CHULALONGKORN BUSINESS SCHOOL

FLAGSHIP FOR LIFE

Using Equity Market Reactions to Infer Exposure to Trade Liberalization

A discussion by
Kanis Saengchote
June 6, 2019
Chulalongkorn Business School
kanis@cbs.chula.ac.th

Agenda

- A quick summary of the paper
- Some reflections on the event study methodology…
- …and why 2000 might not be the best year to use it.

What are the distributional implications of trade liberalization?

Import? Export? Resource allocation? Goods? Services? Welfare? Availability of granular microeconomic data allows us to ask many more questions and see homogeneity in responses.

Does a change in X cause a change in Y? Some challenges:

1. Measurability (observable/quantifiable)
   - Barriers and import quota on service firms. Non-tariff barriers.
2. Causality

The wisdom of the crowd is often insightful.

- In efficient market, stock prices adjust to new information – an "event", so to speak. Market reaction is informative.
- The modern event study has its roots in Ball and Brown (1968) [unexpected income changes] and Fama et al. (1969) [stock splits].
- The finance literature has relied on this market-based tool to look at the impact of corporation actions, such as earnings announcement, new security issues, M&A activities and how investors value certain aspects of firms, such as CEO or board members.

- Great idea to use this tool to infer exposure.

The idea behind an event study design is similar to diff-in-diff.

(1) Estimation Window [PRE]

(2) Event Window [POST]

[T - w, T + w]

Gap

EVENT

Abnormal Return = Actual Return – Predicted Return
   Where predicted return is based on an **(3) asset pricing model**.

Abnormal returns during the event window are then either aggregated (CAR) or averaged (AAR) for each firm.

Ceteris paribus, the abnormal return measures the ***unanticipated*** impact of the event. This is often used to established causality.
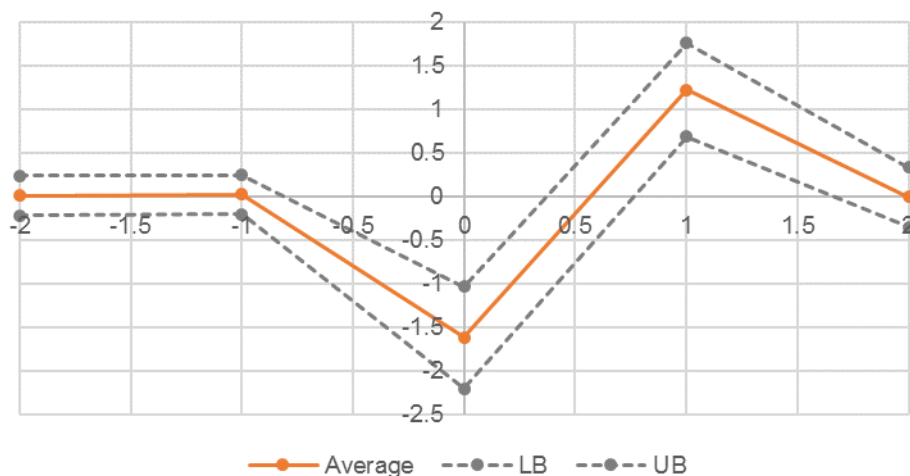
Example: Using 30% unremunerated reserve requirement [capital control] on 19 December 2006 to identify firm's exposure foreign capital.

Average Returns (equally-weighted)
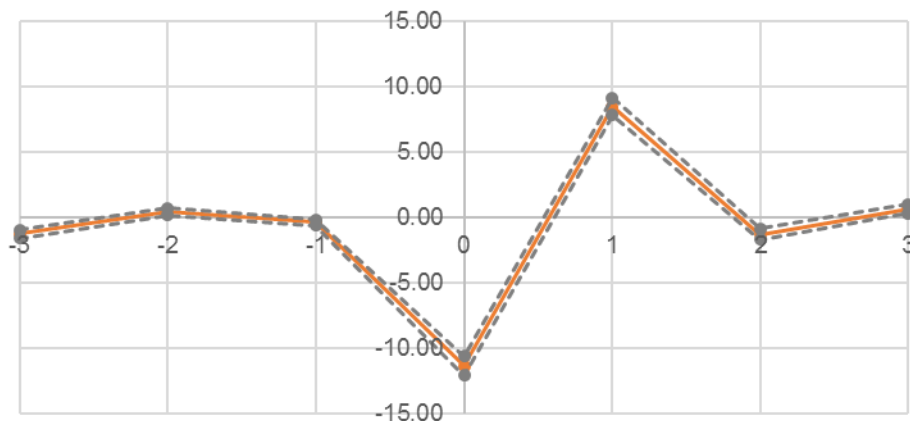
Average Abnormal Returns

Data: Refinitiv Datastream for daily returns
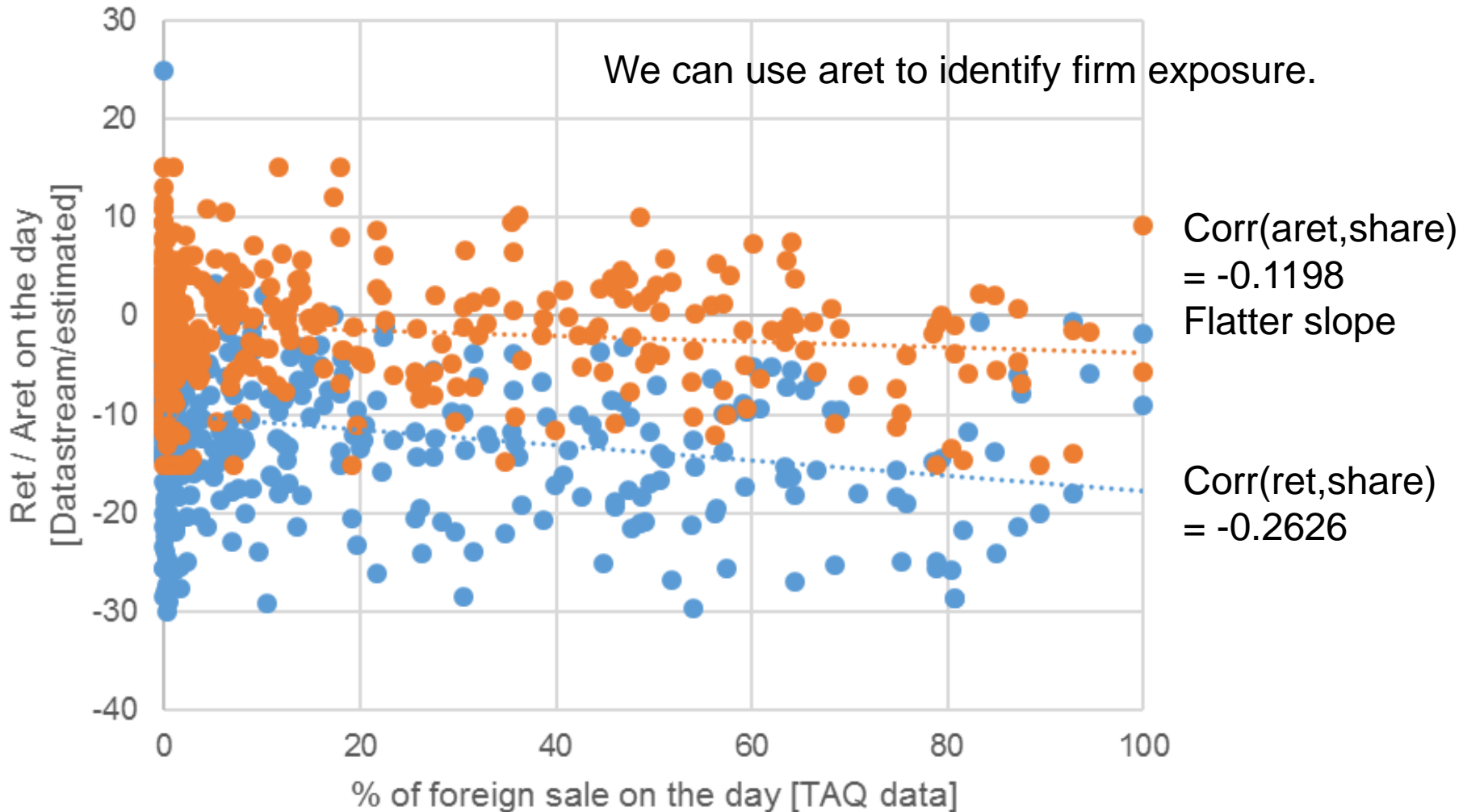
Event: 19 December 2006

Model: CAPM

Estimation window: 250 days, skipping 30 days before event

Event window: ±2 days

- Abnormal returns are lower in magnitude compared to actual returns.

- If all firms are similarly affected, then average abnormal returns (on the day or over the event window) should be zero.

Abnormal returns on the day are still negatively correlated with % foreign sales on the day after being "orthogonalized".

We can use aret to identify firm exposure.

Corr(aret,share) = -0.1198
Flatter slope

Corr(ret,share) = -0.2626

Very brief summary of the paper

- Exposure to trade liberalization is inferred using AAR.
- The authors conduct a series of analyses of ARR on trade outcomes and heterogeneity in NTR gaps to show the validity of the measure.
- …and robustness checks.
- Then the measure is used to explore the distributional implication across firms of various size.

- My discussion will focus on the use of event study in this setting from the perspective of a financial economist.

Event studies estimate the *unanticipated* impact, so it is important that the event (or details of it) is reasonably unanticipated.

- **Was the event partially anticipated by market participants?**
  → Malatesta and Thompson (JFE, 1985) probability adjustment.

  Not a big concern if objective is not to quantify total impact.

- **Would such partial anticipation vary cross-sectionally?**

→ Eckbo, Maksimovic and Williams (RFS, 1990) truncated regression.

  Event is involuntary. No selection issue here.

- **How long does it take for the market to impound information?**
  EMH says its immediate. Cohen and Lou (JFE, 2012) show it's more difficult for large, complicated firms.

→ Extend event window, particularly post-event.

  Point already discussed in section on Belgrade bombing.

Expected impact = prob. of PNTR x impact of PNTR

Are the magnitudes of AAR reflective of unanticipated revelation of information to the market? What's the most important date?
Some discussion about this in the paper will be useful.

I replicate the authors' result (to my best effort) here and will also use this to illustrate my next comment.

	My Replication			Authors'	
Date	**Mean**	**SD**	**N**	*Mean*	*SD*
Intro	**0.08**	**1.54**	**3,030**	*0.12*	*1.9*
House v	**-0.41**	**1.77**	**3,034**	*-0.65*	*2.1*
Cloture	**-0.18**	**1.76**	**3,077**	*-0.25*	*2.1*
Senate v	**-0.38**	**1.55**	**3,046**	*-0.40*	*1.8*
Signing	**-0.47**	**1.79**	**3,048**	*-0.67*	*2.2*
Overall	**-0.27**	**0.93**	**3,105**	*-0.37*	*1.0*

Include all dates or pick some dates?
AARs are not all correlated across the 5 dates.

Intro to House **House vote** **Cloture**

Senate vote **Signing**

Graphs by date
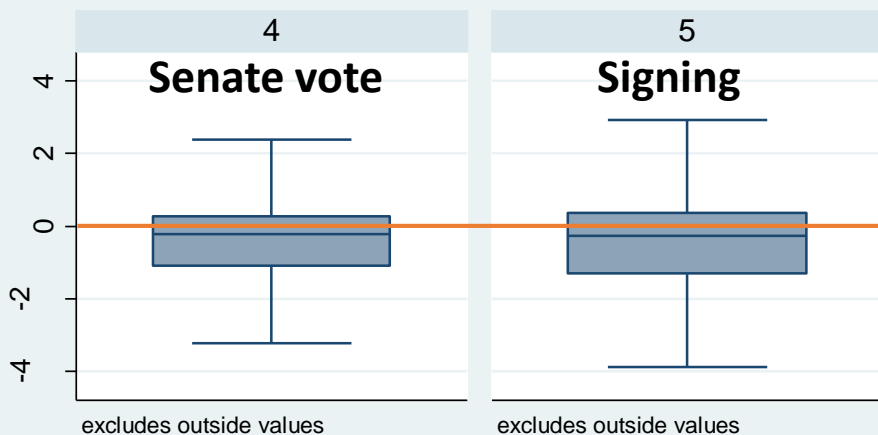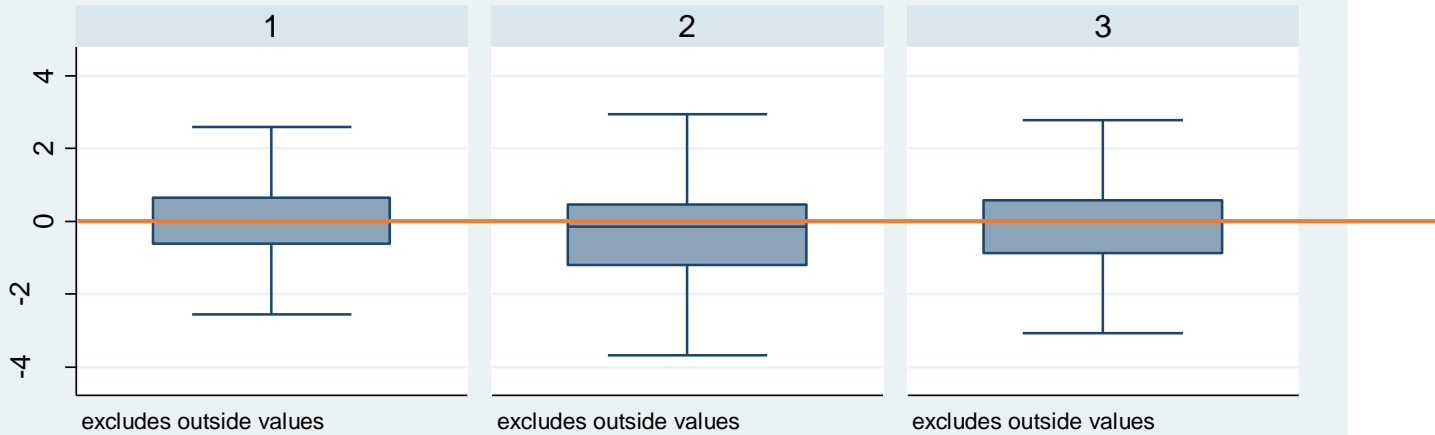
	aar1	aar2	aar3	aar4	aar5
aar1	1.0000				
aar2	0.0343	1.0000			
aar3	-0.0026	0.2983	1.0000		
aar4	-0.0219	0.1774	0.1507	1.0000	
aar5	-0.0039	0.2832	0.2053	0.1856	1.0000

But correlation for dates 2, 4 and 5 (with the most negative AAR) are positive (and stat. sig. at 1% level), so this is good news!
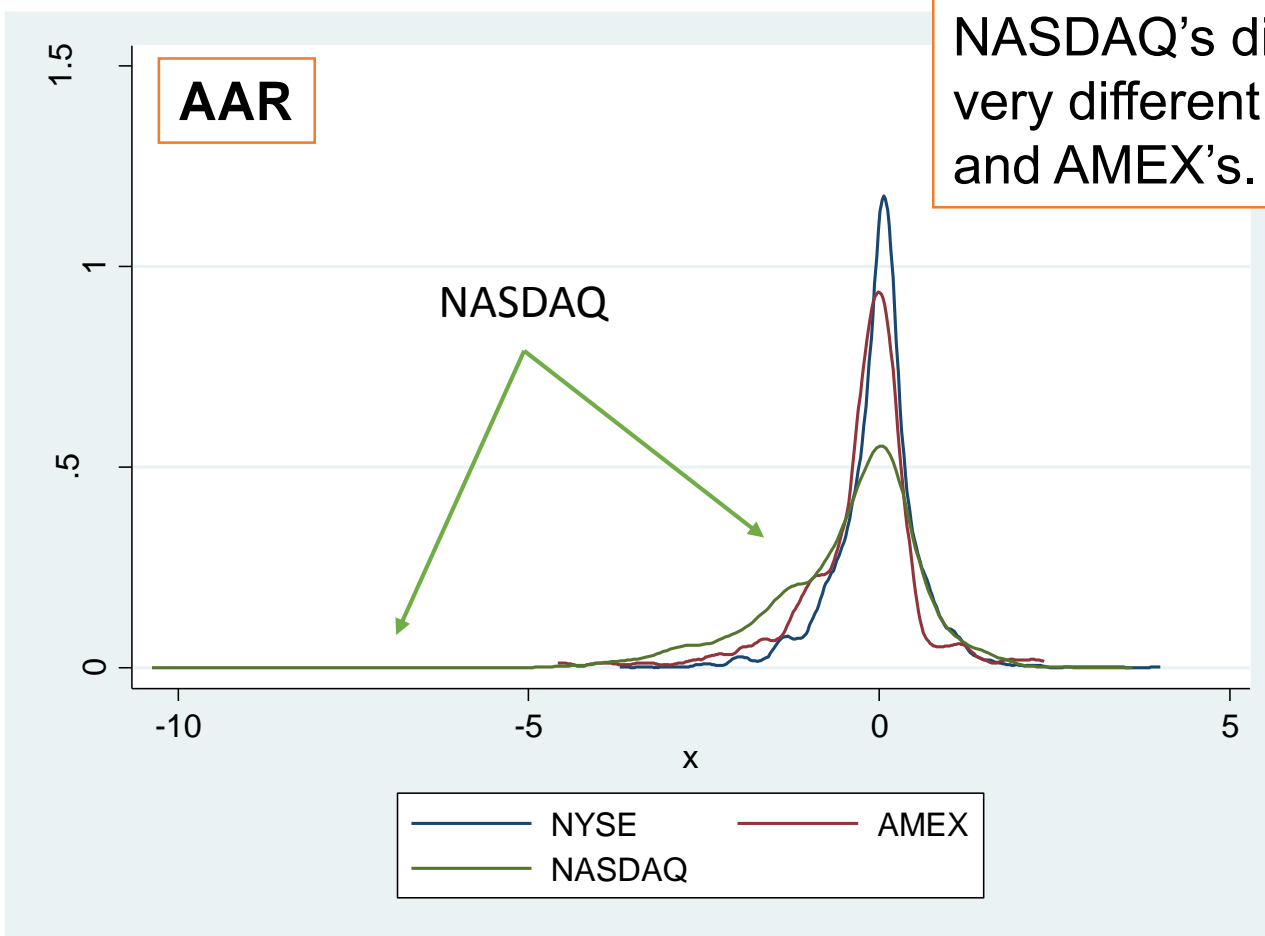
Comment 2: Is 2000 a good year to use event study?
Event study doesn't work well if prediction period isn't similar to estimation period and "market" isn't unified.

Exchange	AAR	N
NYSE	**-0.03**	1,298
AMEX	**-0.27**	162
NASDAQ	**-0.47**	1,599
Overall	**-0.27**	3,059

NASDAQ's distribution is very different from NYSE's and AMEX's.

AAR

Exchange	AAR	N
NYSE	**-0.03**	1,298
AMEX	**-0.27**	162
NASDAQ	**-0.47**	1,599
Overall	**-0.27**	3,059

NYSE   NASDAQ
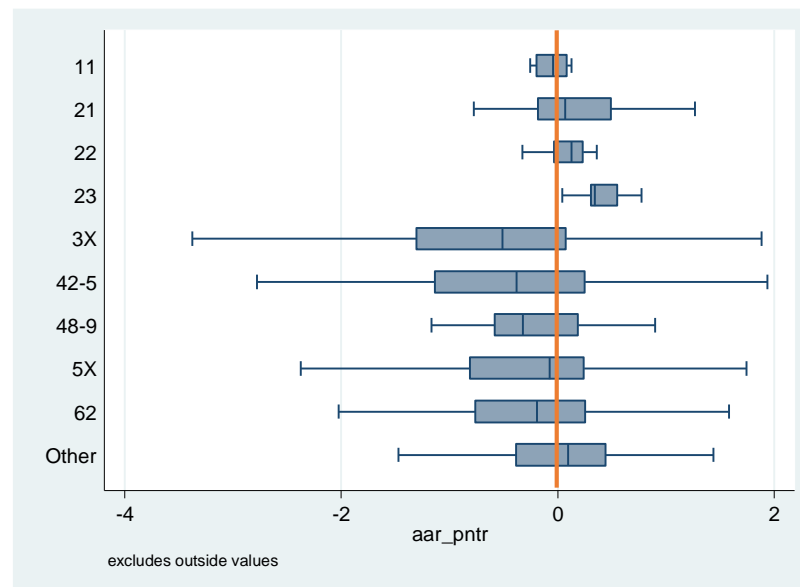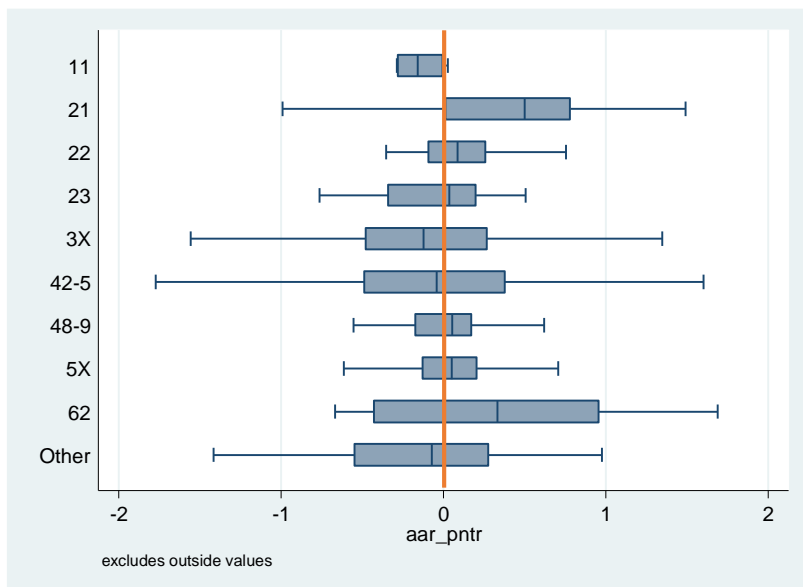
The box plot of AAR[PNTR] by industry in NASDAQ shows that most industries have lower AAR for NASDAQ-list firms than NYSE-listed firms. Asset pricing models assume a unified market as a risk factor, but market-specific trading activities due to indexing (see Da and Shives, EFM 2018) can lead to returns co-movements and thus systematic differences in AAR across markets.

Summary

- Interesting use of market-based approach. Inherent limitations (and thus caveat) of "net effects" and "listed-firms only" apply, however.

- Can be used to test many more trade-related hypotheses, for example, supply chain effect (Fee and Thomas M&A paper, JFE 2004).

- What I would love to see more discussion of:
    - **What is the unanticipated information at each date?** Multiple-dated events are more difficult to motivate than singular events.
    - **Is NASDAQ and dot-com bubble a concern?** Abnormal returns can be difficult to interpret when the market doesn't behave well and when there are different submarkets.