

*The Proliferation of Coopetition: an Event History
Analysis of Antecedents at Firm-, Inter-Firm-, and
Industry-Level*

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Strategic Management Society - 30th Annual Conference
“Strategic Management at the Crossroads”
Rome – Italy, Sept. 13th - 15th 2010

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Paper objective

The paper focuses on antecedents (conditions) that affect the occurrence of coopetitive agreements (CA).

Explanatory variables taken into account regard the firm-, inter-firm-, and industry-level.

Literature review

<i>Typology of relationship</i>	<i>Objective</i>		
	<i>Nature/definition</i>	<i>Antecedents</i>	<i>Outcomes</i>
<i>Vertical relationship</i>	Lado, Boyd and Hanlon, 1997; Bengtsson and Kock, 2000; Luo, 2007; Chen, 2008; Galvagno and Garraffo, 2009.	Gnyawali and Park 2008	Bengtsson and Kock, 2000; Afuah, 2000; Baldwin, Bengtsson, 2004; Oliver, 2004; Quintana-García, Benavides-Velasco, 2004; Gnyawali, He and Madhavan, 2006; Gnyawali and Madhavan, 2001; Gnyawali, He and Madhavan, 2006; Luo, 2007; Luo, Rindfleisch and Tse, 2007; Ritala, Hallikas and Sissonen, 2008
<i>Horizontal relationship</i>			Hamel, Doz and Prahalad, 1989; Quintana-García, Benavides-Velasco, 2004, Hokura 2007, Bonel and Rocco, 2007

Research question

Which elements affect the occurrence and the proliferation of CA?

....that is to say:

What are the antecedents of coopetition?

Theoretical perspectives

We adopted the following theoretical perspectives to explain the logic of CAs, in the form of joint ventures between competitors:

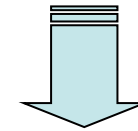
- TCE paradigm (Williamson 1975, Stuckey 1983, Teece, 1986, Hennart 1988)
- Strategic approach (inter-firm rivalry perspective) (Kogut 1988, Chen, 1996)

.....according to Kogut (1988), they are complementary perspectives.....

Theoretical perspectives for coopetitive joint-ventures



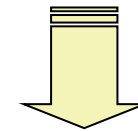
TCE



Strategic approach



Governance
structure between
market/hierarchies



Context of
competition
with rivals

Hypothesis 1 (firm-level)

At the firm-level, we argue that the competitor's experience in collaborative agreements is related to the chance to enter a cooperative agreement

- A firm with previous or ongoing collaborations has a track record to be considered trustworthy, all else being equal
- Because it is almost impossible, and certainly un-efficient, to foresee every circumstance affecting an agreement and contractually regulate it (Williamson, 1985), a trustworthy competitor is a desirable partner even for another competitor (Kogut, 1991).

H1: the greater a competitor's experience in collaborative agreements, the higher the chance to enter a cooperative agreement

Hypothesis 2 (firm-level)

Moreover, we argue that the competitors' country of origin affect the proliferation of CAs.

➤ A culture effect (Contractor & Lorange, 1988; Park & Ungson, 1997) makes inbound CAs more suitable than outbound CAs.

➤ Because of the similarity of culture, two competitors belonging the same country see each other a desirable partner than a foreign competitor.

H2: cooperative agreements are more likely to occur when the partners are from culturally similar countries

Hypothesis 3 (inter-firm-level)

At the inter-firm-level, the number of direct competitors involved in previous cooperative partnerships is related to the chance of a firm to enter a CA

➤ The number of competitors that will execute a course of action is positively affected by the number of firms that already took it (Knickerbocker, 1974; Chen, Smith & Grimm, 1992; Chen, 1996)

H3: the greater the number of direct competitors already involved in prior cooperative agreements, the higher the chance of a firm to enter a cooperative agreement

Hypothesis 4 (industry-level)

At the industry-level, we first argue that the pace of CAs in the industry affects the chance of a firm to enter a CA.

➤ According to the literature that highlights the role of time in competition (D'Aveni, 1994; Chung, 1999; Wiggins & Ruefli, 2005), the timing of a firm's action is affected by the pace of competitors' course of actions.

H4: the higher the pace of cooperative agreements in the industry, the higher the chance of a firm to enter a cooperative agreement

Hypothesis 5 (industry-level)

Moreover, the total number of CAs in the industry affect the chance of a firm to enter a CA.

➤ As we already said, a firm's course of action is affected by its competitors' course of action (Chen, 1996; Gimeno, 2004). As a result, a snow ball effect of CAs in the industry is predictable.

H5: the greater the number of cooperative agreements in the industry, the higher the chance of a firm to enter a cooperative agreements

Method

- We used continuous-time event history analysis to model
- Our analyses derived from Cox proportional hazards regression models (Cox, 1972) of the following form:

$$h_i(t) = [h_0(t)]e^{\left[\sum b_k X_{ik}(t)\right]}$$

where $h_0(t)$ is the baseline hazard function, and $X_{ik}(t)$ is the value of the k_i covariate (independent variable) for firm i at time t .

- The unit of analysis was the, and the failure event (in event history terminology) was the occurrence of a JV among competitor.

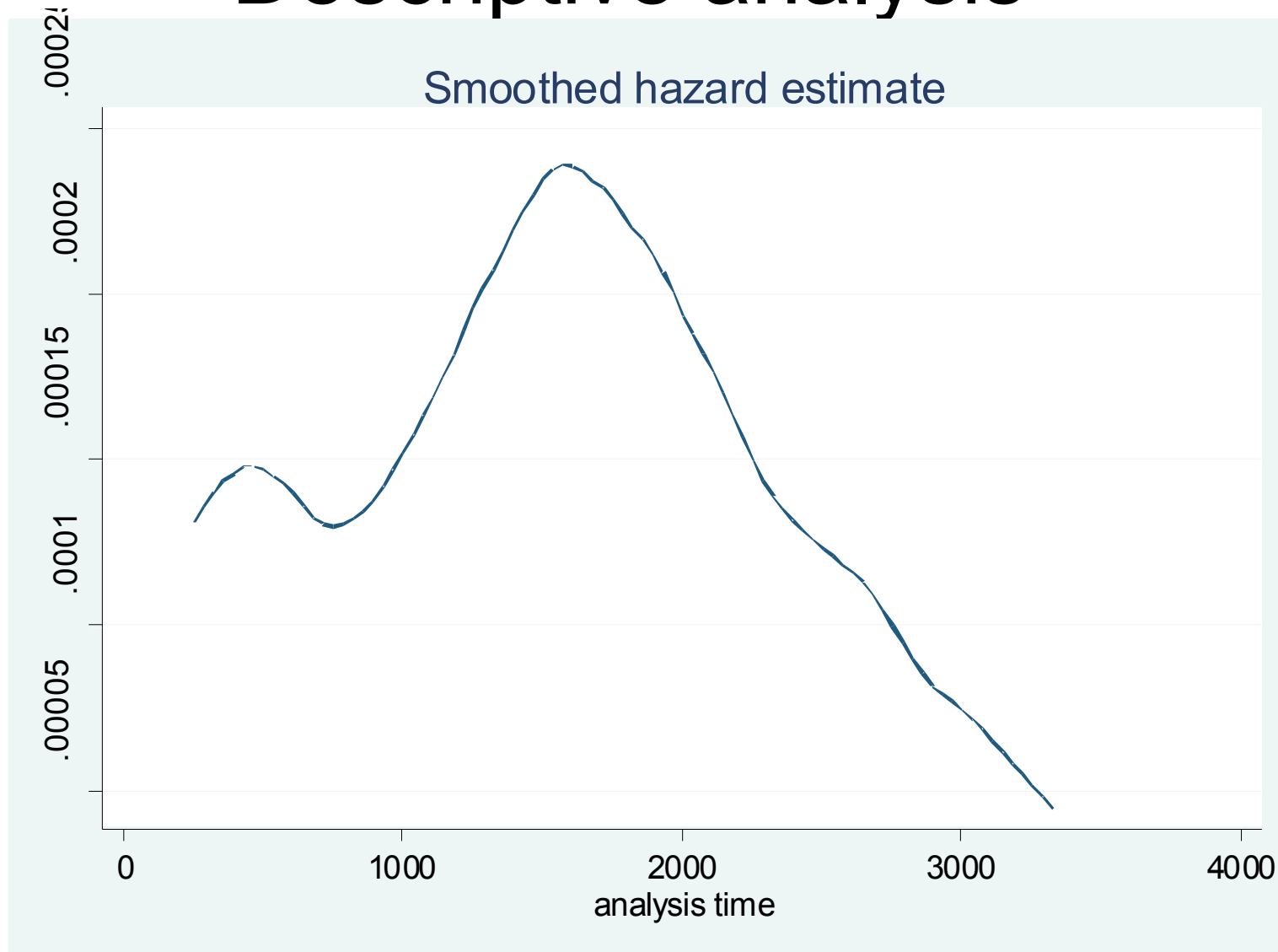
Sample

- From January 1st 2000 to December 31st 2009
- Zephyr database 2010 (Bureau van Dijk)
- Five industries:
 - Motor vehicles (US SIC 3711)
 - Computer programming services (US SIC 7371)
 - Air transportation, scheduled (US SIC 4512)
 - National commercial banks (US SIC 6021)
 - Telephone communications (US SIC 4813)
- 1644 firms belonging the five industries

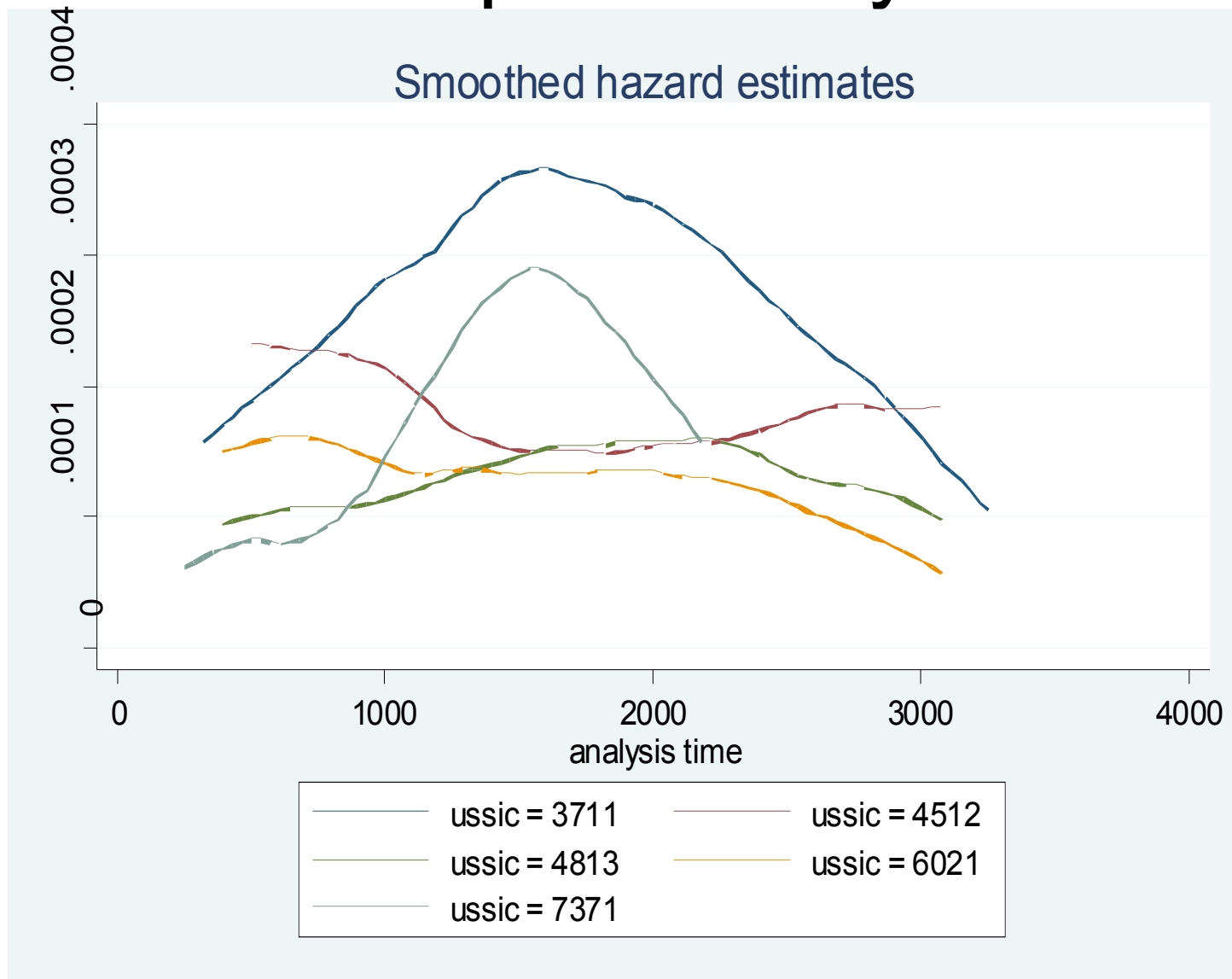
Descriptive analysis

No.	US SIC	US SIC Description	Cases		
			number	censored (Event = 0)	uncensored (Event = 1)
1	3711	Motor vehicles and passenger car bodies	255	93	163
2	7371	Computer programming services	610	360	250
3	4512	Air transportation, scheduled	150	58	92
4	6021	National commercial banks	331	196	135
5	4813	Telephone communications, except radiotelephone	298	182	116
		Total	1644	889	755

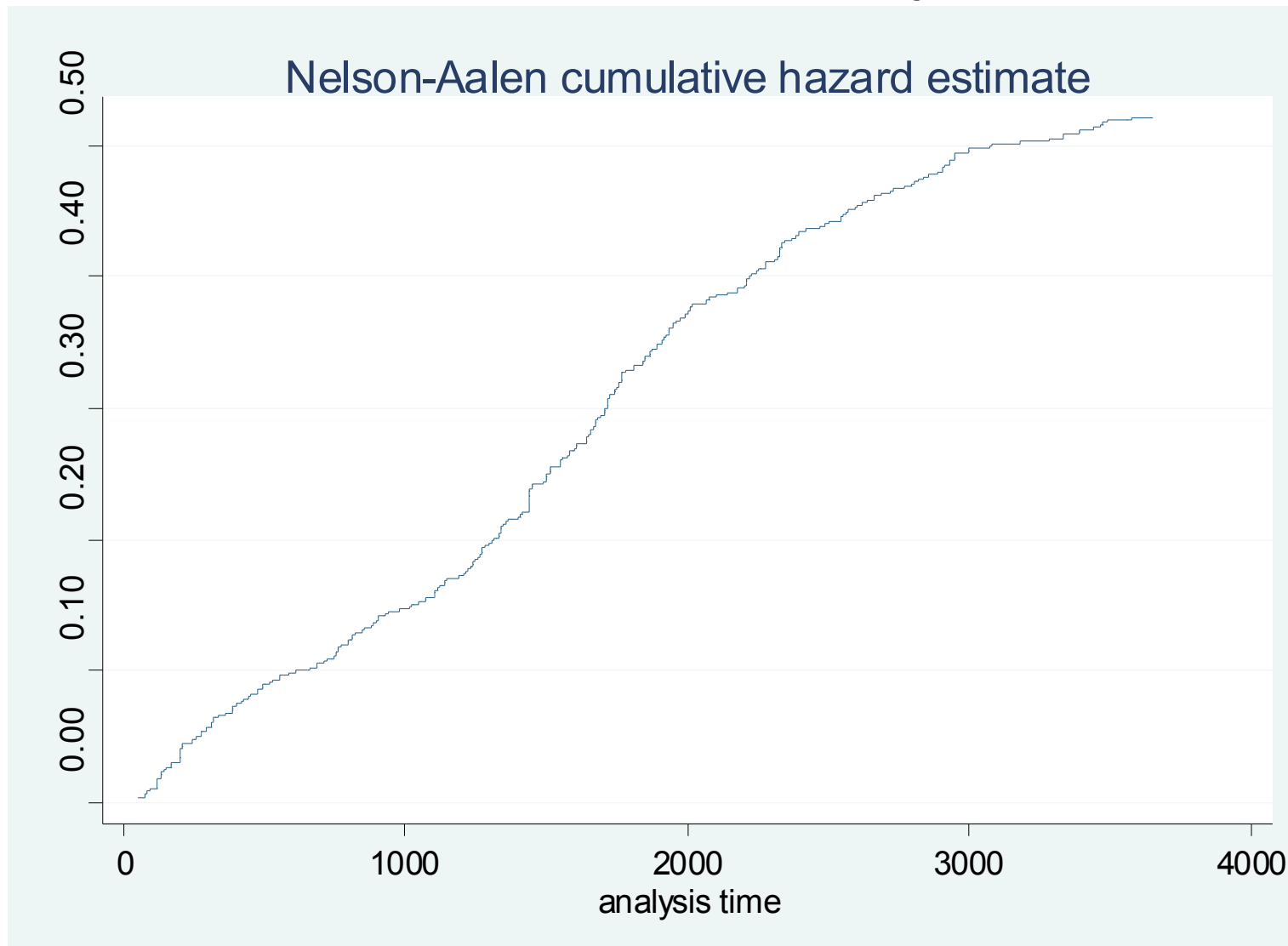
Descriptive analysis



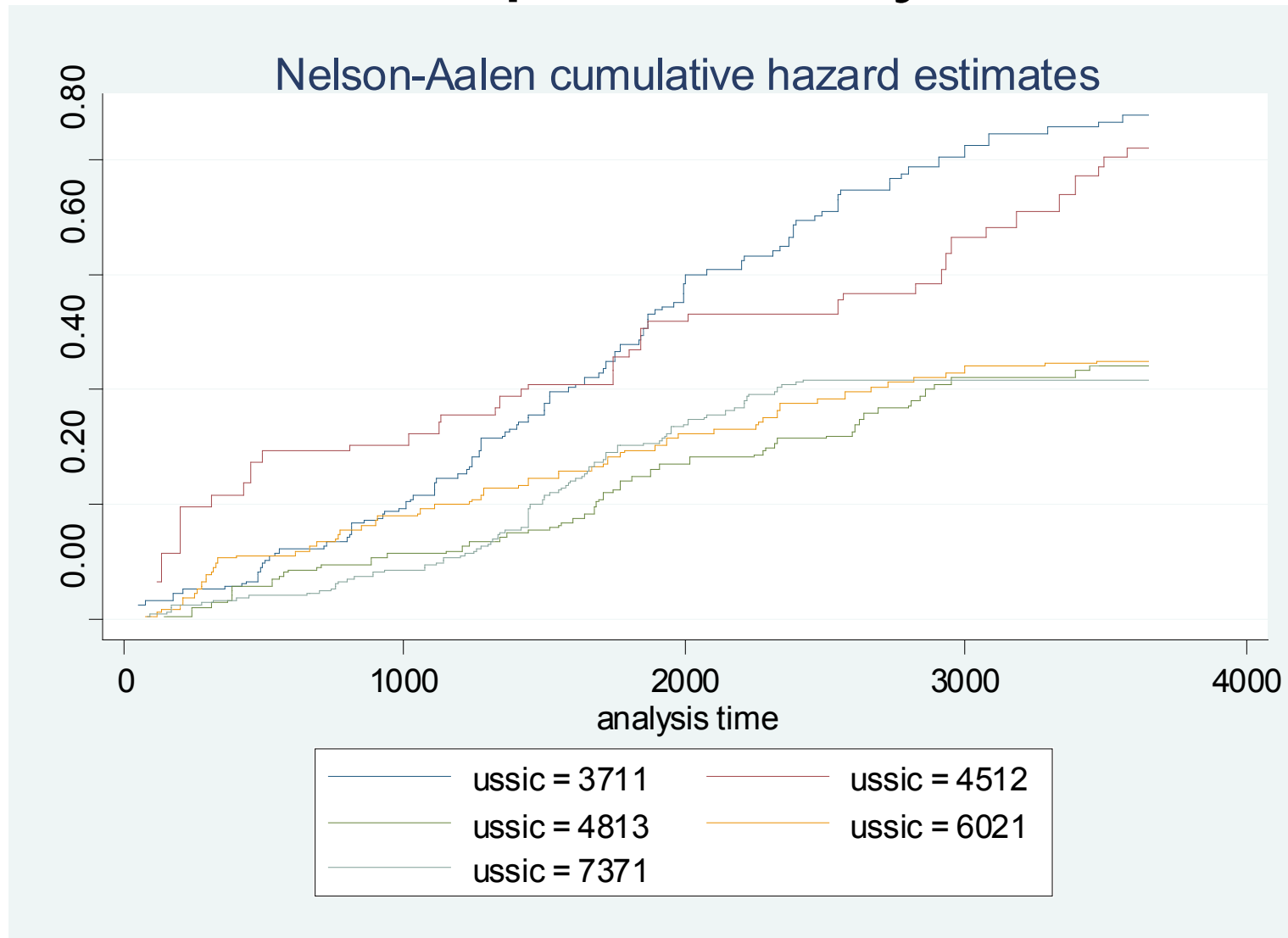
Descriptive analysis



Descriptive analysis



Descriptive analysis



Descriptive analysis

More cooperative agreements (around 60% of firms)

- Motor vehicles (US SIC 3711)
- Air transportation, scheduled (US SIC 4512)

Less cooperative agreements (around 40% of firms)

- Computer programming services (US SIC 7371)
- National commercial banks (US SIC 6021)
- Telephone communications (US SIC 4813)

Hypotheses testing

Level of Analysis	Hypothesis	Dependent Variables	Independent Variables	Direction of relations	Hypothesis Acceptance
Firm	Hypothesis 1	Occurrence of the coopetitive agreement (coop)	Number of collaborative agreement occurred prior to the first coopetitive JV (ncbpre)	Positive	Yes
	Hypothesis 2	Occurrence of the coopetitive agreement (coop)	Firms' country of origin (fcoo)	Negative related to fcoo = 1	No
Inter-firm	Hypothesis 3	Occurrence of the coopetitive agreement (coop)	Total number of competitors involved in coopetitive JV (nco)	Positive	Yes
Industry	Hypothesis 4	Occurrence of the coopetitive agreement (coop)	Time lag between two consecutive coopetitive JV in the industry (time_lag)	Negative	Mostly Yes except for Air Transportation
	Hypothesis 5	Occurrence of the coopetitive agreement (coop)	Total number of coopetitive JV in the industry (ncoind)	Positive	Yes

Discussion

- The results suggest that firms' experience in alliances and... predict whether a firm will enter a cooperative agreement, and they also suggest that industry where cooperative agreements....
- In general, these results support a..

Contribution

- ❖ Antecedents of coopetition have been investigated at the firm-, inter-firm-, industry-level
- ❖ We measured the proliferation of coopetition in five industries all over the world
- ❖ We contributed to the literature on JV
- ❖ We contributed to the literature on inter-firm rivalry

Limitations

- ❖ We identified and tested specific antecedents of coopetition as a result of our literature review
- ❖ We used a sample of coopetitive joint-ventures but coopetition can occur also through other forms of collaborative agreements

Future directions

- ❖ Other antecedents at the firm-, inter-firm-, and industry-level
- ❖ Larger sample including other industries