

BOFIT Discussion Papers
17 • 2009

Julan Du, Yi Lu and Zhigang Tao

China as a regulatory state



EUROJÄRJESTELMÄ
EUROSYSTEMET

Bank of Finland, BOFIT
Institute for Economies in Transition

BOFIT Discussion Papers
Editor-in-Chief Iikka Korhonen

BOFIT Discussion Papers 17/2009
9.10.2009

Julan Du, Yi Lu and Zhigang Tao: China as a regulatory state

ISBN 978-952- 462- 989- 8
ISSN 1456-5889
(online)

This paper can be downloaded without charge from
<http://www.bof.fi/bofit>
or from the Social Science Research Network electronic library at
http://ssrn.com/abstract_id=1489412.

Suomen Pankki
Helsinki 2009

Contents

Tiivistelmä.....	i
Abstract.....	ii
1 Introduction	2
2 From state ownership to regulatory state.....	5
3 Data and variables	7
4 Empirical analysis	10
4.1. Main results	10
4.2. Instrumental variable estimation	11
4.3. Robustness checks	12
4.4. Does rent seeking drive our results?.....	14
4.5. A comparative statics analysis	16
5 Conclusions	17
References	18

Figures

Tables

All opinions expressed are those of the authors and do not necessarily reflect the views of the Bank of Finland.

Julan Du, Yi Lu and Zhigang Tao

China as a regulatory state

Tiivistelmä

Markkinatalouden eri mallit eroavat toisistaan siinä, kuinka paljon valtiolla on valtaa markkinoihin. Glaeser ja Shleifer (2002, 2003) sekä Djankov et al. (2003) luokittelevat nämä mallit siten, että toisessa ääripäässä ovat taloudet, joissa valtion sekaantuminen talouden toimintaan on vähäistä (yritykset sopivat asioista keskenään ja kiistelevät asioista oikeusjärjestelmän kautta), ja toisessa ääripäässä taloudet, joissa valtio on aktiivinen toimija markkinoilla (sääntelytalous). Tässä tutkimuksessa luodaan 3073 kiinalaiseen yksityisyrittäjään kohdistuvan kyselytutkimuksen perusteella indeksi, joka mittaa valtion valtaa markkinoihin. Alueellisten viranomaisten valta vaihtelee Kiinassa suuresti. Alueilla, joilla viranomaisilla on enemmän valtaa, yritykset toimivat paremmin. Tämä antaa aiheen olettaa, että tietynlainen sääntelytalouden malli on oikea Kiinalle.

Asiasanat: sääntelytalous, epäjärjestyksen kustannukset, diktatuurin kustannukset, markkinatalouden mallit, Kiinan talousuudistus

China as a Regulatory State

Julan Du^a, Yi Lu^b, and Zhigang Tao^b

^aChinese University of Hong Kong

^bUniversity of Hong Kong

January 2009

Abstract

Market economy models differ in the degree of the power of the government vis-à-vis the market in the economy. Under the classifications set forth by Glaeser and Shleifer (2002, 2003), and Djankov et al. (2003), these market models range from those emphasizing low government intervention in the market (private orderings and private litigation through courts) to those where the state is an active participant (regulatory state). This paper, using data from a survey of 3,073 private enterprises in China, constructs an index to quantify the power of the government vis-à-vis the market. Regional government power is found to vary considerably across China's regions. Notably, enterprises located in regions where government exerts more power in the market perform better, suggesting that the regulatory state model of the market economy is appropriate for China.

Keywords: Regulatory State, Disorder Costs, Dictatorship Costs, Market Economy Models, China's Economic Reform

JEL Codes: P30, D02, L25

Walder, Andrew G. 1995. "China's Transitional Economy: Interpreting its Significance," *China Quarterly* 144, 963-979.

White, Halbert. 1980. "A Heteroskedasticity-Consistent Covariance Matrix Estimate and a Direct Test for Heteroskedasticity," *Econometrica* 48, 817-838.

Williamson, John. 1989. "What Washington Means by Policy Reform," in John Williamson ed. *Latin American Readjustment: How Much has Happened*, Washington: Institute for International Economics.

Wooldridge, Jeffrey M. 2003. "Cluster-Sample Methods in Applied Econometrics," *American Economic Review* 93, 133-138.

Wooldridge, Jeffrey M. 2006. "Cluster Sample Methods in Applied Econometrics: An Extended Analysis," working paper.

Wu, Qianlan. 2007. "The Making of a Market Economy in China: Transformation of Government Regulation of Market Economy," *European Law Journal* 13, 750-771.

Figure 1: Institutional possibility frontier

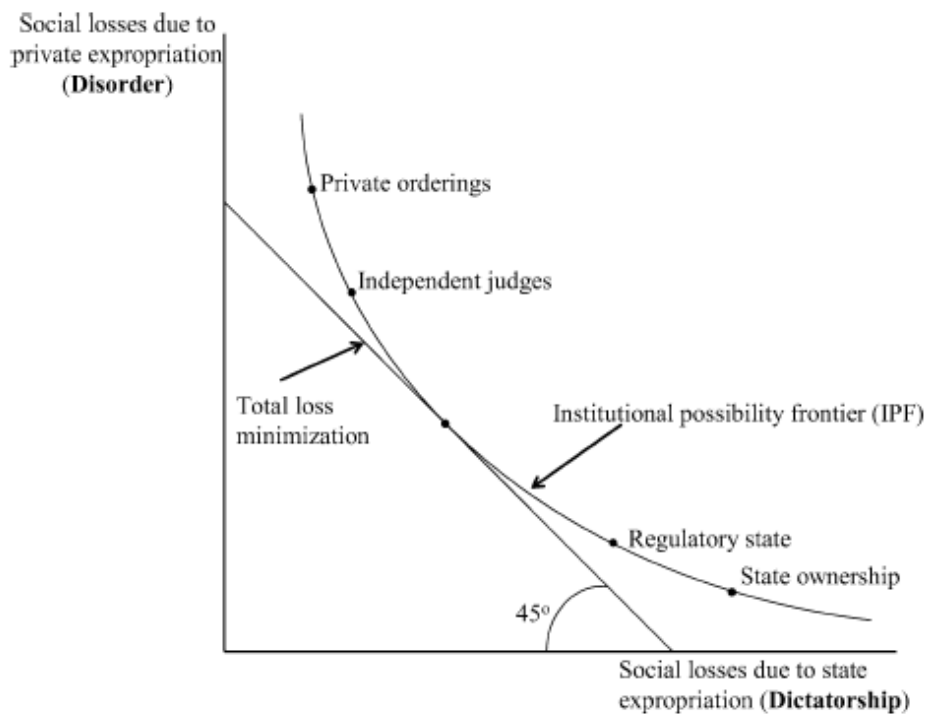


Fig. 1. Institutional possibilities.

The above figure is copied from Figure 1 of Djankov, Glaeser, La Porta, Lopez-de-Silanes, and Shleifer (2003).

Figure 2: Correlation between the power of regional government vis-à-vis market and the distance between regional capital city and Beijing

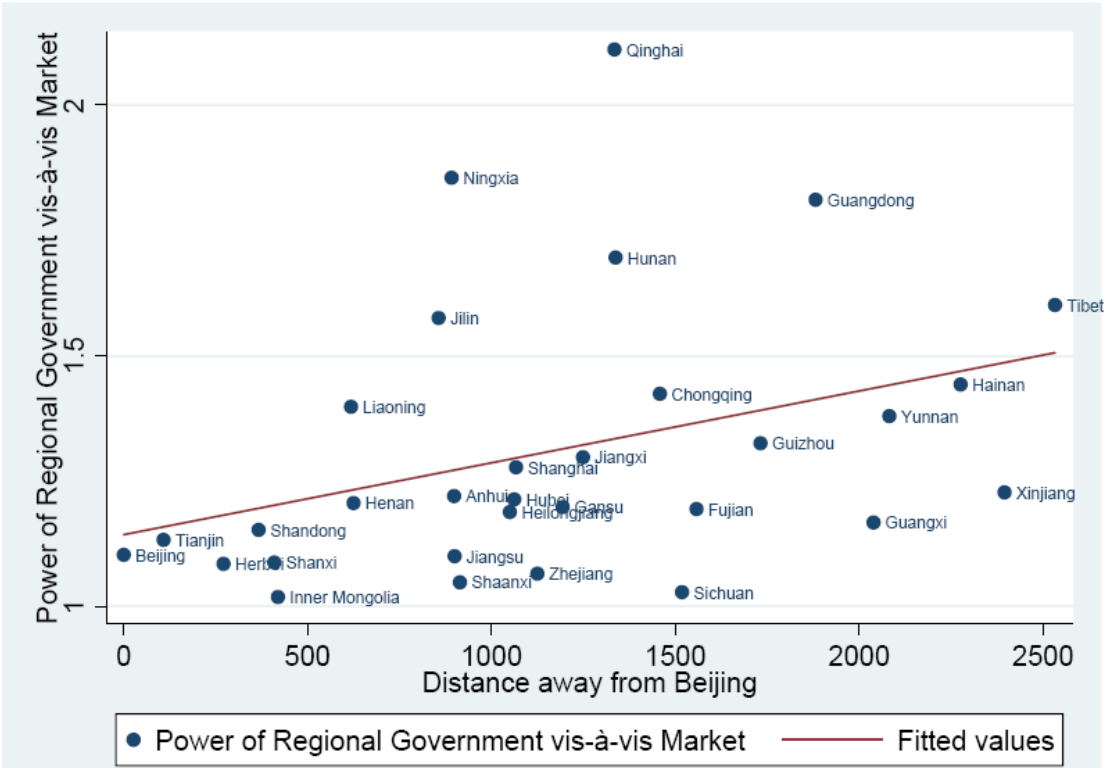


Table 1: Distribution of sample across China's regions

Region	Final Sample	Initial Sample	Percentage
Beijing	89	117	76.07%
Tianjin	86	100	86.00%
Herbei	135	198	68.18%
Shanxi	38	76	50.00%
Inner Mongolia	29	45	64.44%
Liaoning	124	148	83.78%
Jilin	70	80	87.50%
Heilongjiang	87	101	86.14%
Shanghai	121	180	67.22%
Jiangsu	242	279	86.74%
Zhejiang	114	165	69.09%
Anhui	54	78	69.23%
Fujian	33	63	52.38%
Jiangxi	42	61	68.85%
Shandong	185	250	74.00%
Henan	101	143	70.63%
Hubei	84	125	67.20%
Hunan	43	64	67.19%
Guangdong	137	193	70.98%
Guangxi	37	47	78.72%
Hainan	29	54	53.70%
Chongqing	89	97	91.75%
Sichuan	40	60	66.67%
Guizhou	62	66	93.94%
Yunnan	32	41	78.05%
Tibet	5	10	50.00%
Shaanxi	105	114	92.11%
Gansu	30	36	83.33%
Qinghai	8	11	72.73%
Ningxia	14	20	70.00%
Xinjiang	44	51	86.27%

Table 2: Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Enterprise Performance	2309	1.85	1.27	-4.61	6.59
Power of Government vis-à-vis Market	31	1.31	0.27	1.02	2.11
Fan-Zhu-Wang Index	30	6.06	2.93	0.00	10.00
Ratio of Government Consumption	30	0.14	0.03	0.09	0.19
Education	2307	12.64	2.84	0.00	19.00
Age	2300	43.50	8.26	22.00	75.00
Managerial Experience	2306	4.28	7.23	0.00	61.00
CPC Membership	2309	0.16	0.36	0.00	1.00
CPPCC Membership	2309	0.41	0.49	0.00	1.00
Government Cadre	2309	0.07	0.26	0.00	1.00
SOE Cadre	2309	0.37	0.48	0.00	1.00
Enterprise Size	2309	4.08	1.33	0.00	9.90
Enterprise Age	2287	2.23	0.67	0.00	3.83
Logarithm of Capital-Labor Ratio	1478	1.79	1.15	-2.96	7.25
Logarithm of GDP per capita	31	-0.43	0.53	-1.40	1.01
Logarithm of Population	31	7.99	0.92	5.55	9.15
Influential Competitors	2256	0.39	0.49	0.00	1.00
Ratio of Extralegal Payments	1136	0.06	0.10	0.00	1.00

Table 3: OLS estimates

Dependent Variable	1	2	3	4	5
	Enterprise Performance				
Power of Government vis-à-vis Market	0.41*** (0.12)	0.32*** (0.12)	0.34*** (0.12)	0.26** (0.12)	0.29** (0.11)
Regional Characteristics					
Logarithm of GDP per capita			0.35*** (0.05)	0.35*** (0.05)	0.35*** (0.05)
Logarithm of Population			0.02 (0.04)	0.05 (0.04)	0.05 (0.04)
Entrepreneurial Characteristics					
Education				0.06*** (0.01)	0.07*** (0.01)
Age				-0.004 (0.003)	-0.004 (0.003)
Managerial Experience				0.005 (0.004)	0.006 (0.004)
CPC Membership				0.11 (0.07)	0.16** (0.07)
CPPCC Membership				0.05 (0.05)	0.07 (0.05)
Government Cadre				-0.11 (0.11)	-0.09 (0.11)
SOE Cadre				0.15*** (0.07)	0.15*** (0.06)
Enterprise Characteristics					
Enterprise Size					-0.07*** (0.02)
Enterprise Age					0.03 (0.04)
Industry Dummy	No	Yes	Yes	Yes	Yes
Number of Observation	2,309	2,309	2,309	2,295	2,274
R-squared	0.0047	0.0604	0.0809	0.1105	0.1138
<i>p</i> -value for F-Test	0.0007	0.0000	0.0000	0.0000	0.0000

Robust standard error is reported in the parenthesis. *, **, *** represent significance at 10%, 5%, and 1% level, respectively.

Table 4 : 2SLS estimates

Dependent Variable	1	2	3	4
	First Stage Power of Government vis-à-vis Market	Second Stage Enterprise Performance	First Stage Power of Government vis-à-vis Market	Second Stage Enterprise Performance
Power of Government vis-à-vis Market		1.21*** (0.26)		1.65*** (0.25)
Distance	0.18*** (0.01)		0.19*** (0.01)	
Regional Characteristics				
Logarithm of GDP per capita			0.05*** (0.01)	0.37*** (0.05)
Logarithm of Population			-0.01 (0.01)	0.08** (0.04)
Entrepreneurial Characteristics				
Education			0.00 (0.00)	0.07*** (0.01)
Age			-0.00 (0.00)	-0.003 (0.003)
Managerial Experience			0.00 (0.00)	0.007* (0.004)
CPC Membership			0.03** (0.01)	0.14* (0.07)
CPPCC Membership			0.01 (0.01)	0.05 (0.06)
Government Cadre			-0.01 (0.02)	-0.09 (0.11)
SOE Cadre			0.01* (0.01)	0.11* (0.06)
Enterprise Characteristics				
Enterprise Size			0.01* (0.003)	-0.09*** (0.03)
Enterprise Age			0.00 (0.01)	0.04 (0.05)
Shea Partial R2	0.2447	-	0.2472	-
Anderson Canonical LR Statistic	[648.05]***	-	[645.74]***	-
Cragg-Donald F-statistic	747.49	-	737.89	-
Industry Dummy	No	No	Yes	Yes
Number of Observation	2,309	2,309	2,274	2,274

Robust standard error is reported in the parenthesis. *, **, *** represent significance at 10%, 5%, and 1% level, respectively.

Table 5: Experiments for the index of Power of Government vis-à-vis Market

Dependent Variable	1	2	3	4
Power of Government vis-à-vis Market	1.65*** (0.25)	0.40*** (0.06)	0.34*** (0.05)	0.37*** (0.06)
Shea Partial R2	0.2472	0.2487	0.2055	0.2511
Anderson Canonical LR Statistic	[645.74]***	[650.13]***	[523.25]***	[657.38]***
Cragg-Donald F-statistic	737.89	743.65	581.35	753.20
Regional characteristics	Yes	Yes	Yes	Yes
Entrepreneurial characteristics	Yes	Yes	Yes	Yes
Enterprise characteristics	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes
Number of Observation	2,274	2,274	2,274	2,274

The estimation strategy used is 2SLS estimation. The First-stage results (including the same control variables as those in the second stage) and the estimated coefficients of the control variable are not reported to save space (available upon request). Robust standard error is reported in the parenthesis. *, **, *** represent significance at 10%, 5%, and 1% level, respectively.

Table 6: Robustness checks

	1	2	3	4	5	6
Panel A: Second Stage of 2SLS						
Dependent Variable	Enterprise Performance					
Fan-Zhu-Wang Index	-0.53*** (0.11)					
Ratio of Government Consumption		149.54** (65.64)				
Power of Government vis-à-vis Market			1.61*** (0.25)	1.69*** (0.28)	0.51** (0.23)	5.35*** (1.88)
Regional Characteristics						
Logarithm of GDP per capita	1.31*** (0.19)	1.31*** (0.19)	0.34*** (0.05)	0.41*** (0.06)	0.31*** (0.05)	0.59*** (0.14)
Logarithm of Population	1.53*** (0.32)	1.53*** (0.32)	0.03 (0.04)	0.08* (0.04)	0.09** (0.04)	0.25** (0.11)
Entrepreneurial Characteristics						
Education	0.06*** (0.01)	0.02 (0.03)	0.07*** (0.01)	0.07*** (0.01)	0.02* (0.01)	0.11*** (0.03)
Age	-0.003 (0.004)	-0.001 (0.009)	-0.003 (0.003)	-0.002 (0.004)	-0.005 (0.003)	-0.04*** (0.01)
Managerial Experience	0.003 (0.005)	-0.01 (0.01)	0.007* (0.004)	0.006 (0.004)	0.001 (0.004)	0.01 (0.01)
CPC Membership	0.17* (0.09)	0.18 (0.18)	0.14* (0.07)	0.12 (0.08)	0.06 (0.07)	0.32* (0.17)
CPPCC Membership	0.03 (0.07)	-0.11 (0.16)	0.05 (0.06)	0.06 (0.06)	-0.08 (0.06)	0.19 (0.14)
Government Cadre	-0.15 (0.14)	0.43 (0.37)	-0.09 (0.11)	-0.06 (0.12)	-0.22* (0.12)	-0.07 (0.25)
SOE Cadre	-0.04 (0.08)	0.12 (0.15)	0.10* (0.06)	0.09 (0.07)	0.01 (0.06)	0.20 (0.14)
Enterprise Characteristics						
Enterprise Size	-0.11*** (0.03)	-0.20** (0.09)	-0.09*** (0.03)	-0.09*** (0.03)	-0.04 (0.03)	-0.22*** (0.08)
Enterprise Age	0.07 (0.05)	0.08 (0.11)	0.04 (0.05)	0.01 (0.05)	-0.08* (0.05)	0.08 (0.10)
Logarithm of Capital-Labor Ratio					0.63*** (0.03)	

	1	2	3	4	5	6
Panel B: First Stage of 2SLS						
Dependent Variable	Fan-Zhu-Wang Index	Ratio of Government Consumption	Power of Government vis-à-vis Market			
Distance	-0.60*** (0.08)	0.002** (0.001)	0.20*** (0.01)	0.19*** (0.01)	0.21*** (0.03)	0.06*** (0.02)
Shea Partial R2	0.0448	0.0036	0.2895	0.2583	0.2653	0.0044
Anderson Canonical LR Statistic	[104.09]***	[8.27]***	[770.18]***	[562.90]***	[449.87]***	[10.10]***
Cragg-Donald F-statistic	105.25	8.18	907.19	646.63	517.19	10.01
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observation	2,270	2,270	2,253	1,884	1,459	2,274

The first stage of 2SLS includes the same control variables as those in the second stage but does not report these results to save the space (available upon request). Robust standard error is reported in the parenthesis. *, **, *** represent significance at 10%, 5%, and 1% level, respectively.

Table 7: Investigation of rent seeking explanation

Dependent Variable	Input Procurement	Availability of Production Locations	Supply of Electricity and Water	Recruitment of Skilled Labor	Sales of Output	Sales of Service	Access to External Finance
Power of Government vis-à-vis Market	-0.09 (0.11)	-0.25* (0.13)	-0.12 (0.11)	-0.36** (0.14)	-0.28** (0.14)	-0.26* (0.13)	-0.11*** (0.04)
Shea Partial R2	0.2553	0.2572	0.2545	0.2479	0.2455	0.2530	0.2939
Anderson Canonical LR Statistic	[550.37]***	[549.68]***	[566.94]***	[519.13]***	[528.52]***	[497.95]***	[385.58]***
Cragg-Donald F-statistic	630.83	630.77	649.79	591.73	601.70	569.38	450.36
Regional characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Entrepreneurial characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Enterprise characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observation	1,867	1,849	1,930	1,822	1, 876	1,707	1,108

The estimation strategy used is 2SLS estimation. The First-stage results (including the same control variables as those in the second stage) and the estimated coefficients of the control variable are not reported to save space (available upon request). Robust standard are reported in the parenthesis. *, **, *** represent significance at 10%, 5%, and 1% level, respectively.

Table 8: Comparative statistics analysis

Dependent Variable	1	2
	Power of Government vis-à-vis Market	
Influential Competitors	0.15** (0.07)	
Ratio of Extralegal Payments		-1.00* (0.58)
Regional Characteristics		
Logarithm of GDP per capita	-0.08 (0.06)	-0.10 (0.09)
Logarithm of Population	-0.13*** (0.05)	-0.13** (0.06)
Entrepreneurial Characteristics		
Education	-0.03** (0.01)	-0.03* (0.02)
Age	0.02*** (0.004)	0.02*** (0.01)
Managerial Experience	-0.004 (0.004)	-0.01 (0.01)
CPC Membership	-0.06 (0.09)	-0.13 (0.13)
CPPCC Membership	-0.06 (0.07)	-0.05 (0.10)
Government Cadre	-0.07 (0.13)	-0.20 (0.20)
SOE Cadre	-0.01 (0.07)	0.04 (0.10)
Corporate Characteristics		
Enterprise Size	0.10*** (0.03)	0.13*** (0.04)
Enterprise Age	-0.01 (0.05)	-0.09 (0.09)
Industry Dummy	Yes	Yes
Number of Observation	2,221	1,125
Pseudo R2	0.0332	0.0429
<i>p</i> -value for chi2	0.0000	0.0000

The estimation strategy used is the ordered probit estimation. Robust standard error is reported in the parenthesis. *, **, *** represent significance at 10%, 5%, and 1% level, respectively.

- 2009
- No 1 Jenni Pääkkönen: Economic freedom as a driver for growth in transition
 - No 2 Jin Feng, Lixin He and Hiroshi Sato: Public pension and household saving: Evidence from China
 - No 3 Laurent Weill: Does corruption hamper bank lending? Macro and micro evidence
 - No 4 Balázs Égert: Dutch disease in former Soviet Union: Witch-hunting?
 - No 5 Rajeev K. Goel and Iikka Korhonen: Composition of exports and cross-country corruption
 - No 6 Iikka Korhonen and Aaron Mehrotra: Real exchange rate, output and oil: Case of four large energy producers
 - No 7 Zuzana Fungáčová, Christophe J. Godlewski and Laurent Weill: Asymmetric information and loan spreads in Russia: Evidence from syndicated loans
 - No 8 Tuuli Juurikkala, Alexei Karas, Laura Solanko: The role of banks in monetary policy transmission: Empirical evidence from Russia
 - No 9 Ying Fang and Yang Zhao: Do institutions matter? Estimating the effect of institutions on economic performance in China
 - No 10 Michael Funke and Hao Yu: Economic growth across Chinese provinces: in search of innovation-driven gains
 - No 11 Jarko Fidrmuc and Iikka Korhonen: The impact of the global financial crisis on business cycles in Asian emerging economies
 - No 12 Zuzana Fungáčová and Laurent Weill: How market power influences bank failures: Evidence from Russia
 - No 13 Iikka Korhonen and Maria Ritola: Renminbi misaligned - Results from meta-regressions
 - No 14 Michael Funke, Michael Paetz and Ernest Pytlarczyk: Stock market wealth effects in an estimated DSGE model for Hong Kong
 - No 15 Jenni Pääkkönen: Are there industrial and agricultural convergence clubs in China?
 - No 16 Simo Leppänen, Mikael Linden and Laura Solanko: Firm behavior under production uncertainty: Evidence from Russia
 - No 17 Julian Du, Yi Lu and Zhigang Tao: China as a regulatory state

Bank of Finland
BOFIT – Institute for Economies in Transition
PO Box 160
FIN-00101 Helsinki

 + 358 10 831 2268

bofit@bof.fi

<http://www.bof.fi/bofit>