Political Economy of Network Economy

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Summary with Bill Megginson at OU

- Privatization is followed by a 2.65%p increase in the 5-year mean ratio of operating-income-to-sales
- as firms catch up with global standard of industry-matched control groups, and
- by a 4.2%p decrease in the next 5-year mean ratio.
- Previously documented striking achievements were mere reflection of the world business cycle, the pace of economic activity in general, during the last three decades.

Overview

- **Study long-run operating performance (OP) of 35 privatized Telecom IPOs (TIPOs) from 31 countries over 1981-2003.**
- **Compare -1 year OP to +1 ~ +10th anniversary year OP of event firm and to industry median of international markets, FTSE all World.**
- **TIPOs significantly improves their profitability and efficiency, but they significantly under-perform their peers firms.**
- **Key takeaways:**
  - TIPOs **do not** out-perform;
  - ***The improvement OP of TIPOs does not result from expropriation of monopolistic power.***
  - ***Well-designed regulation scheme is much more important than competition.***

Do Private IPOs Under-Perform Over Long Term? Evidence Is clear

- **Yes:**
  - **J. Ritter (1984, ……, 2002)**
  - **B. Jain and O. Kini (1994)**
  - **W. Mikkelson, M. Partch, and K. Shah (1997)**
    - Up to ten years, small and young companies underperform industry-matched firms,
    - While the OP of larger and more established firms is similar to the OP of industry-matched firms after going public.
- ***All agree benchmarks, measures are critical*****:** Jain and Kini (1994); B. Barber and J. Lyon (1996); W. Mikkelson, M. Partch, and K. Shah (1997); Lyon, Barber, and Tsai (1999); Loughran and Ritter (2000), …

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Existing Studies Show very Strong OP of privatization IPOs (PIPOs) Over 3~4 year after IPO

- Bortolotti, D'Soza, Fantini, and Megginson (2002) in the global telecommunications industry
- Dewenter and Malatesta (AER 2001) in the various sector
- La Porta, and Lòpez-de-Silanes (QJE 1999), evidence from Mexico. – we re-visit those papers.
- **Megginson and Netter (JEL 2000), From state to market: A survey of empirical studies on privatization.**
- ***None of them employ industry, size or ROA benchmarks!!***
- **They just compare post-privatization OP changes by comparing three-year mean operating and financial performance of divested firms to their own mean performance during their last thee years as SOEs.**

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Sample Description

- **Collect privatized TIPO samples from two sources.**
  - Primary source the *Privatisation International* database, 42 initial equity offerings, February 1981 through June 1997.
  - Appendix of Megginson (2005) – World Bank database
- **Financial statement information from *Datastream*** (Thomson International) and prospectus

  + OECD and ITU data + Osiris
- **Final sample: 35 TIPOs from 35 countries**
  - Total proceeds: $134 billion
  - Average proceeds: $4 billion
  - UK, Chile, and Japan have largest number of TIPOs with 2
  - Largest total proceeds ($33 billion) from Japan's 2 TIPOs, NTT and NTT DoCoMo

Methodology

- **Estimate annual level and level changes of TIPOs appear in their financial statements**
- **We use industry median as a benchmark:**
  – We control for macroeconomic and industry factors by computing the same indicators used to describe the performance of privatized firms for a control-sample of private firms with the same two-digit FTAG4 codes of FTSE all World index which are similar to two-digit S.I.C codes of USA.

Methodology

- **We use industry median as a benchmark:**
  - The index consist of 3,000 companies firms around the world, both from G7 countries and from emerging markets. The index includes 115 publicly-traded telecom operators as of 2007.
- **For sensitivity check.**
  - We calculate various measures of profitability and efficiency such as EBITDA-based ratios
  - Results are very similar
- We not employ panel regression, but draw some pictures to describe and compare the OP of sample and benchmark firms.
- This is just a pilot study for JPE, AER, or Econometrica.

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Results

- **Profitability improves over 5 year market period and then declines**
- **Efficiency improves over all the sample periods.**
- ***The improvement in OP of TIPOs does not result from expropriation of monopolistic power.***
- Indeed, previously documented striking achievements were mere reflection of the world business cycle during the last three decades.
- **We should address the effect of technological innovation and changes in service quality during the sample period.**

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Table 1. the sample

Distribution of privatizations

By Year

Year	Number	Percentage
1981	1	2.86%
1984	1	2.86%
1987	2	5.71%
1990	3	8.57%
1991	3	8.57%
1992	1	2.86%
1993	2	5.71%
1994	3	8.57%
1995	1	2.86%
1996	4	11.43%
1997	5	14.29%
1998	2	5.71%
1999	1	2.86%
2000	5	14.29%
2003	1	2.86%
Total	35	100.00%

By Type of Offering

Category	Number	Percentage
Primary	8	22.86%
Secondary	27	77.14%
Total	35	100.00%

By Legal origin

Category	Number	Percentage
Common Law	10	28.57%
Civil Law	25	71.43%
French	13	37.14%
German	9	25.71%
Scandinavian	3	8.57%
Total	35	100.00%

By Region [a]

Category	Number	Percentage
Africa and the Middle East	2	5.71%
Latin and the Caribbean	6	17.14%
Asia and the Pacific	10	28.57%
Europe and Central Asia	16	45.71%
North America	1	2.86%
Total	35	100.00%

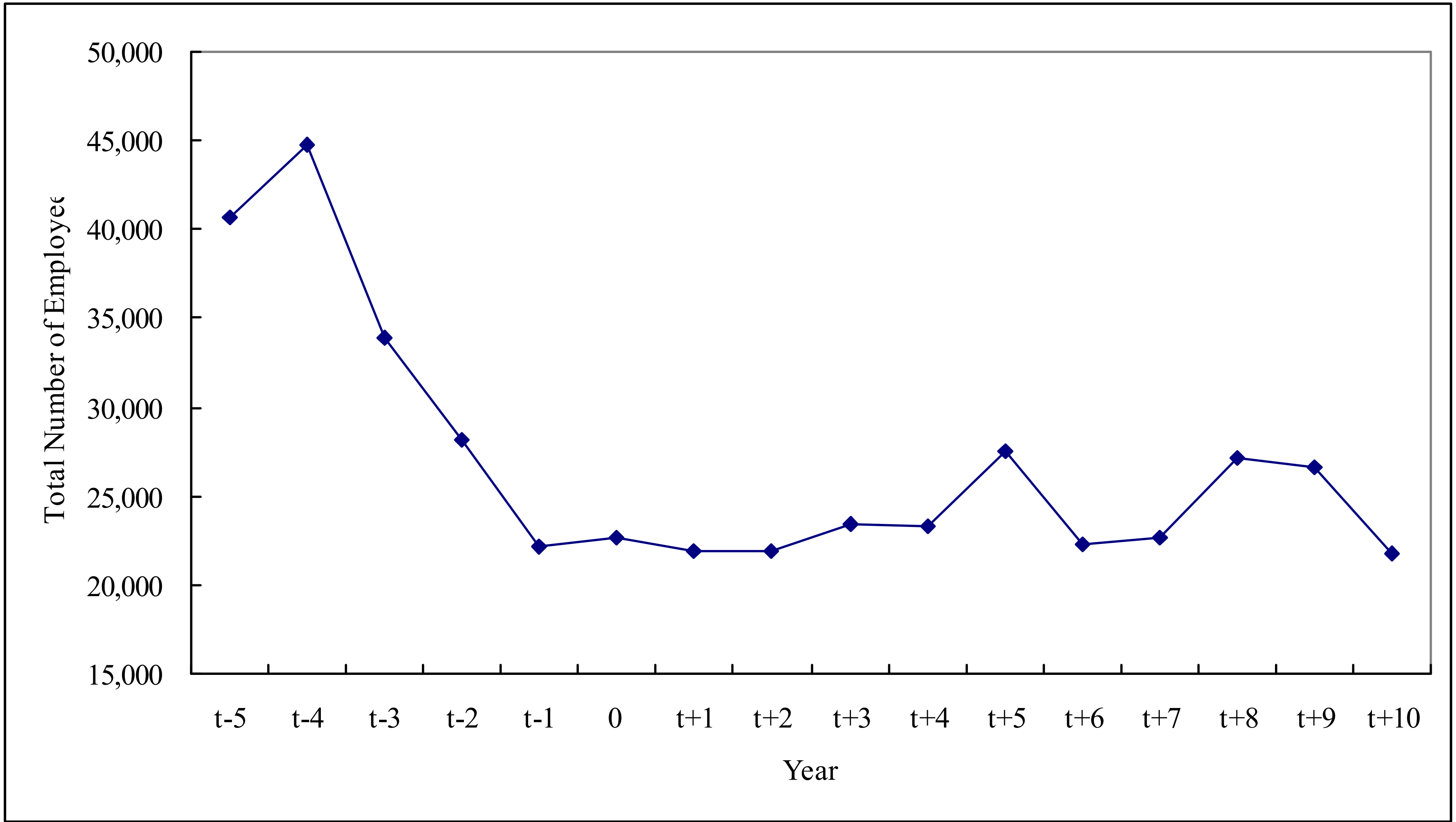
By Income [a]

Category	Number	Percentage
High	23	65.71%
Middle	10	28.57%
Low	2	5.71%
Total	35	100.00%

Results: Raw data

	N	a (-5, -1)	b (1, 5)	c (6, 10)	b vs a	c vs b
					t-stat. for changes in mean	
					z-stat. for changes in median	
Profitability						
Operating-income/Sales	35	0.4134	0.4399	0.3979	1.626	-2.469**
		0.4030	0.4323	0.3799	1.703*	-2.346**
Operating-income/PPE	35	0.2749	0.3703	0.3962	5.548***	1.074
		0.2694	0.3503	0.3920	4.504***	1.157
Operating efficiency						
Cost/Sales	23	0.1329	0.1649	0.2002	1.277	2.067*
		0.1338	0.1546	0.2288	1.475	1.883*
log(Sale/Employee)	31	0.9741	1.0557	1.1047	7.983***	5.921***
		0.9795	1.0470	1.0828	4.782***	4.349***
Sales/Assets	35	0.4928	0.5138	0.5250	0.986	0.684
		0.4676	0.4991	0.5182	1.638	0.876
Labor						
log(Employee)	32	10.2093	10.1684	10.2260	-0.432	0.071
		10.0405	9.9359	9.9744	-1.078	0.216
Assets and investment						
Investment/Sales	31	0.3827	0.2713	0.1917	-1.697*	-4.575***
		0.2577	0.2395	0.1654	-2.038**	-3.538***
Investment/PPE	31	0.2379	0.2110	0.1696	-0.770	-4.029***
		0.1771	0.2064	0.1704	0.196	-3.431***
Output						
log(Sales)	35	0.9916	1.0201	1.0381	6.076***	6.663***
		0.9945	1.0147	1.0324	4.930***	4.336***
Leverage						
Debt/Assets	35	0.3379	0.2804	0.3552	-2.029**	3.482***
		0.3491	0.3081	0.3691	-1.409	3.060***
Long-term-debt/Assets	35	0.2842	0.2135	0.2683	-2.769***	3.239***
		0.2751	0.2243	0.2833	-2.015**	2.757***
Taxes						
log(Taxes)	35	0.9647	0.9950	1.0064	1.234	0.048
		0.9882	1.0034	1.0239	1.471	0.148
Taxes/Sales	35	0.0411	0.0556	0.0456	2.217**	-2.293**
		0.0374	0.0522	0.0436	2.094**	-2.258**

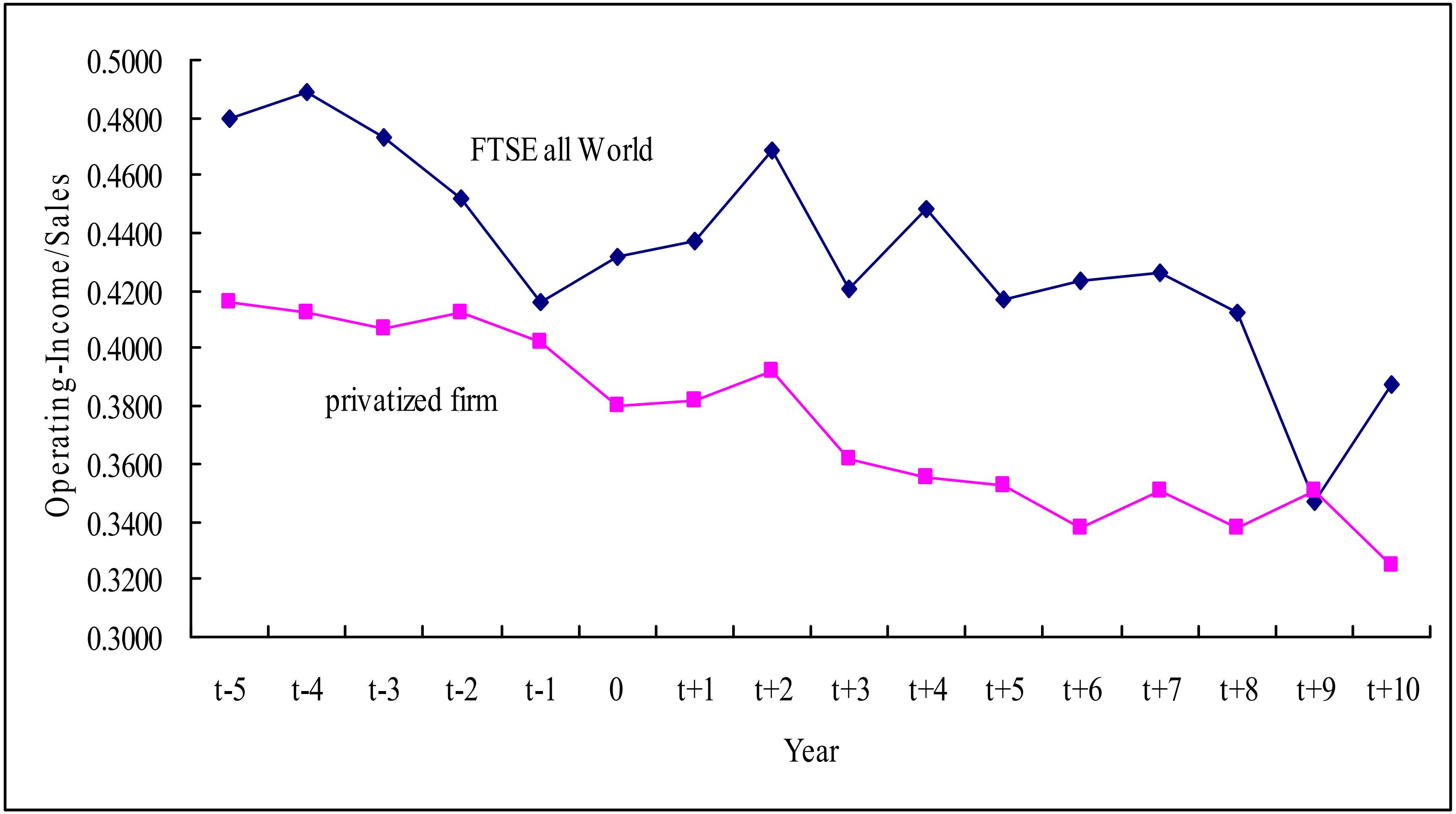
Figure 1. Median total employment of privatized firms



Results: Industry-adjusted

		a	b	c	b vs a	c vs b
		(-5, -1)	(1, 5)	(6, 10)	t-stat. for changes in mean z-stat. for changes in median	
Profitability						
Operating-income/Sales	35	-0.0122	-0.0838	-0.0790	-3.917***	0.256
		-0.0205	-0.0956	-0.0820	-3.508***	0.632
Operating-income/PPE	35	0.0163	-0.0697	-0.0852	-3.996***	-0.780
		0.0291	-0.0483	-0.0719	-3.606***	-0.848
Operating efficiency						
Cost/Sales	23	0.1315	0.0982	0.0662	-0.903	-2.933***
		0.1449	0.1109	0.0739	-0.414	-2.675***
log(Sale/Employee)	31	0.0197	-0.0366	-0.0831	-4.321***	-2.664**
		0.0150	-0.0345	-0.0586	-3.975***	-2.457**
Sales/Assets	35	-0.0378	-0.0777	-0.0911	-1.478	-1.224
		-0.0144	-0.0703	-0.0657	-1.293	1.171
Labor						
log(Employee)	32	0.0167	-0.0122	-0.0708	-3.349***	-3.201***
		0.0032	-0.0117	-0.0438	-2.883***	-3.886***
Assets and investment						
Investment/Sales	31	-0.1501	-0.0566	-0.0046	1.253	1.973*
		-0.0131	-0.0214	-0.0096	-0.553	1.657*
Investment/PPE	31	-0.0636	-0.0199	0.0118	0.999	1.656
		-0.0101	-0.0119	-0.0105	-0.168	1.514
Output						
log(Sales)	35	0.0165	-0.0315	-0.0724	-3.926***	-3.140***
		0.0112	-0.0200	-0.0634	-4.409***	-4.373***
Leverage						
Debt/Assets	35	0.0046	0.0354	-0.0666	1.006	-4.998***
		0.0025	0.0121	-0.0676	0.568	-3.619***
Long-term-debt/Assets	35	0.0016	0.0632	0.0019	2.267**	-3.795***
		-0.0113	0.0516	0.0044	1.842*	-3.108***
Taxes						
log(Taxes)	35	0.0508	-0.0481	-0.1542	-3.022***	-3.090***
		0.0280	-0.0431	-0.1250	-2.801***	-2.516**
Taxes/Sales	35	0.0193	-0.0023	-0.0044	-3.885***	-1.001
		0.0153	-0.0037	-0.0027	-3.254***	0.821

Figure 2. FTSE all World vs. privatized firms: median of OI to sales



Industry catching up, ..due to technological innovation???

Figure 3. FTSE all World vs. privatized firms: median cost-per-unit

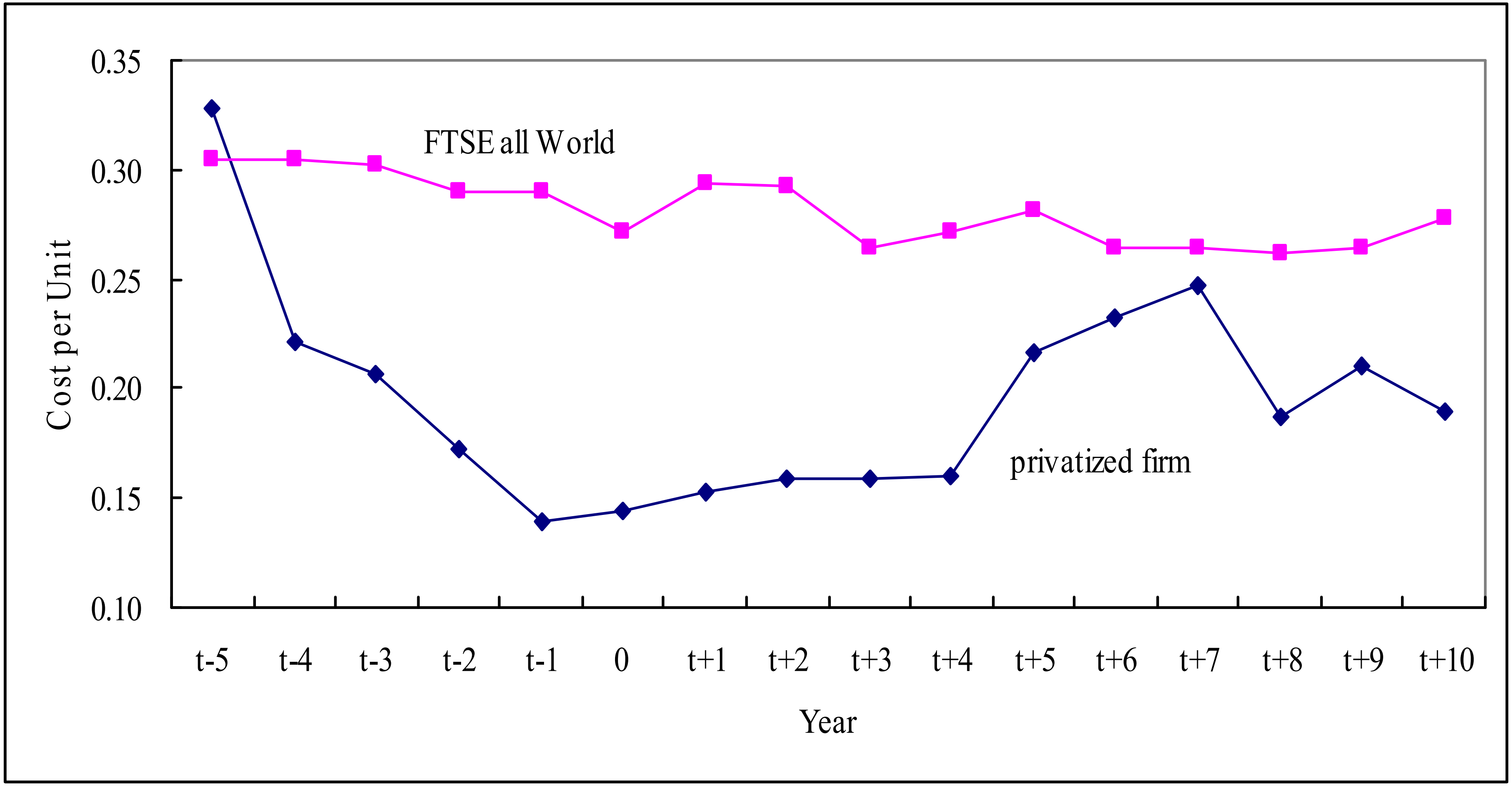


Figure 4. Incumbents versus entrants

- (Panel A) Median ratio of operating-income to sales

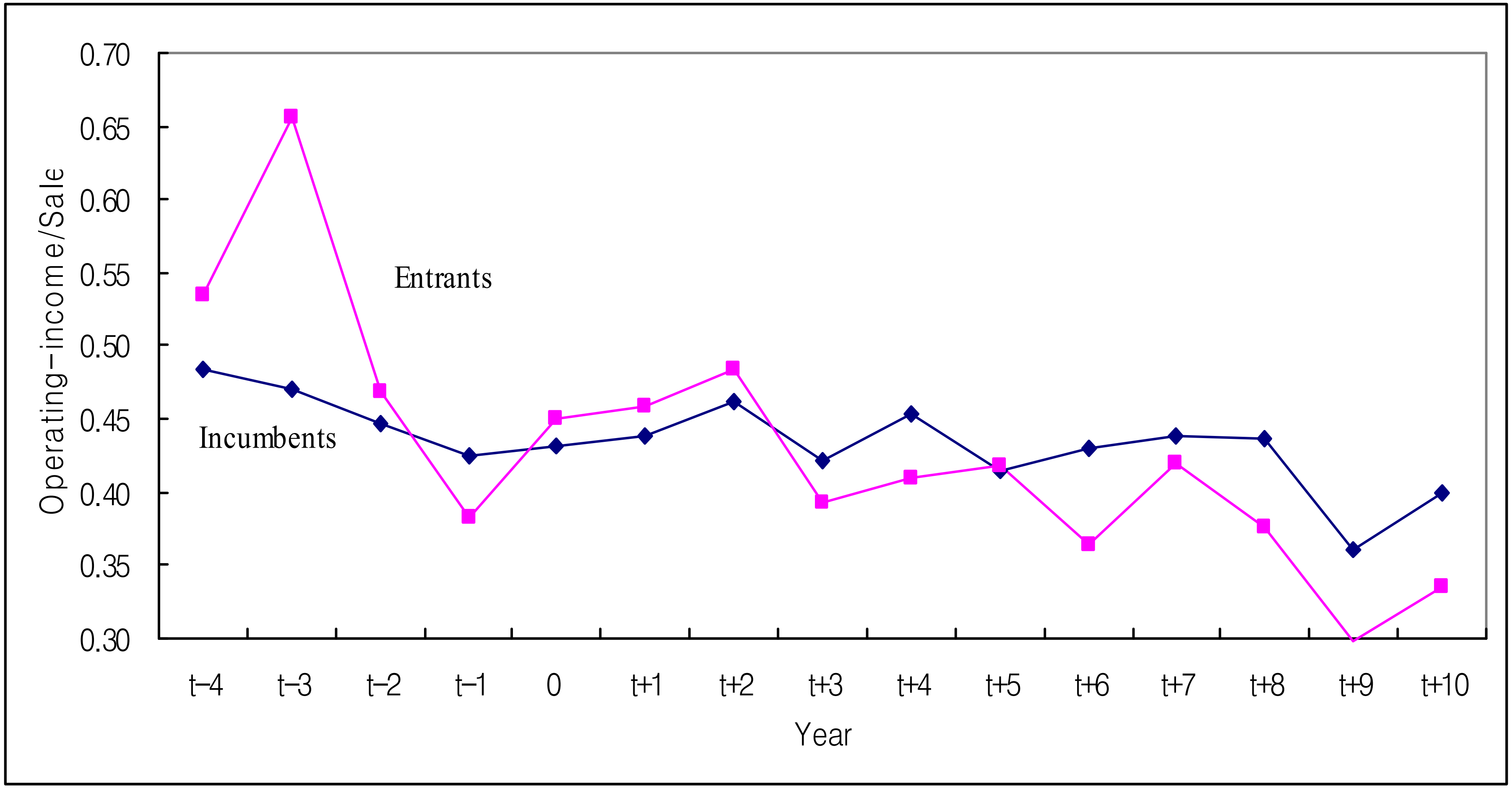


Figure 4. Incumbents versus entrants

(Panel B) Median ratio of operating-income to asset turnover (sales-to-assets)

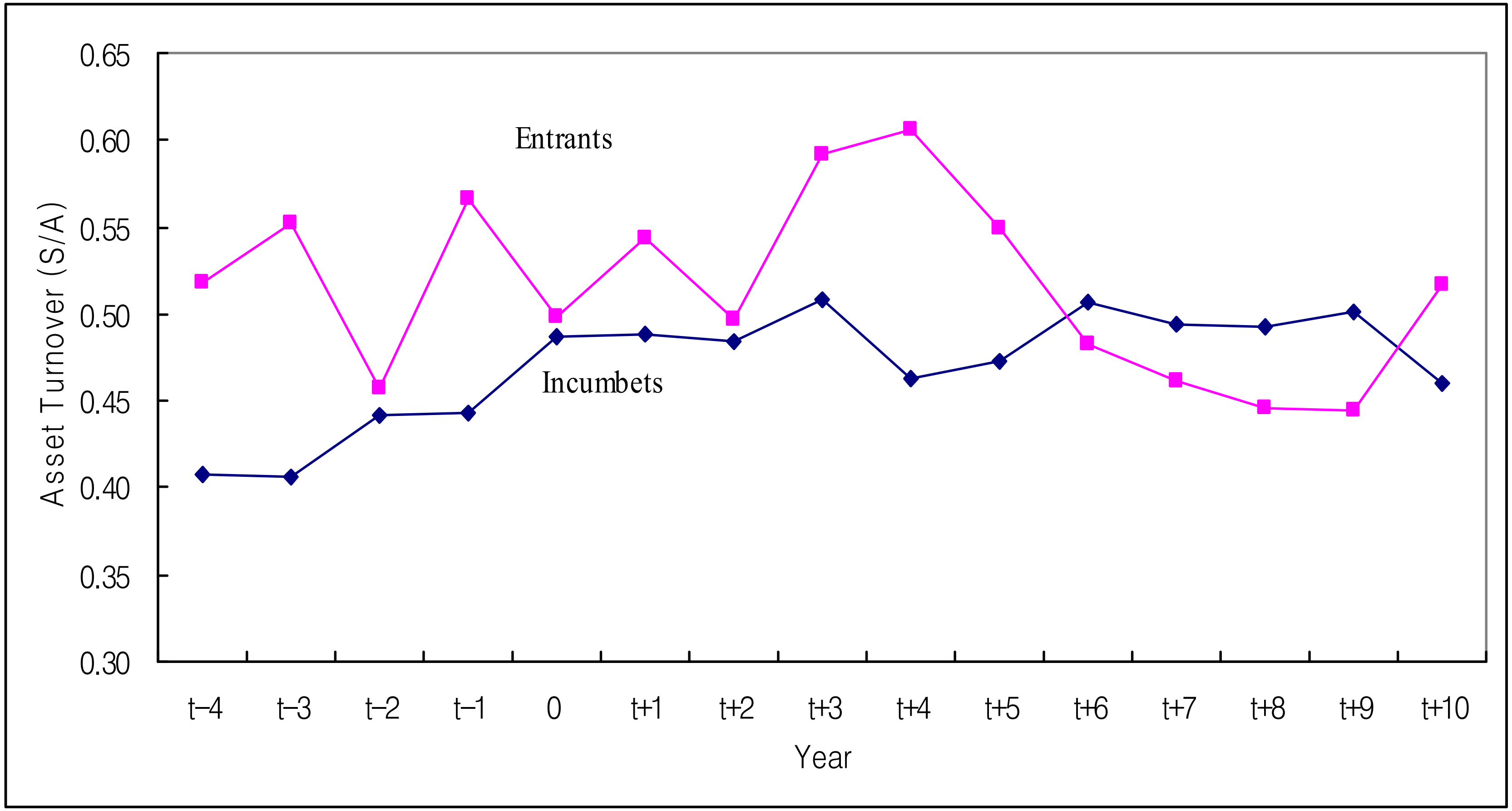


Figure 5. Partial versus complete privatization

(Panel A) Median ratio of operating-income to sales

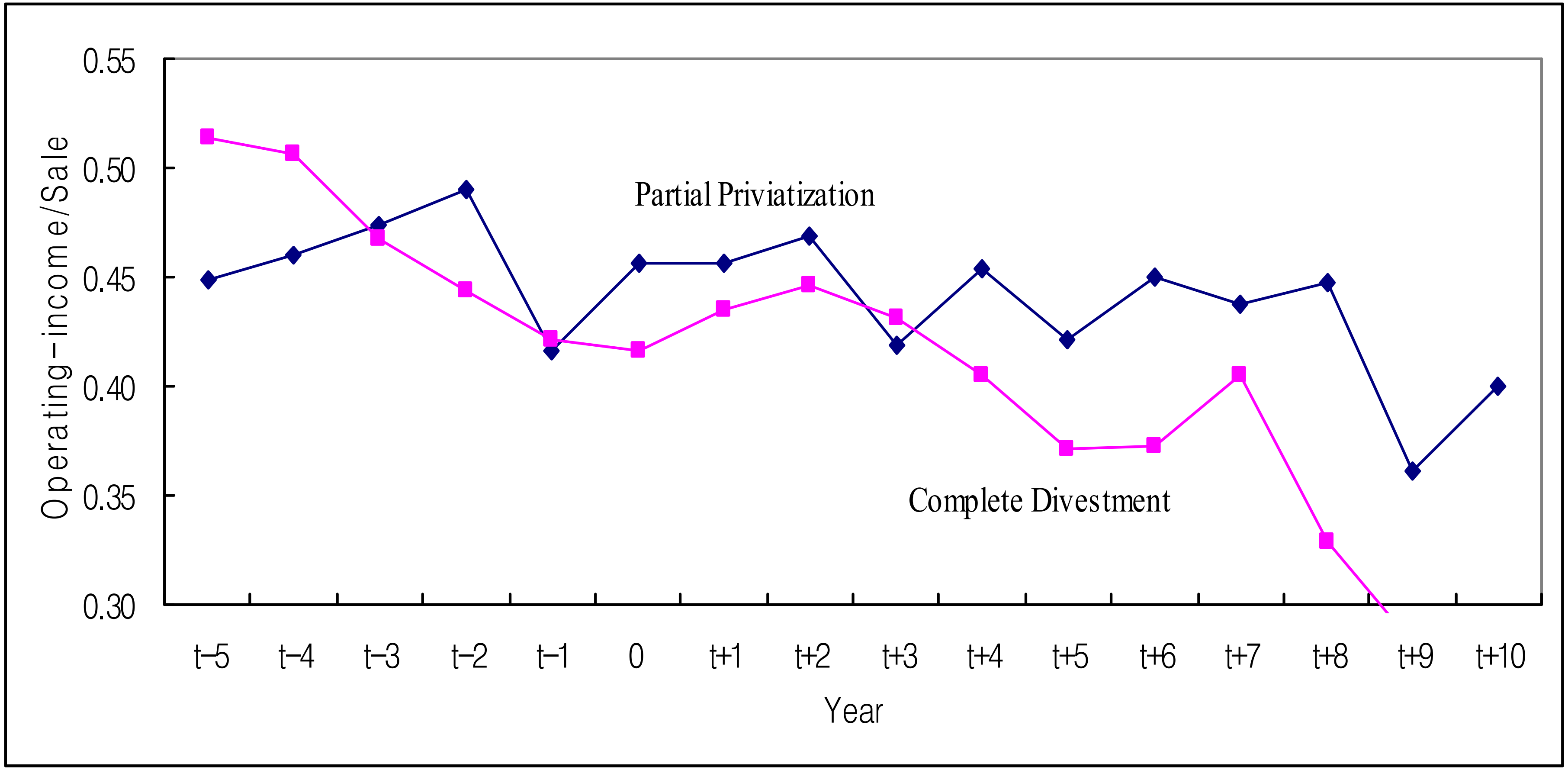


Figure 5. Partial versus complete privatization

(Panel B) Median ratio of operating-income to asset turnover (sales-to-assets)

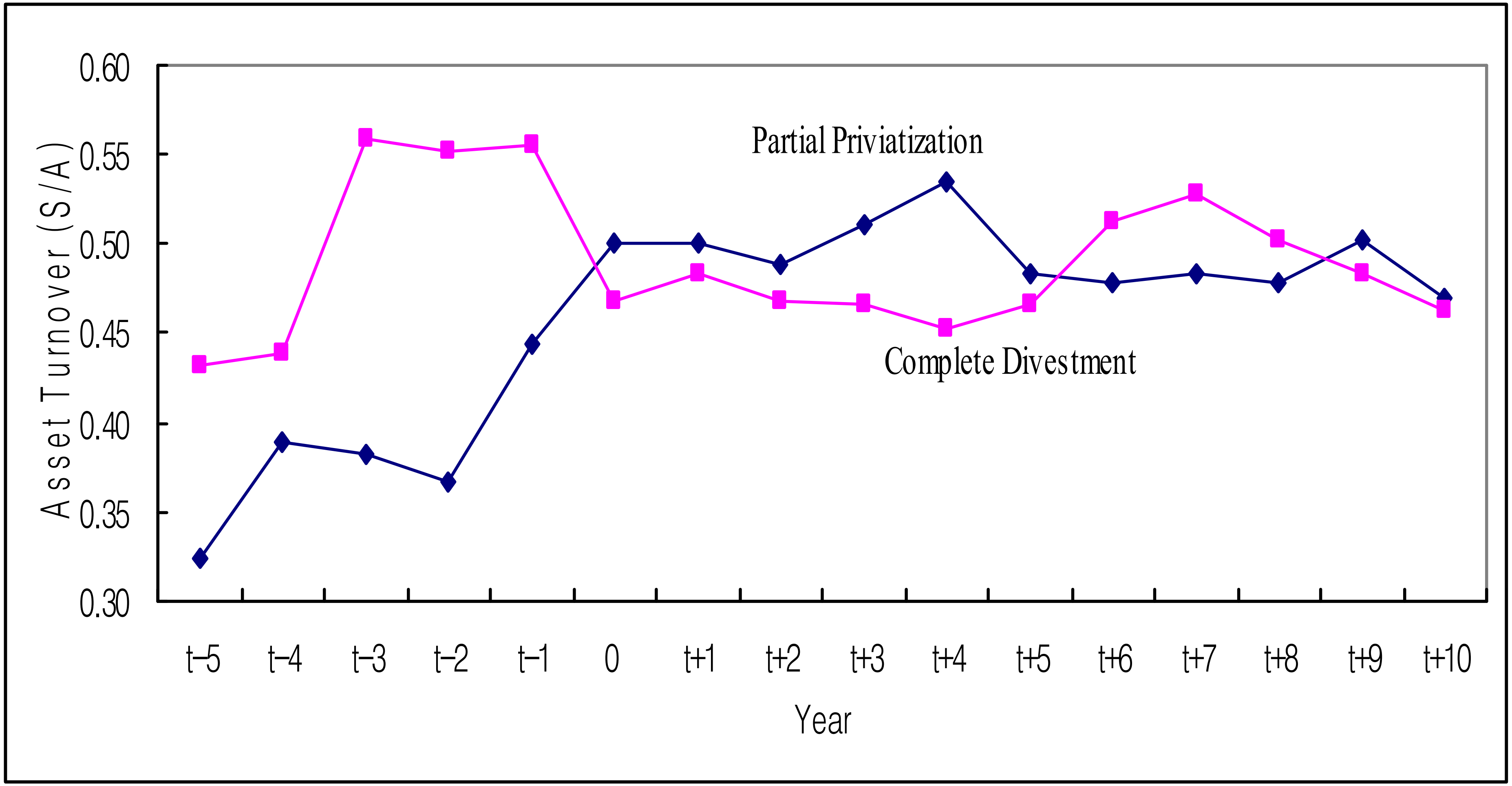


Figure 6. Firms from civil versus common law economies

(Panel A) Median ratio of operating-income to sales

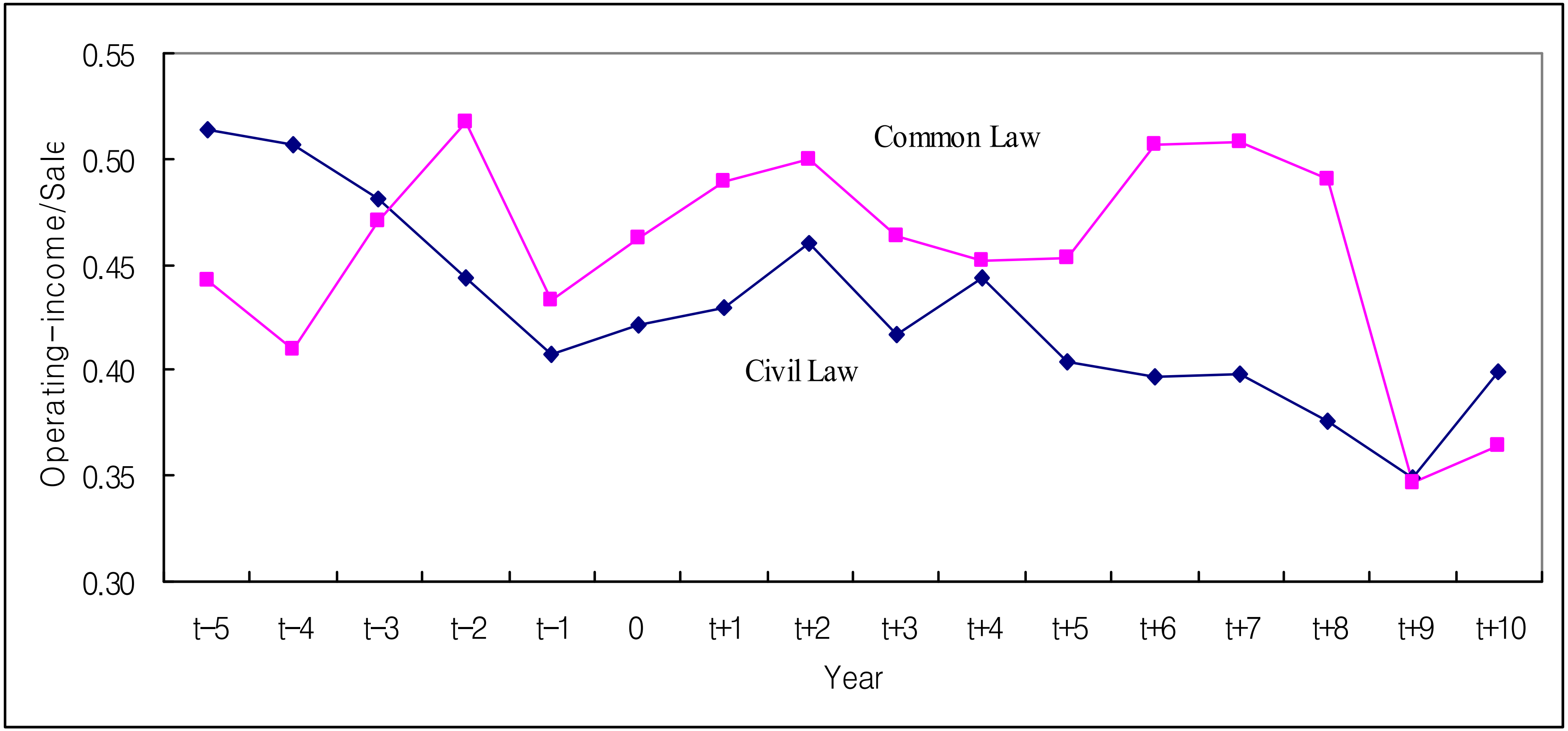


Figure 6. Firms from civil versus common law economies

(Panel B) Median ratio of operating-income to asset turnover (sales-to-assets)

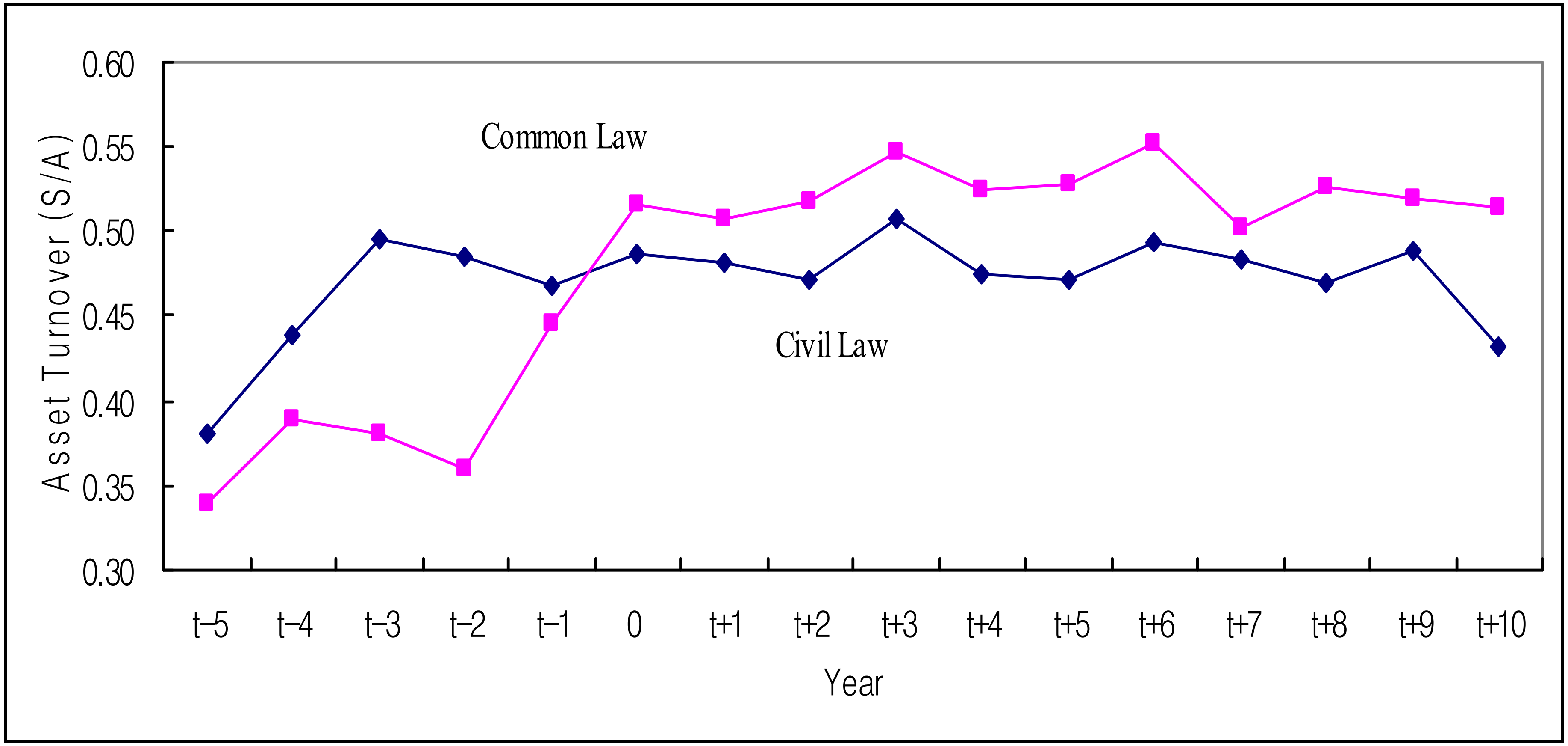


Figure 7. Firms in developed versus emerging economies

(Panel A) Median ratio of operating-income to sales

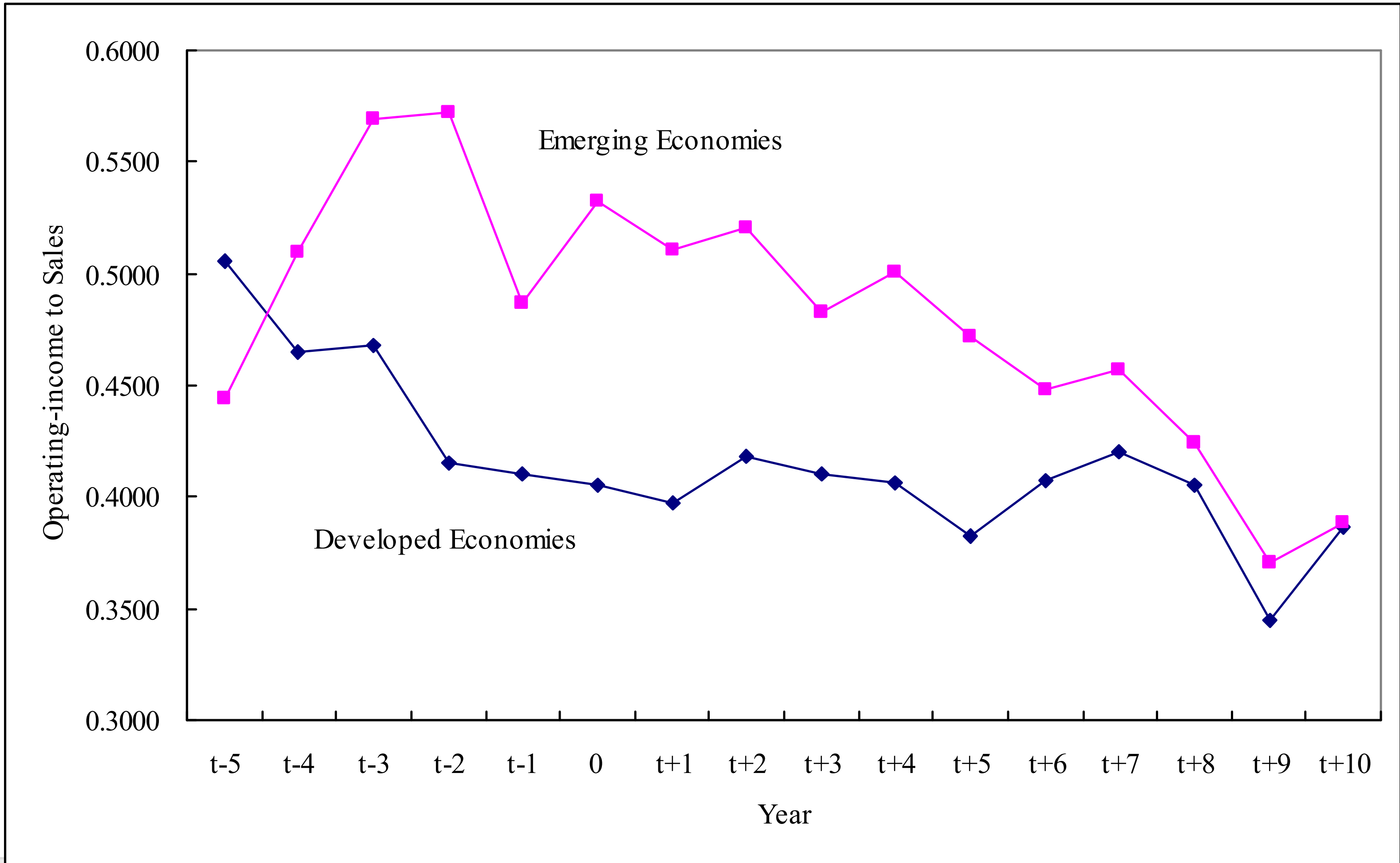


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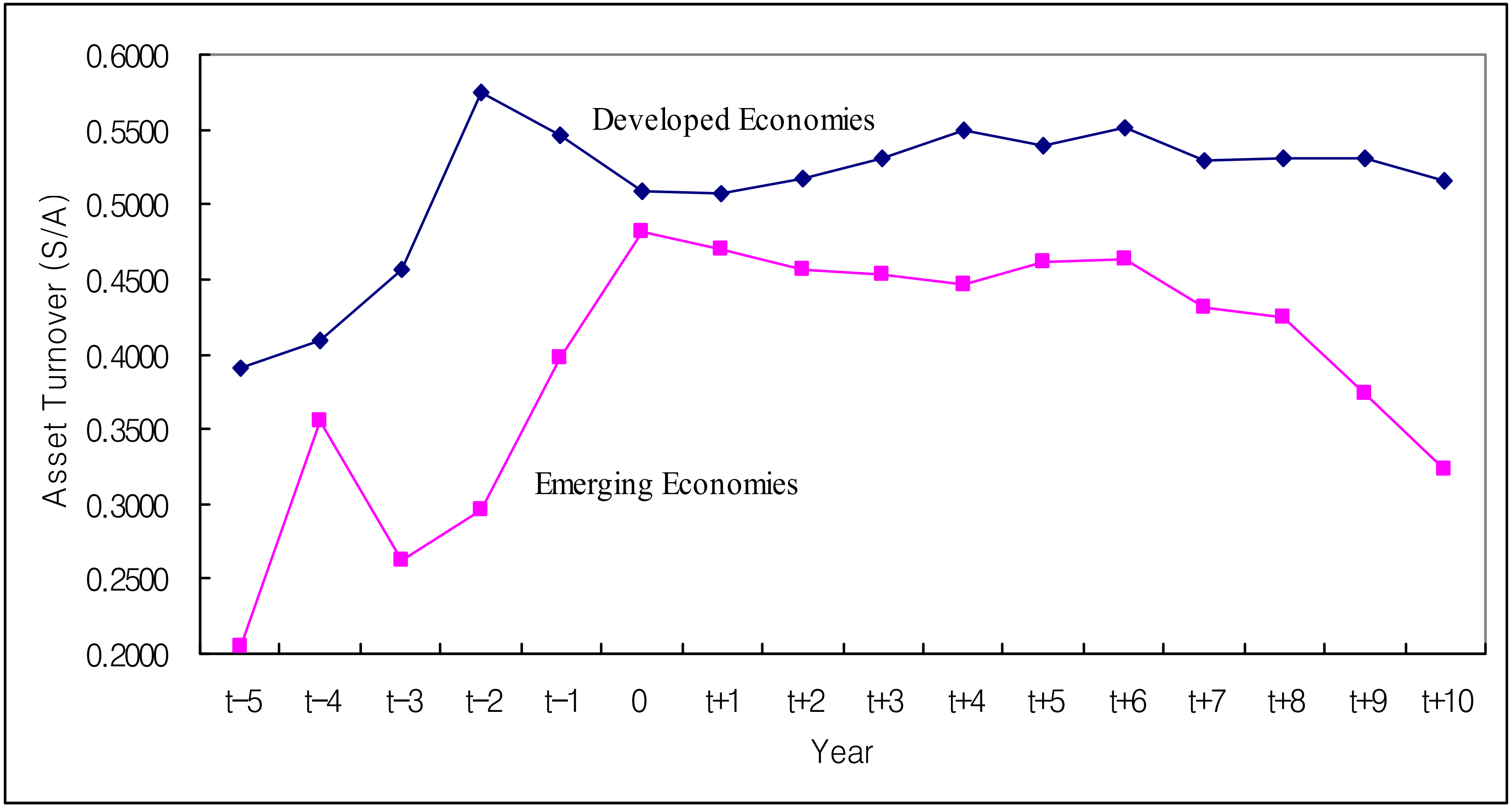
Figure 7. Firms in developed versus emerging economies

(Panel B) Median ratio of operating-income to asset turnover (sales-to-assets)



Privatization and Restructuring – results from panel regressions

- Privatization is significantly related to higher profitability, output and efficiency, institutional features of the country.
- Competition significantly reduces profitability, employment, and **efficiency - significantly**.
- Retained government ownership is associated with a decrease in **profitability**.
- Price regulation significantly decreases **profitability**.
- Major efficiency gains result from better incentives and productivity or technological development, indeed.
- In sum, the financial and operating performance of telecoms improves significantly after privatization, but a sizable fraction of the observed improvement results from regulatory changes-alone or in combination with ownership changes rather than privatization alone.

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Thank You

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