

Profit persistence in forest industry – A regional firm-level analysis

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Outline

- Sources of profitability in the largest forest industry companies?
- Results for ongoing research on economic performance in forest industry; firm and regional level regression analysis on 1996-2005 for TOP50 companies

Economic Performance

- What determines the performance?
 - All companies are significantly influenced by the global macroeconomic conditions
 - Lately declining real prices, increasing costs, exchange rates, capital intensity
 - But some are more immune than others
 1. Scale economies – company size?
 2. Scope - degree of internationalization?
 3. Product portfolio?
 4. Persistence of profits?

Economic performance

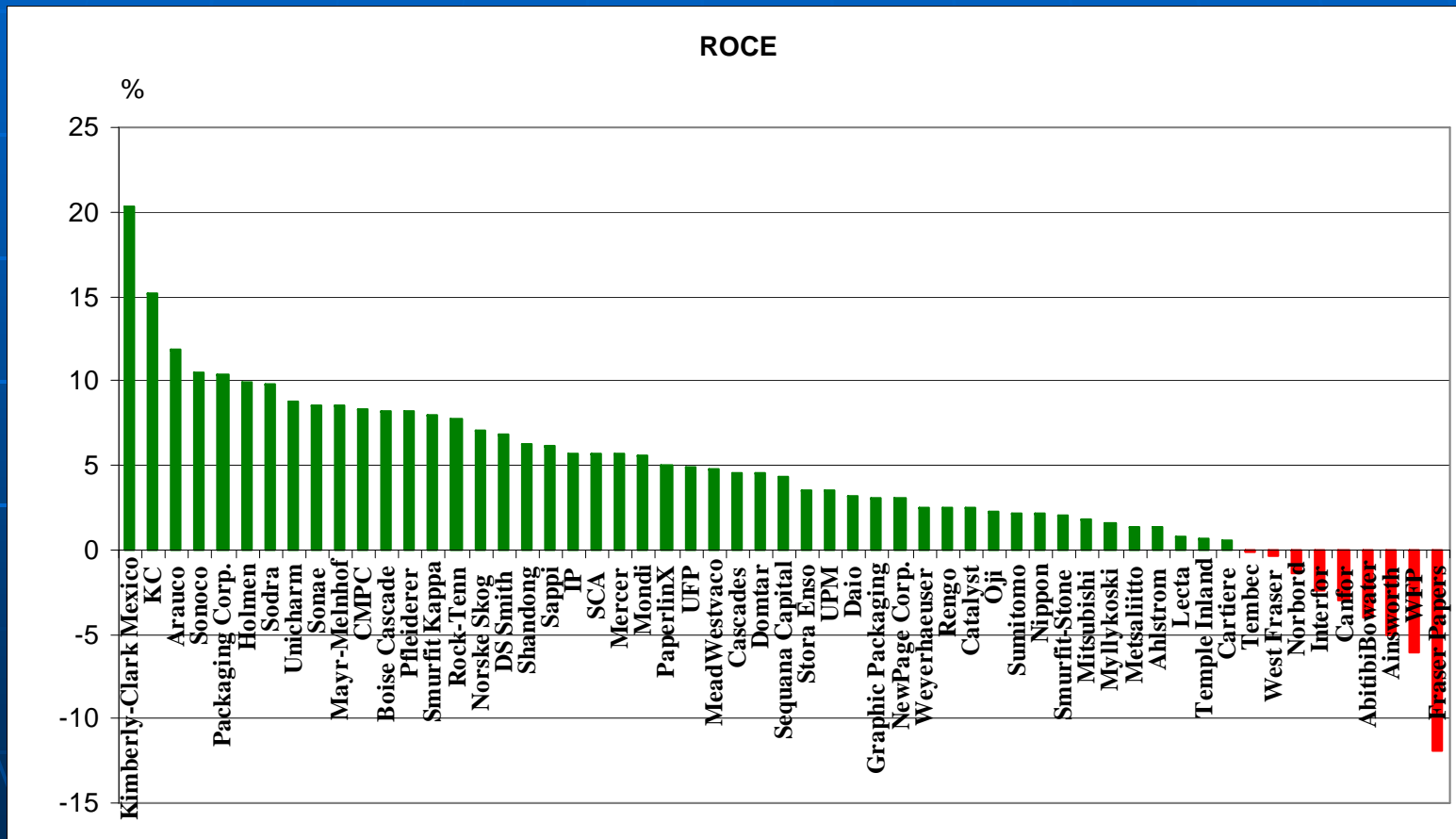
■ PwC Top 100 Companies

US \$ billions

	2003	2004	2005	2006	2007
Turnover	\$304.3	\$328.2	\$337.0	\$354.6	\$343.3
Operating profit	\$19.5	\$24.5	\$21.9	\$23.7	\$24.7
Net Income	\$7.8	\$13.7	\$9.3	\$14.3	\$13.5
ROCE	4.2%	5.3%	4.9%	5.1%	4.8%
Capital expenditures	\$16.0	\$19.3	\$20.6	\$21.4	\$25.1

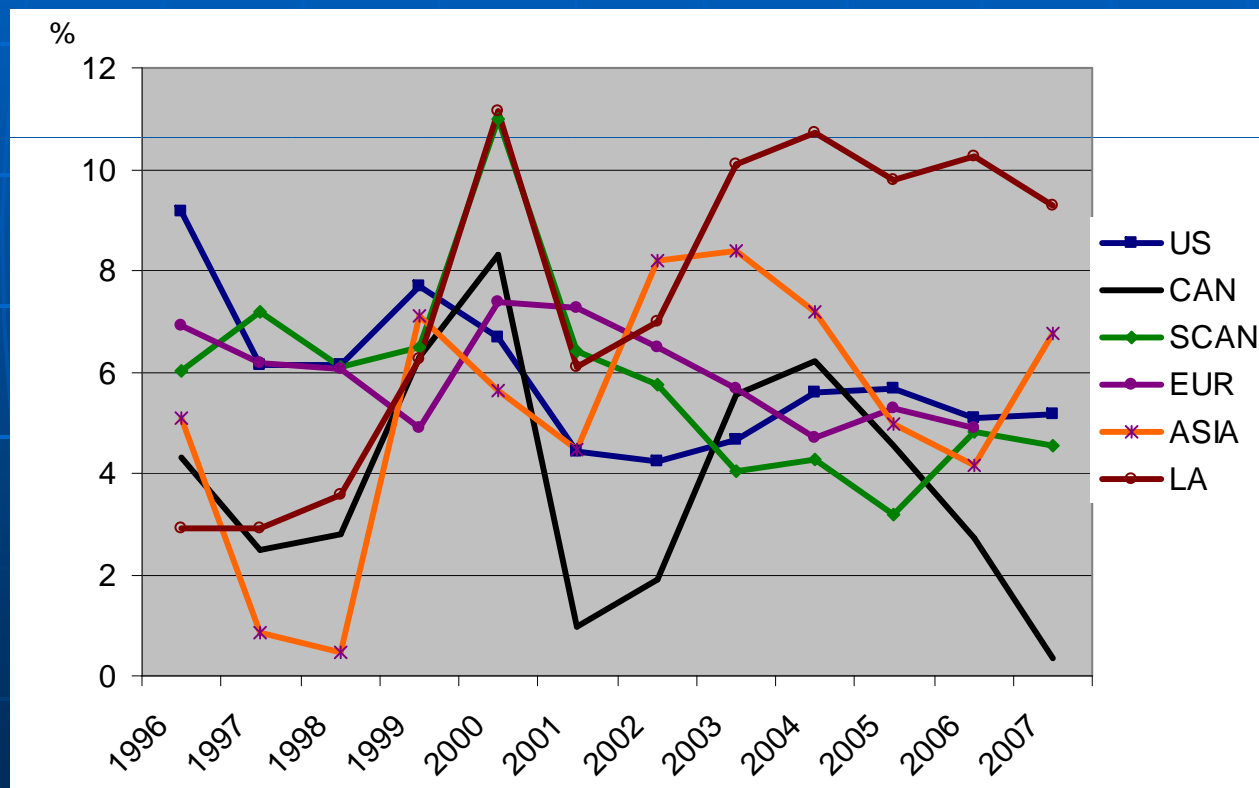
Economic performance

- Profitability of the top 50 companies in 2007



Economic performance

- Geographic ROCE % for top 50 companies 1996-2007



Economic performance - Theory

- In the Schumpeterian world the firms compete through innovations. The innovator firm earns initially monopoly profits but the profits attract other firms that imitate the innovator. Over time the entry of the imitators to market erode the high profits enjoyed by the innovator and all firms' profits converge towards competitive industry profits.
- A relative deviation from the industry-wide profitability in year t

$$\pi_{it} = \frac{\Pi_{it} - \overline{\Pi}_t}{\overline{\Pi}_t}$$

Economic performance - Theory

- The profitability is measured by

$$\pi_{it} = \pi_{ic} + s_{it},$$

where the π_{ic} is the competitive industry return and s_{it} is the short-run rent

- The short-run rent tends to erode over time

$$s_{it} = \lambda_i s_{it-1} + \varepsilon_{it},$$

Economic performance - Theory

- Model to be tested

$$\pi_{it} = (1 - \lambda_i)\pi_{ic} + \lambda_i\pi_{it-1} + \varepsilon_{it}$$

- Hypotheses:

- 1. No significant relationship between scale of operations and profitability exists in the group of largest forest industry companies.*
- 2. There is no persistence of profits at the regional or global level in the long run.*

Economic performance - Methods

- Test a hypothesis whether the profits behave as a non-stationary random walk
- Im, Pesaran and Shin (IPS) test used to analyze pooled cross-section time series
- The IPS test applies a single equation Augmented Dickey-Fuller (ADF) test to individual series in the panel and constructs a group-mean t-test based on the individual ADF test statistics

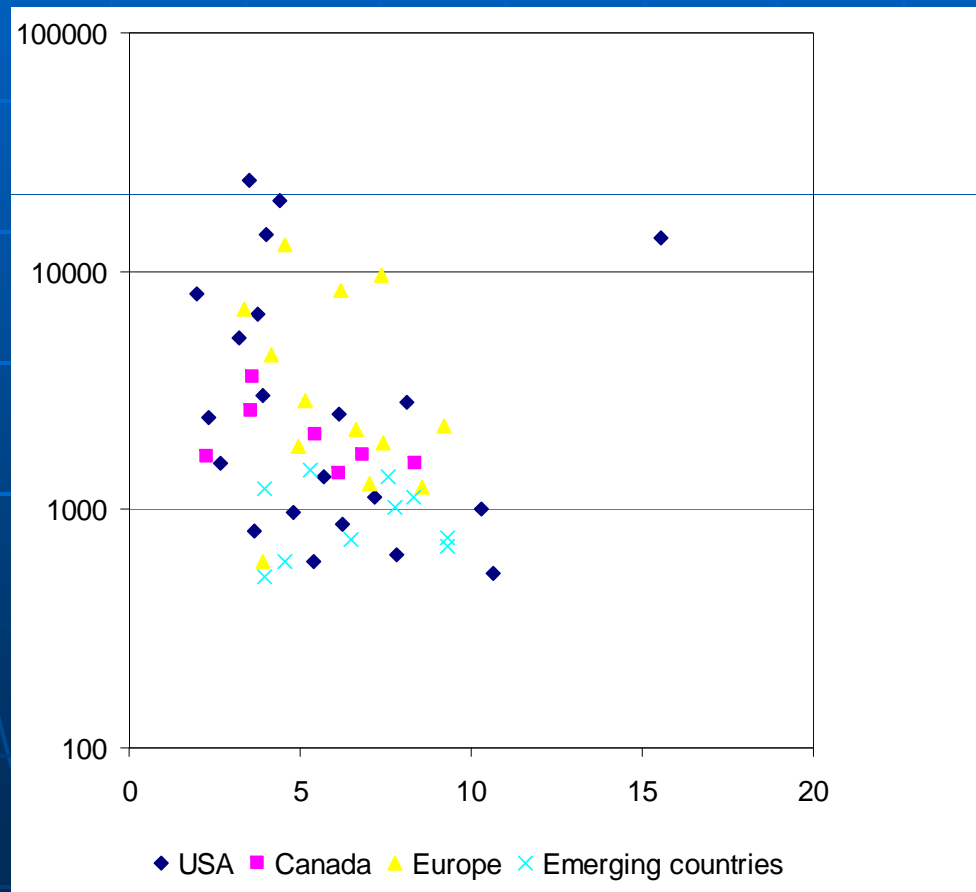
Economic performance - Data

- 49 major forest industry companies: 19 of companies are from the United States, 7 from Canada, 13 from Europe and 10 from the emerging countries
- 1996-2005
- Return on capital employed, sales
- The data have been collected from Price Waterhouse Coopers (PWC) annual Global Forest and Paper Industry Survey reports, which incorporate the 100 largest firms in the industry

Economic performance - Size

- 10-year average ROCE and company turnover of top companies by four regions 1996-2005

Turnover
(in logs)



ROCE, %

Economic performance - Size

Correlations between ROCE and sales for all companies and geographically grouped companies

	1996-2005	1996-2000	2001-2005
All companies	-0.031	0.041	-0.084
US	-0.016	-0.081	0.079
Canadian	-0.145	0.200	-0.311
European	-0.136	0.027	-0.246
Emerging country	0.138	0.209	-0.043

Economic performance – Size

- No statistical evidence on the significant relationship between sales and profitability despite expected economies of scale
- The “right” size seem to be more profitable on average
- Emerging country producers, for example, have been performing on par or better than the largest global firms

Profit persistence

IPS panel unit root test t-bar values for profit persistence

	Number of observations	IPS test-statistic
All companies	490	-1.736*
US	190	-2.045**
Canadian	70	-1.919
European	130	-1.925*
Emerging country	100	-2.124**

04/12/2008 ** - significant at 5 % level, * - significant at 10 % level

Profit persistence

- For the producers in the emerging countries and in the US the unit root hypothesis for profits is rejected at 5 percent level, and for all companies and European companies at 10 percent level
- The hypothesis cannot be rejected for Canadian firms implying that the profits persisted among these firms during the study period
- Despite the difference in profit persistency, the average US and Canadian ROCE figures were close to each other until 2005

Economic performance – Profit persistence in TOP 50 companies

- In general, the most successful firms have been able to protect their high profit rates over time whereas the least successful firms have made little progress to improve their situation, and equalization of profit rates has not occurred across firms
- Globally, though, no firm specific profits among the largest forest industry companies globally. However, the location where the company is headquartered, and in many cases have a significant percentage of its production capacity, seems to have some impact on profit persistence.

Economic performance – Scope?

- Global companies don't necessarily perform better; risks haven't balanced out
- The synergies of global M&As during 1990s and 2000s have been overestimated?
- The strategic fit between merging companies might have been lower and the challenges of successfully integrating distinct company cultures greater than originally anticipated

Economic performance – product portfolio?

- Wider portfolio doesn't necessarily increase profitability
- Niche producers perform often above average
- The position in a value chain has an impact on profitability; can the company add significant financial value in the chain?

Economic performance – Corporate sustainability?

- Macroeconomic and hosting conditions will continue to play a significant role
- But economic performance is only a part of the big picture: increasing requirements to maximize shareholder value while improving environmental performance and increasing social contributions to local communities - does CSR play any role regarding sustainable competitive advantage in the forest industry?