

Is sustained superior economic performance the same as competitive advantage?

Roberto Garcia-Castro, PhD.

IESE Business School

LMU

Munich

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Universidad de Navarra

Structure

1. Competitive heterogeneity & SCA
2. Presentation of an alternative way of looking at SCA: firm autonomy
3. An application: US Airlines industry 1982-2002
4. Conclusions, limitations and future developments

Competitive heterogeneity & SCA

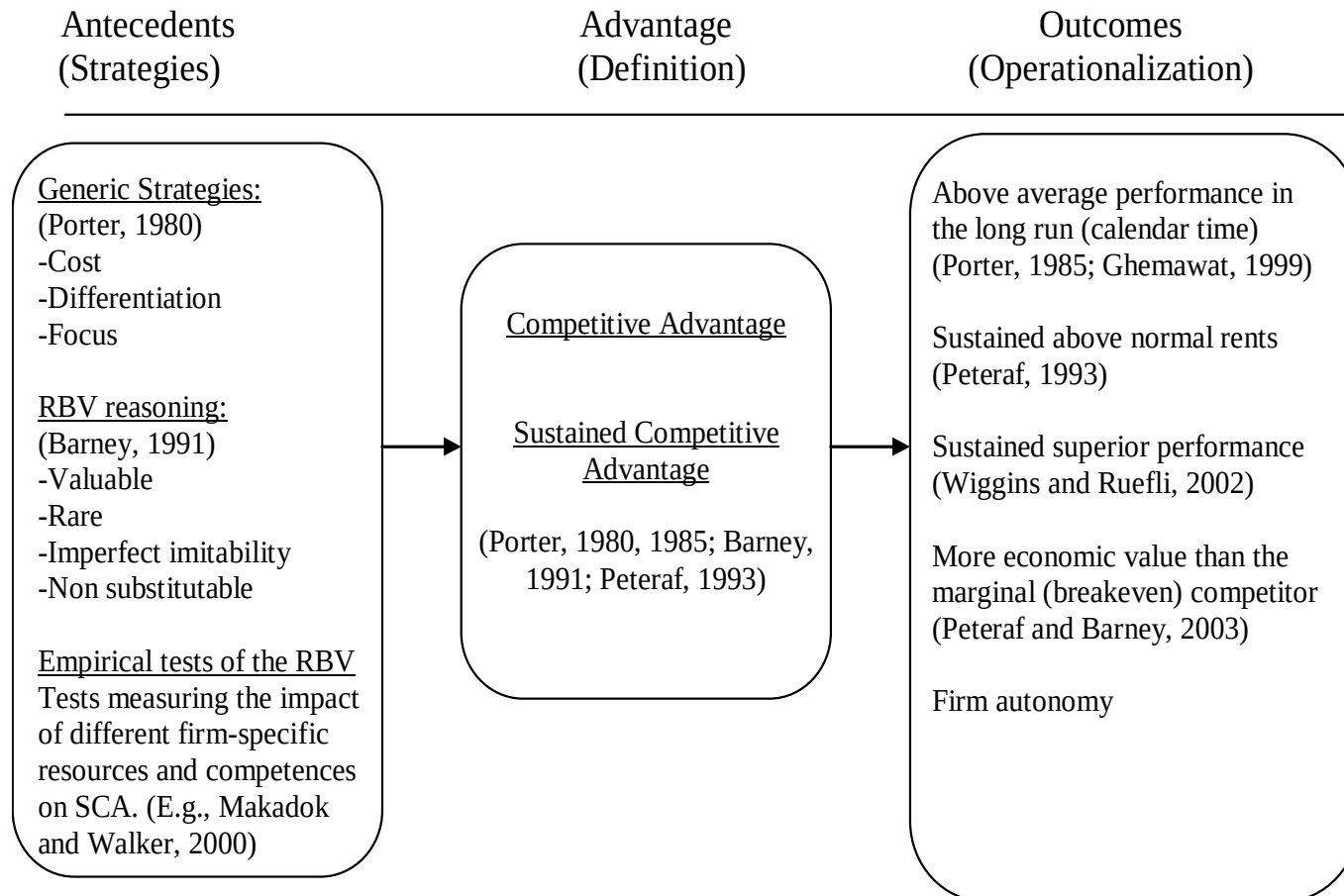
- **Analytical models:**

- Elaborate formal models that explain how heterogeneity can emerge and remain.
- Eaton and Lipsey (1978), Lippman and Rumelt (1992) Makadok and Barney (Makadok, 2001; Makadok and Barney, 2002); Zott (2003).

- **Empirical studies:**

- Analyze variance in performance in order to explain firm heterogeneity
- Schmalensee, 1985; Rumelt, 1991; Brush and Bromiley, 1997; McGahan and Porter, 1997, 1999; James, 1998; Brush, Bromliley, and Hendrickx, 1999; Bowman and Helfat, 2001; Wiggins & Ruefli, 2002).

Antecedents and outcomes of SCA



Competitive heterogeneity & SCA

1. Wiggins and Ruefli (2002) find that **no firm** in the airlines industry, telephone and telegraph equipment, operative builders, television broadcasting and advertising agencies achieved even 10 years of persistent superior economic performance.
2. Academic as well as non academic have extensively celebrated Southwest Airlines model, with a record of more than thirty years of successful operations and a record of consistent profitability (Pfeffer, 1998; Gittell, 2003)

?

Competitive heterogeneity & SCA

- One possible explanation could be that the dependent variable is mistaken:
 - “Statistically significant above-average performance relative to a set of comparable firms that persists over a long-term period of calendar time” (Wiggings and Ruefli 2002)
➔ Too demanding definition.
 - SCA is “at best... loosely coupled to firm performance” (Coff, 2005).
➔ Current measures of firm performance only reflect value created for shareholders (Lieberman and Balasubramanian, 2007).

Competitive heterogeneity & SCA

1. We propose an alternative simple and powerful measure based on *the degree of independency from the business/industry cycle a given firm has*.
2. Emphasizes *independence* from market fluctuations and its internal strength or resilience to outperform rivals even in situations of crisis or economic recessions.

Firm autonomy = Exposure and Intensity

Figure 1. Persistent superior performance along business cycles

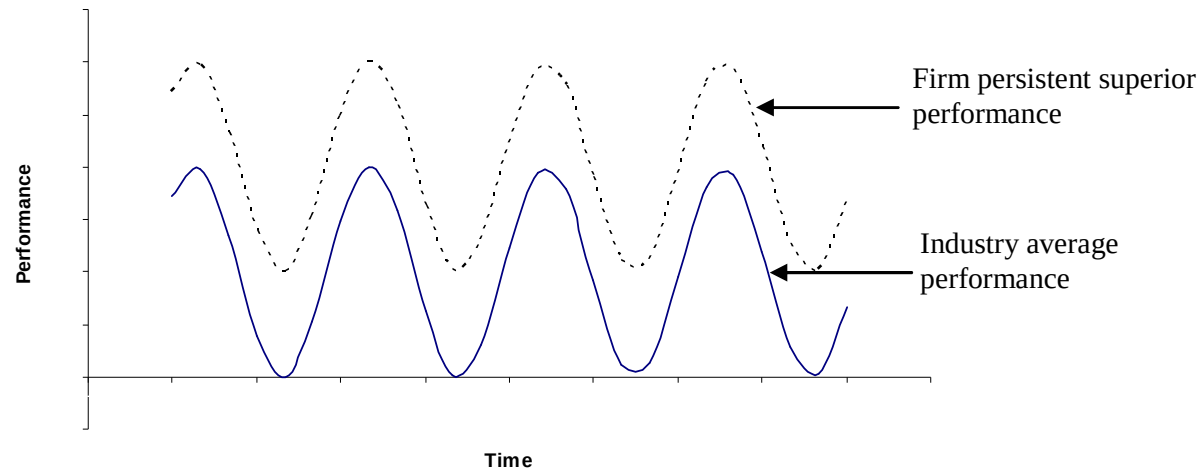
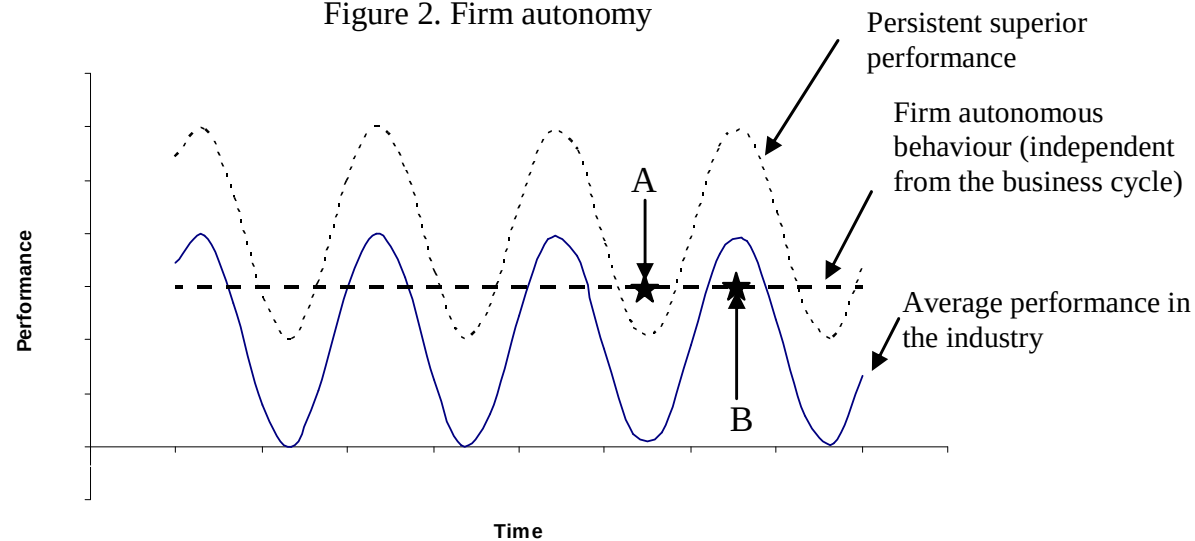


Figure 2. Firm autonomy



Firm autonomy = Exposure and Intensity

The specified *exposure-intensity* equation is:

$$R_{it} = \alpha_i + \beta_i X_{jt} + e$$

R_{it}: ROA for the selected firm *i* in time *t*;

X_{jt}: activity indicator of cyclicalality for *industry j* in time *t*;

e: is the regression error.

R-squared of the model: *exposure* to the business cycle.

β : *intensity of the exposure* of the business cycle for the particular firm *i*.

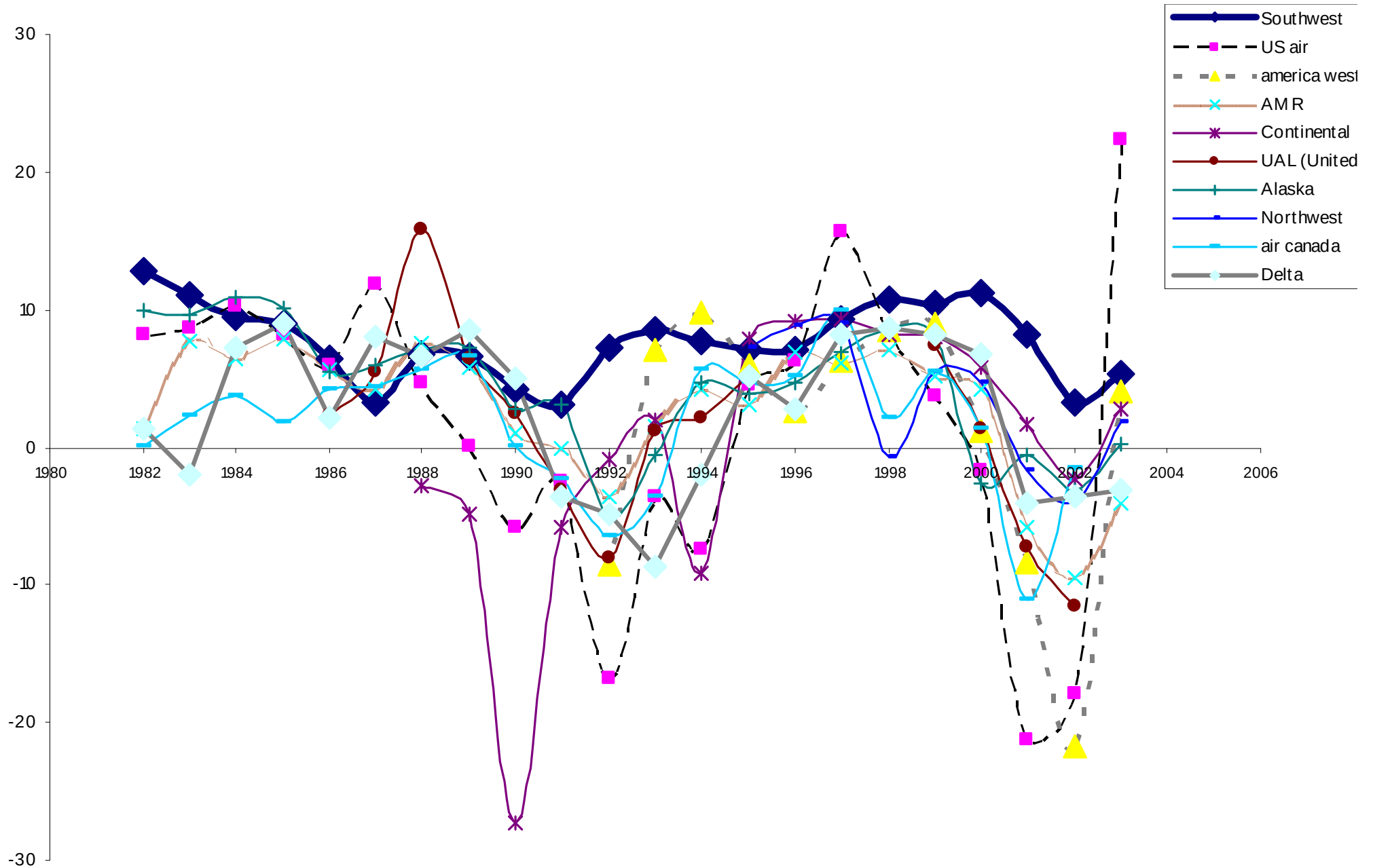
KEY: industry activity indicator (number of passengers carried –RPM– airlines industry, number of bottles of beer consumed in the case of the brewing industry (Ariño & Ariño, 2006)).

AN ILLUSTRATION: US AIRLINES INDUSTRY (1982-2002)

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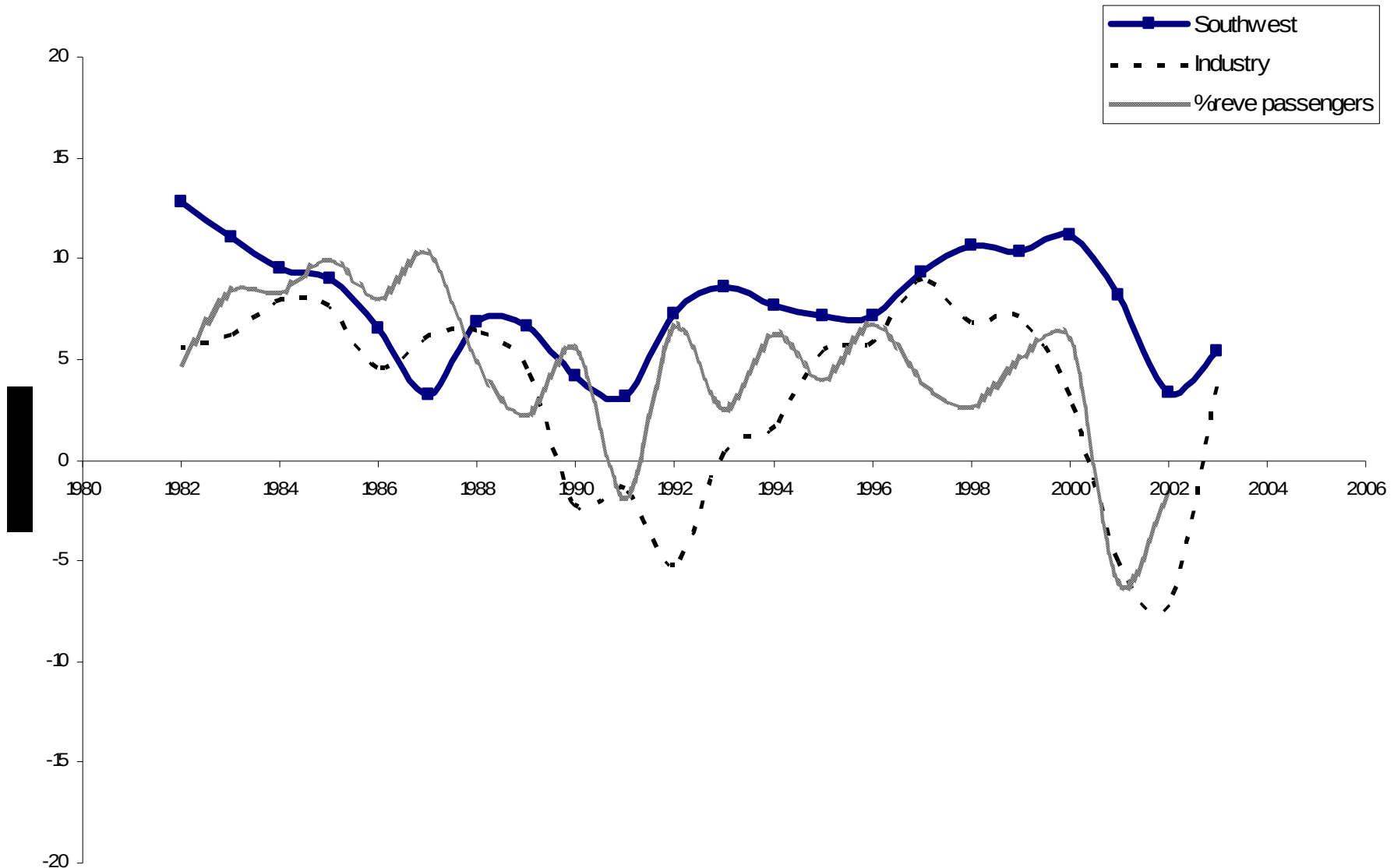
- We choose the US airline industry (1982-2002) to verify if our model explains the Southwest airlines irregularity
- 10 airlines: Southwest Airlines, US Airways, America West Airlines, American Airlines (AMR), Continental Airlines, United Airlines (UAL), Alaska Airlines, Air Canada, Northwest Airlines and Delta Airlines (80% of US market share by 2005)
- Our measure of industry activity is revenue passenger per mile RPM
[1] A paying passenger flying one mile creates 1 RPM. 100 passengers flying 500 miles generate 50,000 RPMs. For example, in a typical day in 2001, American produced 290 million RPMs.

RESULTS: US Airline industry 1982-2002



RESULTS: US Airline industry 1982-2002

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RESULTS: US Airline industry 1982-2002

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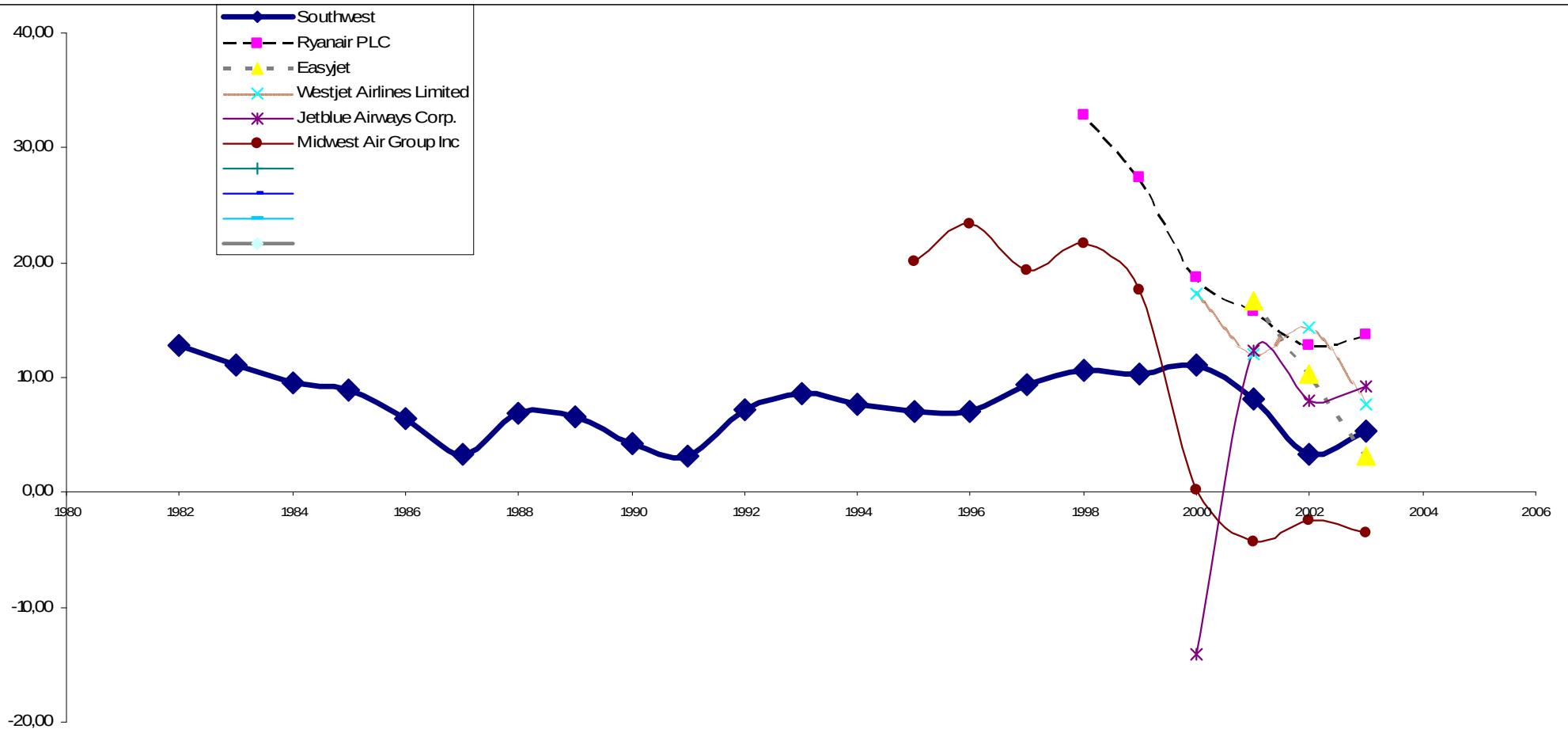
<i>Airline</i>	Industry performance indicator (ROA)				Industry activity indicator (RPM, % growth)			
	<i>Exposure (E)</i>	<i>F-test</i>	<i>Intensity (I)</i>	<i>t-test</i>	<i>Exposure (E)</i>	<i>F-test</i>	<i>Intensity (I)</i>	<i>t-test</i>
Southwest	0,23	5,883	0,28	2,426	0,04	0,797	0,14	0,893
p-value		0,025		0,025		0,383		0,383
US Air	0,75	59,784	2,01	7,732	0,38	11,427	1,54	3,380
p-value		0,000		0,000		0,003		0,003
America West	0,71	24,683	1,49	4,968	0,30	3,773	1,36	1,943
p-value		0,001		0,001		0,084		0,084
AMR	0,74	56,343	0,88	7,506	0,44	14,939	0,77	3,865
p-value		0,000		0,000		0,001		0,001
Continental	0,25	4,544	0,93	2,132	0,00	0,000	0,01	0,017
p-value		0,051		0,051		0,987		0,987
UAL (United)	0,81	49,817	1,33	7,058	0,26	4,121	0,83	2,030
p-value		0,000		0,000		0,065		0,065
Alaska	0,66	39,075	0,81	6,251	0,19	4,425	0,50	2,104
p-value		0,000		0,000		0,049		0,049
Northwest	0,61	10,951	0,66	3,309	0,61	9,427	0,90	3,070
p-value		0,013		0,013		0,022		0,022
Air Canada	0,61	29,758	0,78	5,455	0,29	7,559	0,64	2,749
p-value		0,000		0,000		0,013		0,013
Delta	0,49	19,502	0,84	4,416	0,19	4,465	0,60	2,113
p-value		0,000		0,000		0,048		0,048

RESULTS: US Airline industry 1982-2002

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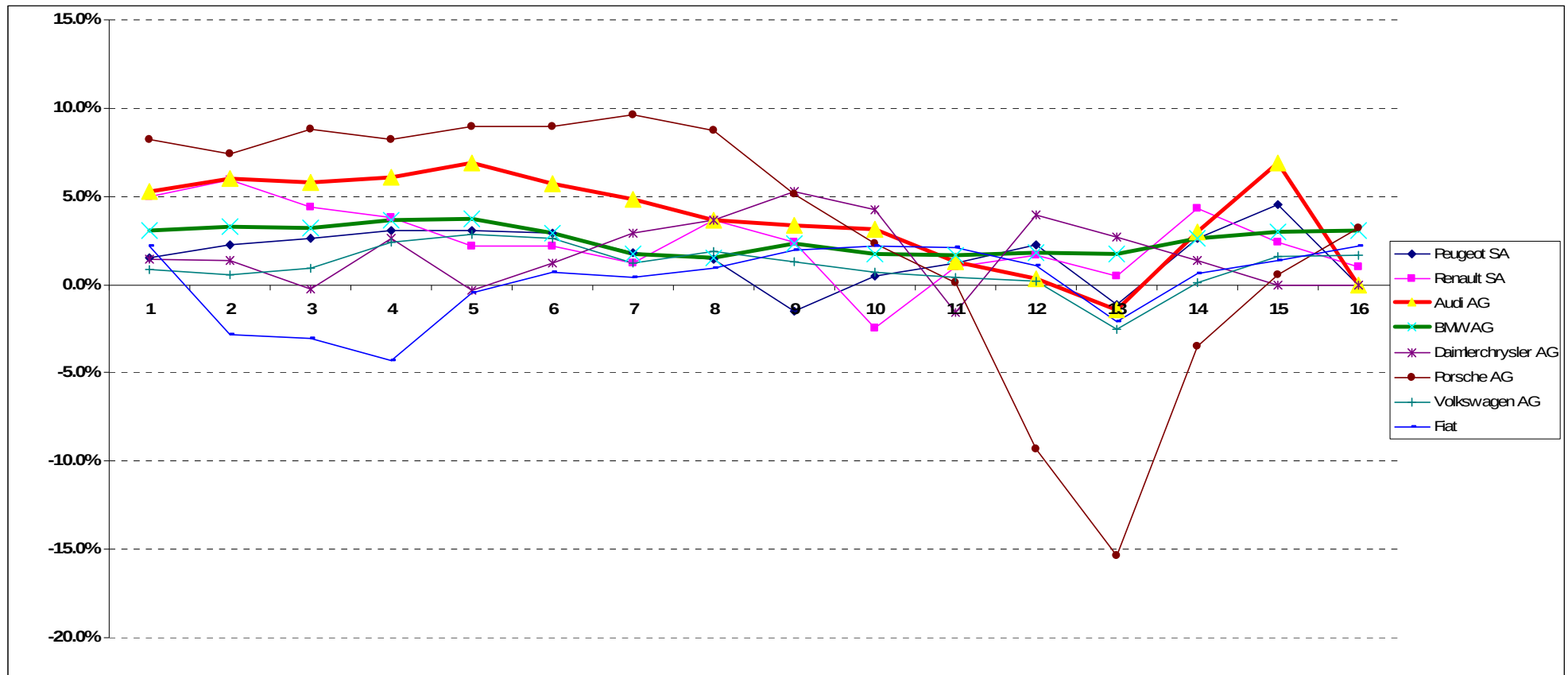
Company	Southwest Airlines Company	Air Canada Inc	Alaska Air Group Inc	America West Holdings Corp.	AMR (American Airlines)	Continental Airlines Inc	Delta Air Lines Inc	Northwest Airlines Corp.	UNITED AIR LINES, INC.	US Airways Group Inc
Current Sale USD	5.521,77	6.250,61	2.224,10	2.047,12	17.299,00	8.402,00	13.305,00	9.489,00	13.916,00	6.977,00
Current EBITDA USD	884,60	122,17	136,50	-66,42	-1.895,00	149,00	-175,00	-279,00	-1.794,00	-1.305,00
Current EBIT USD	481,99	-113,31	-58,20	-142,32	-3.261,00	-295,00	-1.356,00	-830,00	-2.752,00	-1.600,00
Current Net Income USD	240,97	-858,78	-118,60	-387,91	-3.511,00	-441,00	-1.272,00	-773,00	-3.327,00	-1.646,00
Current Market Cap USD	11.485,63	133,44	719,77	402,51	2.423,68	968,41	1.208,69	960,66	#N/A	238,16
Current Total Assets USD	8.953,75	4.715,00	2.880,70	1.438,95	30.267,00	10.740,00	24.720,00	13.289,00	24.744,00	6.543,00
Current Total Liabilities USD	4.532,13	9.725,00	2.225,00	1.370,78	29.310,00	9.720,00	23.563,00	14.772,00	25.583,00	11.464,00
Current Common Equity USD	4.421,62	-1.550,88	655,70	68,18	957,00	760,00	893,00	-2.262,00	-841,00	-4.921,00
Net Cash & Equiv CF Stmt USD	-464,51	-509,00	-221,80	178,89	2,00	61,00	-241,00	-415,00	-786,00	-8,00
Free Cash Flow Per Share USD	0,25	-1,25	-1,83	-2,27	-19,08	-7,46	-10,94	-18,19	#N/A	-14,84
1982-2003 ROA Average	7,7%	1,8%	4,4%	1,3%	2,9%	0,1%	2,5%	3,4%	1,4%	1,9%
1982-2003 ROA Std. deviation	2,7%	4,8%	4,6%	9,5%	4,8%	9,3%	5,6%	4,7%	7,1%	10,9%
Number of years	22	21	22	12	22	16	22	9	14	22
Market share US market (RPM) -- 2005	10,8%	-	2,5%	4,0%	15,8%	7,2%	12,9%	7,3%	11,8%	5,1%

Low Cost Strategy Airlines

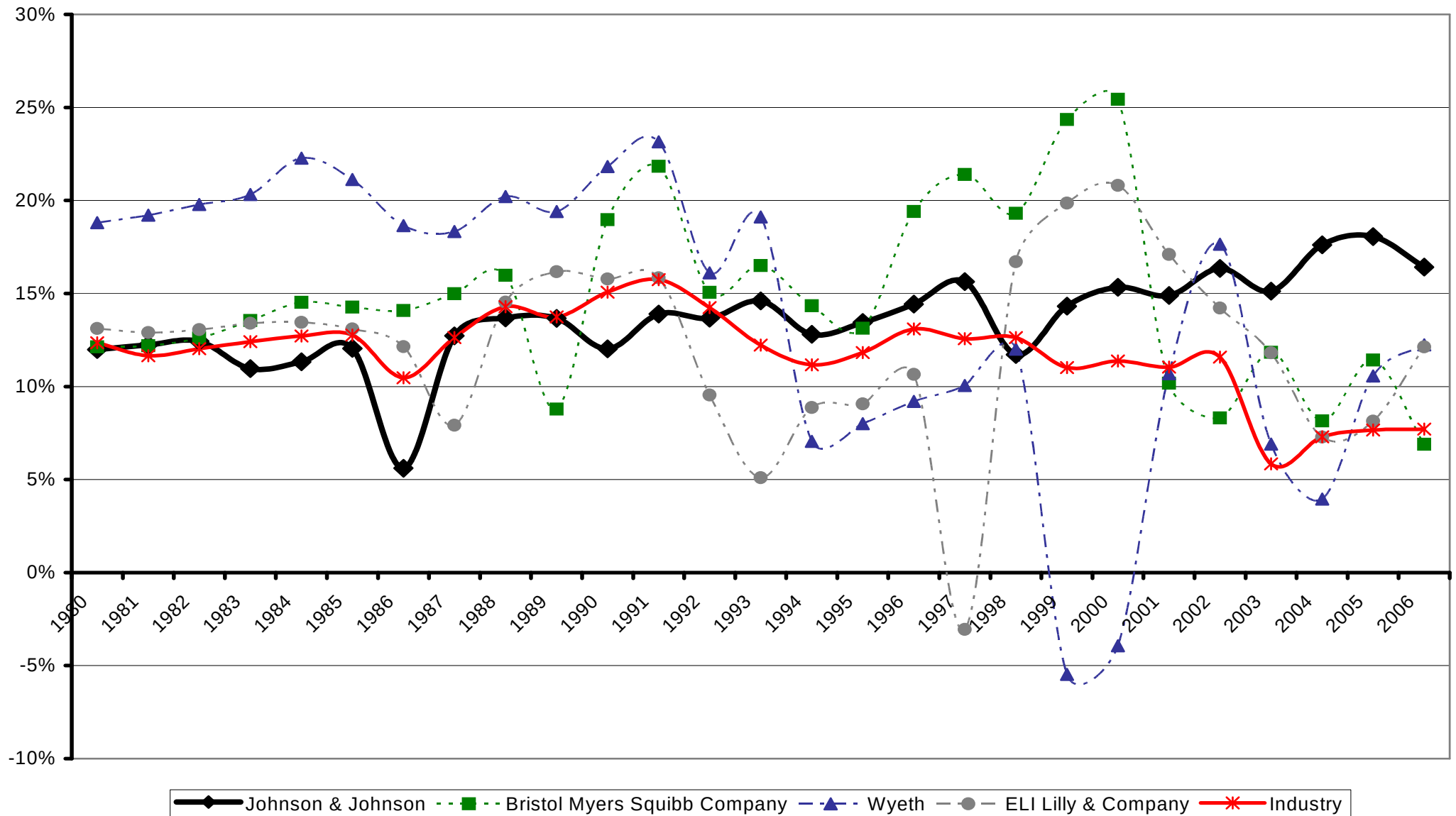


Other examples...EU Auto industry (1990-2005)

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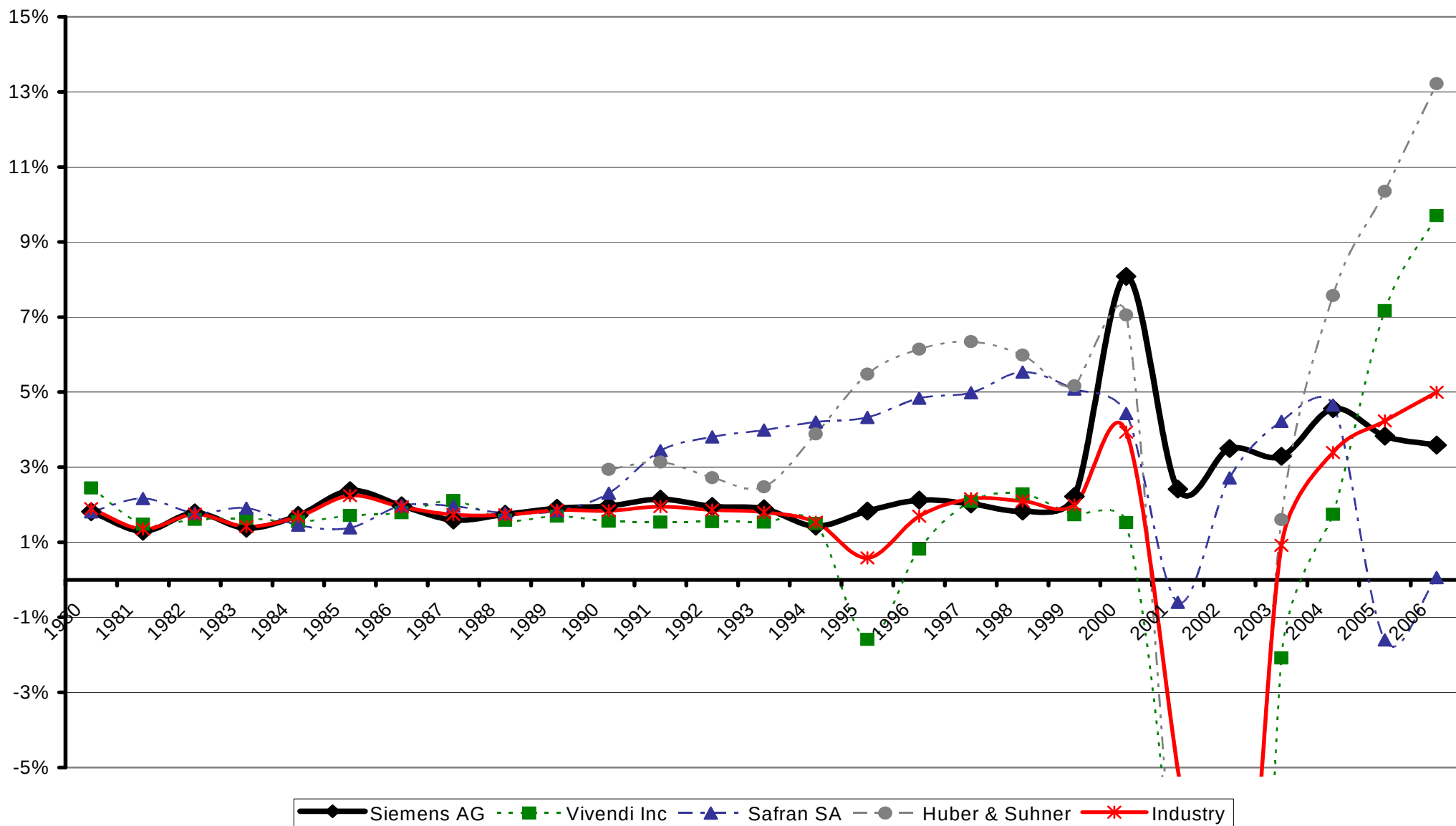
Pharmaceuticals (ROA)...



Companies data (1980-2006)

Company	R ²	ROA	std Dev	n
Pfizer Inc	0.044	10.94%	3.98%	27
Johnson & Johnson	0.151	13.59%	2.46%	27
Abbott Laboratories Inc	0.341	14.15%	3.77%	27
Merck & Company Inc	0.270	15.30%	3.91%	27
Bristol Myers Squibb Company	0.207	14.80%	4.85%	27
Wyeth	0.265	13.97%	7.71%	27
ELI Lilly & Company	0.029	12.21%	4.83%	27
Schering-Plough Corp.	0.304	12.78%	7.85%	27
Genentech Inc	0.000	-0.48%	19.54%	27
Forest Laboratories	0.394	11.92%	5.47%	27
Genzyme Corp.	0.185	-1.54%	6.95%	18
Hospira Inc	0.111	11.28%	2.16%	6

Siemens (ROA)



Companies data (1990-2006)

Company	R ²	ROA	std Dev	n
Siemens AG	0.002	2.45%	1.38%	27
Vivendi Inc	0.967	0.19%	7.45%	27
Safran SA	0.003	2.76%	1.82%	27
Huber & Suhner	0.893	3.52%	6.68%	17
Scanfil PLC	0.108	10.88%	4.58%	9
Eltek ASA	0.295	1.53%	21.94%	11
Alcatel Teletas AS	0.018	6.06%	10.77%	19
Wavecom	0.153	-11.95%	24.24%	10
Mecelec	0.087	-0.67%	6.22%	20
Tiptel AG	0.006	-4.01%	34.83%	14
Sedlbauer AG	0.295	-2.82%	14.10%	19
Pandatel AG	0.053	-10.28%	36.33%	9
Telspec PLC	0.117	-5.58%	16.57%	14
Net Insight AB	0.144	-94.39%	68.21%	9
Olitec	0.102	-2.73%	14.86%	11
Network Technology PLC	0.554	-13.95%	29.54%	11
Newport Networks PLC	0.335	-458.44%	579.11%	6
ZTC Telecommunications PLC	0.519	10.43%	17.35%	3

Antecedents of firms autonomy

Source of autonomy	Main features	Authors	Academic discipline
Environmental buffering	-Technological seal off -Organizational slack -Loosely couple structures -Resource based and institutional buffering	-Thompson (1967) -Cyert & March (1963) -Weick (1976); Meyer and Rowan (1978) -Aldrich (1979); Scott (1987); Pfeffer & Salancik (1978)	Organization theory
Commitments	-Commitment and distinctive competence -Committed competition and mobility barriers -Precommitments of resources -Persistence of strategies over time; path dependence -Governance inseparability	-Selznick (1957) -Caves and Porter (1977) -Caves (1984) -Ghemawat (1991) -Argyres & Liebeskind (2000) -Rumelt (1984,1987)	Strategic management
Isolating mechanisms	-Sunk costs, switching costs, idiosyncratic investments, causal ambiguity...	-Rumelt (1984,1987)	
Human capital	-responsiveness to environmental changes	-Wright, McMahan & McWilliams (1994)	Human resources management (HRM)

Limitations

1. Just 10 firms; airlines industry; US -- external validity
2. The model detects firm autonomy but is silent about the possible causal mechanisms that may lead to such autonomy
3. Different airlines follow very different strategies, operate different segments, etc.
4. Future research on firm autonomy must explain causes

Conclusions

1. SCA and SEP are, at best, loosely coupled
2. The way we operationalize SCA influences the empirical results obtained
3. Firm autonomy can be an alternative and complementary way of looking to SCA
4. We operationalize firm autonomy using the exposure-intensity equation

