Trade to GDP (%)	0.015	0.018	0.018	0.011	0.018	0.019
	(0.021)	(0.021)	(0.020)	(0.021)	(0.022)	(0.023)
Industry employment ratio (%)	0.008	0.005	0.007	0.004	-0.004	-0.007
	(0.026)	(0.027)	(0.024)	(0.026)	(0.025)	(0.030)
Dependency Ratio (%)	0.016	0.018	0.029	0.014	0.019	0.023
	(0.039)	(0.039)	(0.038)	(0.038)	(0.040)	(0.039)
Constant	18.74	18.55	4.977	41.83	31.74	40.24
	(53.16)	(56.94)	(54.08)	(53.06)	(58.15)	(56.44)
Observations	186	186	186	186	186	186
R-squared	0.718	0.714	0.721	0.720	0.710	0.708
Number of province	31	31	31	31	31	31
Province FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y

Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Notes: Dependent variable is fiscal structure- ratio of administrative expenses over total fiscal expenses. All independent variables are in lags, except for GDP growth rate. Goods Market Development is omitted due to collinearity.