Does Nationalization Work? Evidence from Russian State Takeovers

Carsten Sprenger

ICEF, Higher School of Economics Moscow

Presentation at the ACES Meetings 2012, Chicago, January 6
Session "Regional and Institutional Development in a Very Large Country - Case of Russia"

Introduction (1)

- During the financial crisis many governments have resorted to nationalization of banks and, in some cases, non-financial companies.
- In Russia, companies in various sectors have been taken over directly or indirectly via existing state-owned enterprises (SOEs) during the last eight years.
- This provides us with a good sample to study the effect of nationalization on company performance.

Introduction (2)

- There is no proclaimed program of nationalization of the Russian government.
- However, several objectives have been mentioned, such as
  - modernization of infrastructure
  - diversification of the economy by attracting investments in high-technology sectors
  - Innovation
  - creation of large vertically integrated structures that can survive the international competition.

Sectors with increased government role

- Natural resource extraction: Sibneft became Gazpromneft, Yukos subsidiaries to Rosneft, consolidation of the federal government stake of Alrosa
- Manufacturing (including military-industrial firms): Rosoboronexport, now part of the State Corporation Rostekhnologii, acquired majority stakes in AvtoVaz, VSMPO Avisma (titanium), created the holding Vertolety Rossii
- Nuclear energy: Consolidation of state assets in Rosatom
- Banking: Gutabank and Promstroibank acquired by VTB, Kitfinans by Russian Railways

This paper…

- studies the performance effects of nationalization using a comprehensive dataset of government takeovers in Russia from 2004-2008,
- uses propensity score matching to control for selection of to-be-nationalized firms.
- To our knowledge, this is the first econometric study of performance effects of nationalization at the firm level.

Literature (1)

- Literature on nationalization is mostly descriptive and very scarce.
- Guriev at al. (2011, JLEO) analyze nationalization episodes in the oil industry around the world from 1960 to 2002.
- Chernykh (2011, JCF) studies the selection criteria for nationalization of the largest companies in Russia, 2004-2008.
- Sprenger (2010) provides a description of scale and scope of the Russian public sector.

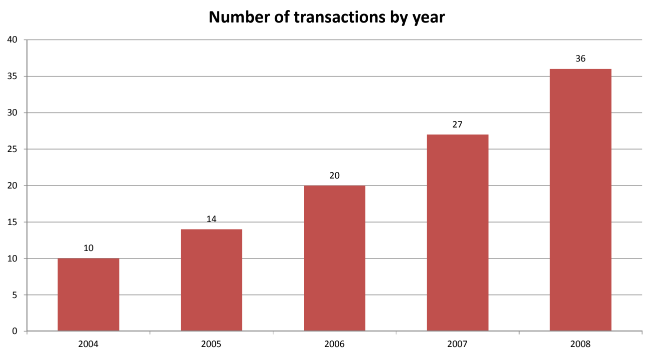
Literature (2)

- Literature on the comparative performance of private and state-owned companies
  - Performance effects of privatization: Surveys of Djankov and Murrell (2002, JEL) and Estrin et al. (2009, JEL)
  - Cross-sectional comparisons of private and state-owned companies, starting from Boardman and Vining (1989, JLE). Recent studies on China show that SOEs do not always underperform private companies (Tian and Estrin (2009, JCE), Chen et al. (2009, JBF)).

Database Construction

- Government acquisitions extracted from M&A databases Zephyr (Burean van Dijk) and ThomsonOne Deals
- Confirmed state ownership of acquirer, previous private ownership of the target as well as time and actual occurrence of the transaction
- Financial information from Ruslana and Interfax Spark
- Result: 107 nationalization transactions; accounting information for 82 targets.

Sample Description: Number of Deals

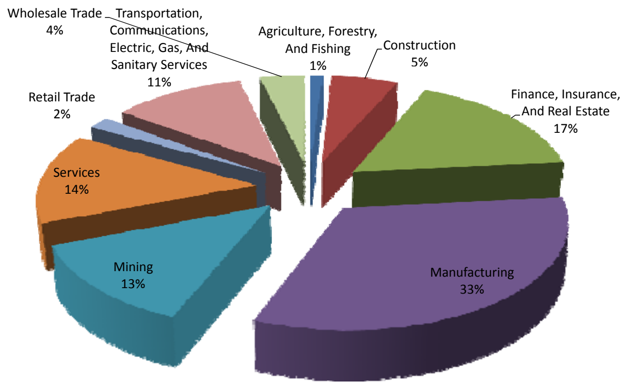


Sample Description: Number of Deals

By ownership stake exceeded as a result of the acquisition (25% or/and 50%)

Year	Nat25=1, Nat50=0	Nat25=0 Nat50=1	Nat25=1 Nat50=1	Any of Nat25, Nat50 equals 1
2004	2	3	5	10
2005	2	5	7	14
2006	5	0	15	20
2007	6	5	16	27
2008	4	11	21	36
Total	19	24	64	107

Sample Description:



Methodology of the performance comparison (1)

- Performance indicators up to three years before and after nationalization
  - log of number of employees
  - log of total assets
  - log of sales revenues from the main activity
  - operating efficiency (revenues per employee)
  - return on assets (operating profit divided by total assets)
  - leverage ratio (all debt divided by total assets)

Methodology of the performance comparison (2)

- Simple performance differences before and after nationalization
- Difference in difference combined with propensity score matching
  - Average treatment effect on the treated: $E\left[y_{i,t+s}^1 - y_{i,t+s}^0 \mid A_{it} = 1\right]$
  - If all variables that affect nationalization and outcomes can be collected in a vector of covariates X then this can be substituted by the observable quantity $E\left[y_{i,t+s}^1 \mid X, A_{it} = 1\right] - E\left[y_{i,t+s}^0 \mid X, A_{it} = 0\right]$

Results: Simple Performance Differences

Average change in performance indicators and t-test for significance

Change in	# observ	Mean	Std. Err.	t-stat
log employment	56	-0.12799	0.113739	-1.1253
log revenue	73	-0.40863	0.138841	-2.9431
log total assets	78	-0.61363	0.112094	-5.4742
operating efficiency	63	-2134	627.7855	-3.3992
return on assets	80	0.003394	0.032638	-0.104
leverage	80	-0.09461	0.044416	-2.1302

Results: Selection for Nationalization

Probit models of the likelihood of nationalization

	Either Nat25 or Nat50		Nat25 and Nat50	
Log total assets	0.22	*5.38*	0.11	*1.67*
Log operating revenue	0.04	*0.99*	0.19	*2.61*
ROA	-0.78	*-3.13*	-0.44	*-1.37*
Leverage	-0.15	*-1.02*	-0.33	*-1.52*
constant	-6.80	*-14.65*	-7.33	*-12.53*
No. of observ.	31254		25159	
Pseudo R^2 (%)	35.2		40.4	

Results: Diff in diff with propensity score matching for performance

- All average treatment effects on the treated are measured for the difference in performance indicators at=0, t=1, t=2 and t=3, compared to t= -1, where t=0 is the year of nationalization, as well as for the average of t=1 until t=3, compared to the average t= -3 until t= -1.
- None of them is significantly different from zero, except for an increase in the leverage ratio one and two years after nationalization.
- This is true for two treatment definitions: any nationalization or both 25% and 50% thresholds surpassed in the same transaction

Results, continuation

- It seems that nationalized firms operate at shrinking markets but do not significantly worse than matched private firms.
- The lack of performance effects may be due to different intermediating variables that have opposing performance implications
  - perhaps less efficient management vs.
  - better access to credit, implicit state guarantee, direct subsidies.
- Increase in leverage (although not too robust) is a rational reaction to an implicit state guarantee for corporate debt of state-owned enterprises.

Conclusion (1)

- We have assembled a comprehensive database of nationalization transactions in Russia and investigated the effects of nationalization on financial performance of target companies.
- Nationalized companies perform no better or worse than their closest neighbors in terms of the propensity score.

Conclusion (2)

- Continuation of this research:
  - Distinguish bailouts from strategic state takeovers
  - Study intermediating effects of corporate governance (changes in management and board composition), subsidies, access to credit, in particular from state-owned banks
  - Disentangle the effects of nationalization and inclusion into a business group.