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Eclipse of the public corporation or eclipse of the exchanges?

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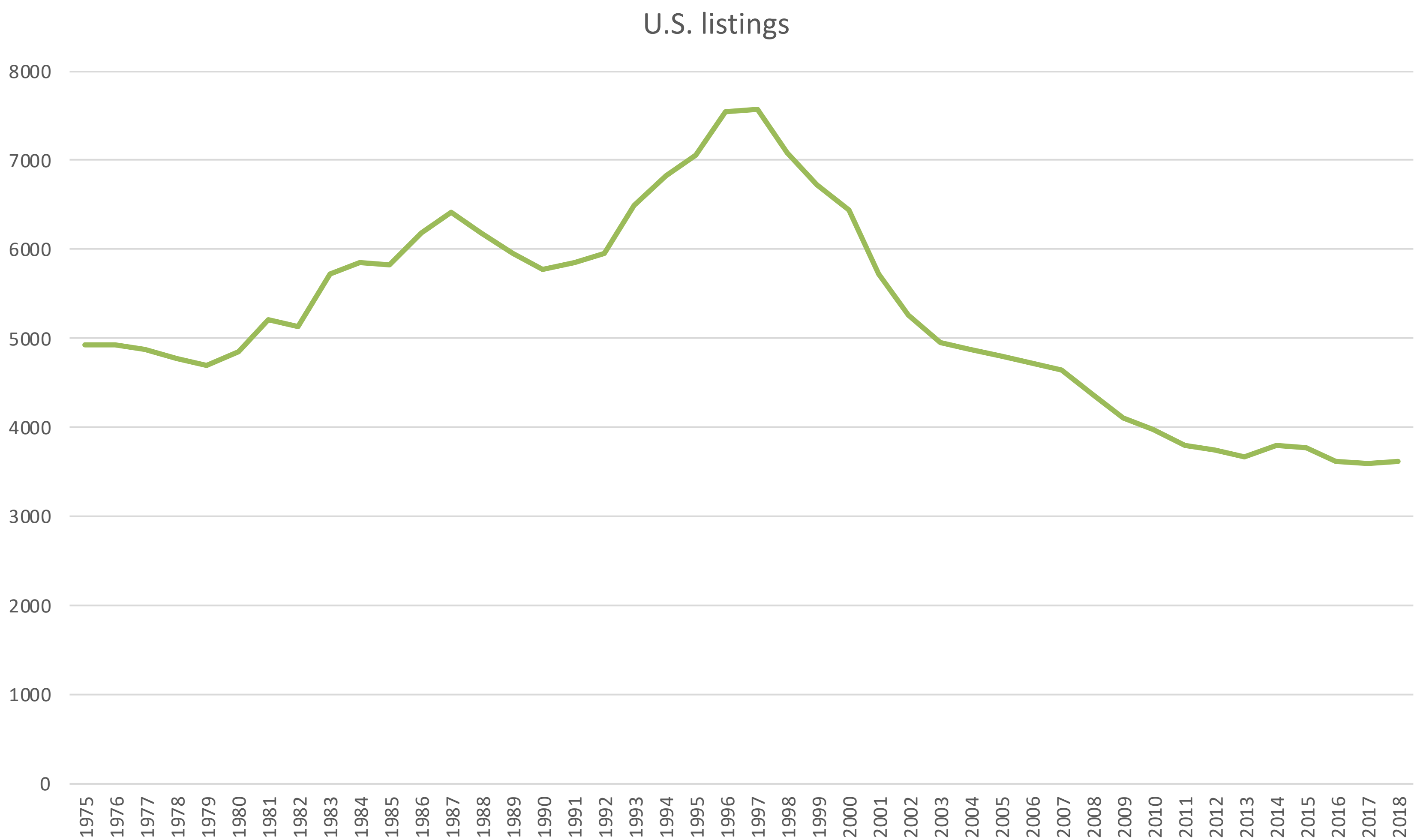
1. Issues

- The U.S. has dramatically fewer listed firms than twenty years ago and these firms are very different.
- Is the U.S. drop in listings a global phenomenon?
- How did it occur?
- How have American firms changed?
- Has the role of public markets changed?
- Why is this happening?

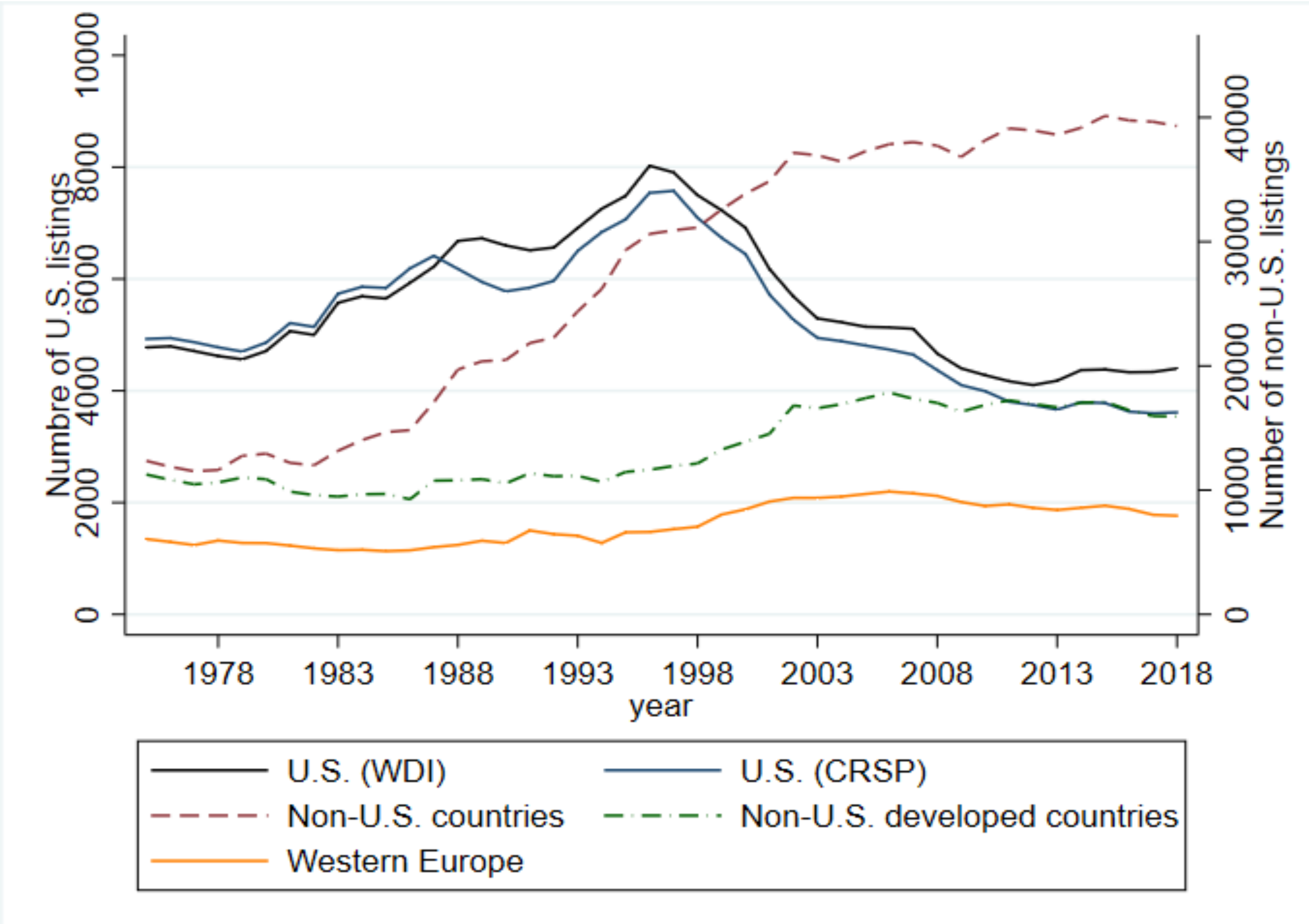
2. Fewer listings than in 1975



3. Evolution of number of US listings

- End of 2018: 3,613.
- 23% fewer listings than in 1975.
- Listing peak is in 1997 at 7,576.
- Drop from listing peak of 54%.

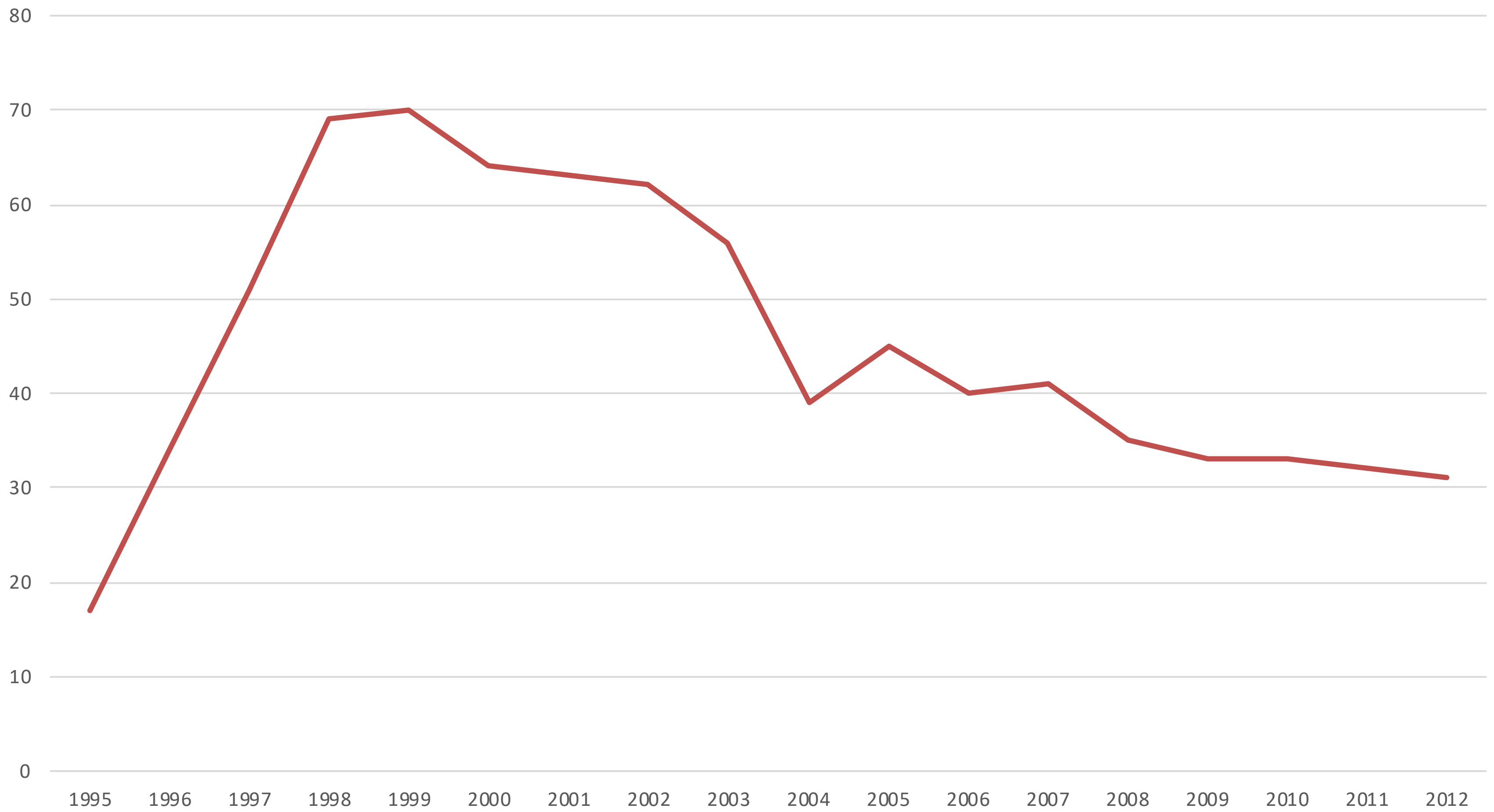
4. What about the rest of the world?



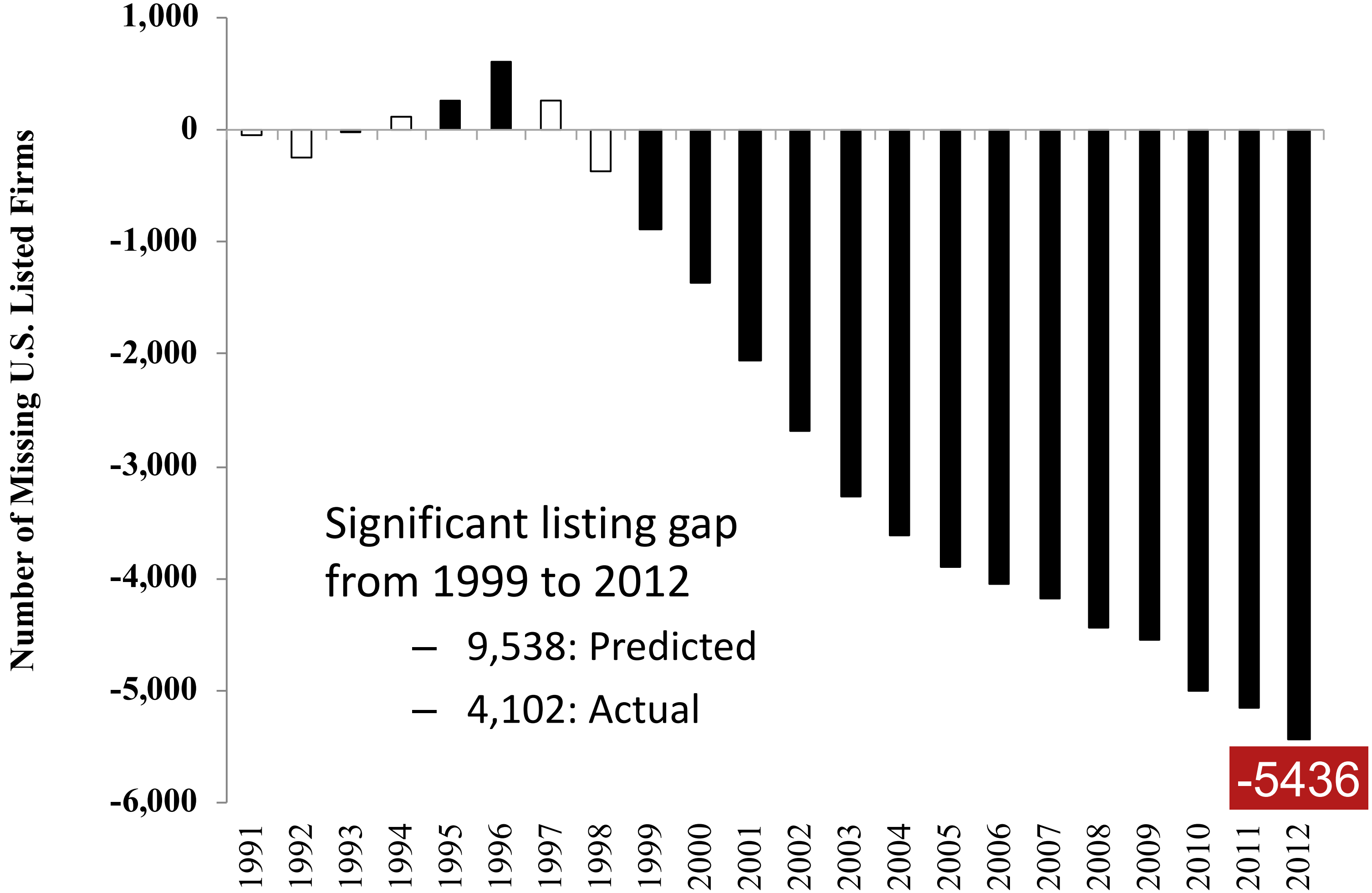
5. Evolution of the rest of the world

- Since 1975, increase in listings in ROW is 318% when US listings fall by 22%.
- ROW pretty stable since 2011 with peak in 2015.
- ROW in 2018 is 39,310. Peak is 40,128.
- Western Europe peaks at 9,885 in 2006. Has fallen to 7,940.

6. What about Latvia



7. The US “listing gap”



Significant listing gap from 1999 to 2012

- 9,538: Predicted
- 4,102: Actual

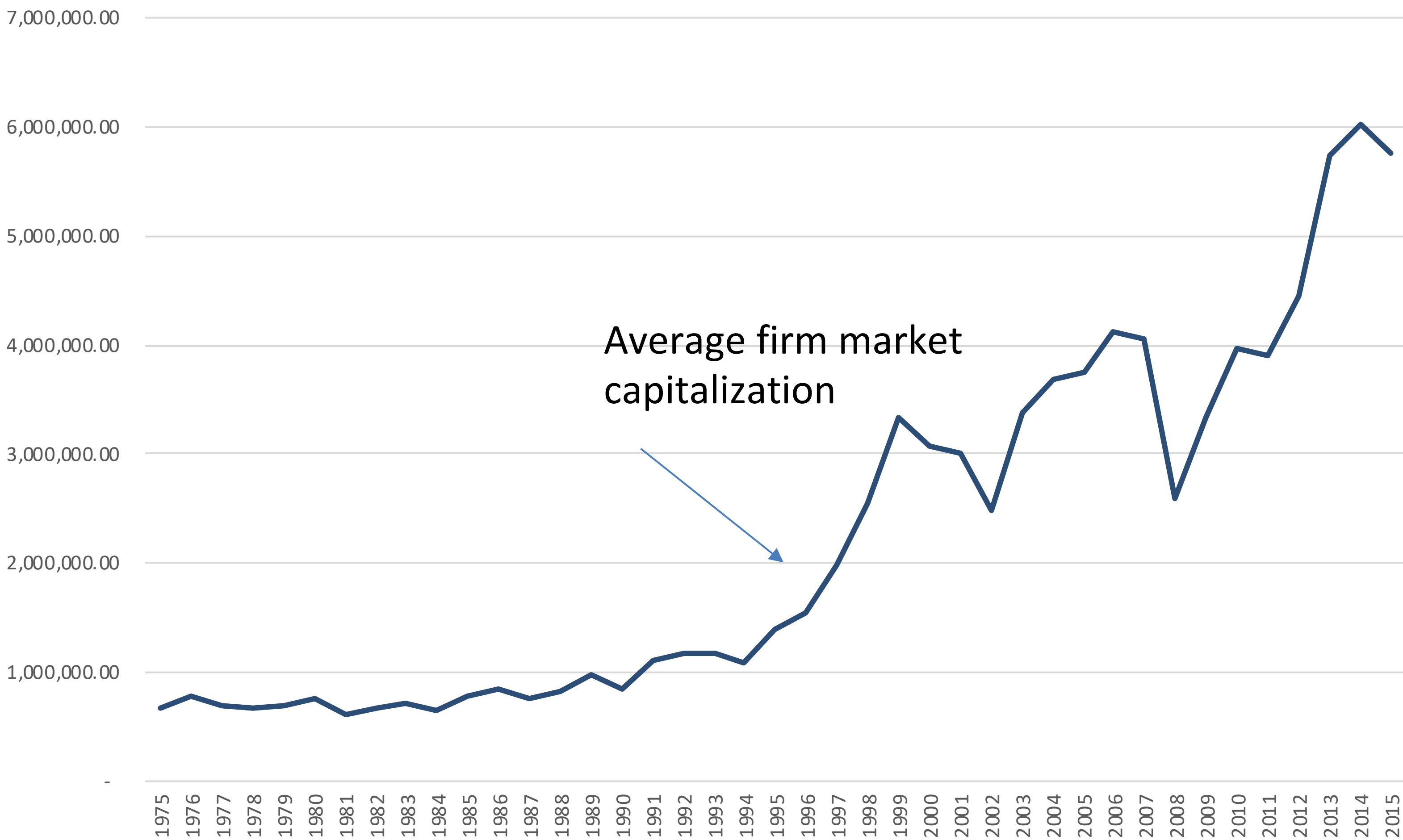
8. But?

- Is the U.S. just early?
- Peak in U.K. is 2006. Since then, listings have fallen by almost 50%.

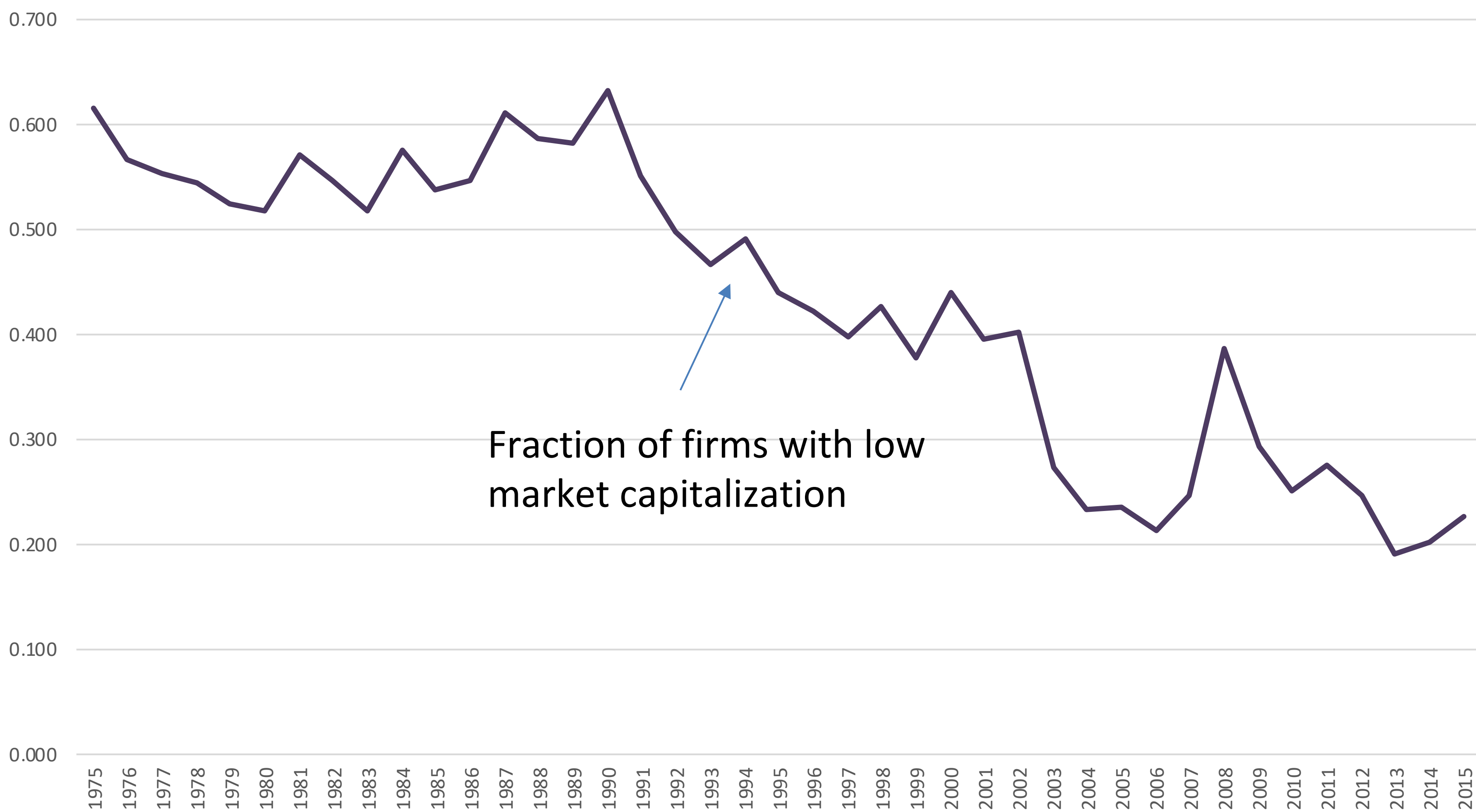
9. Evolution of aggregate market cap

- It is $21.5 trillion in 2015.
- Using constant 2015 dollars, it is 7 times market cap in 1975.
- But, roughly same as in the end of 1999.
- Since aggregate market cap increases by 7 times since 1975, but number of firms falls, mean firm market cap has to increase.

10. Average market cap increased sharply in constant dollars



11. Fraction of firms with low market cap (<$100 million in 2015 dollars)



12. How did the distribution of firm size change?

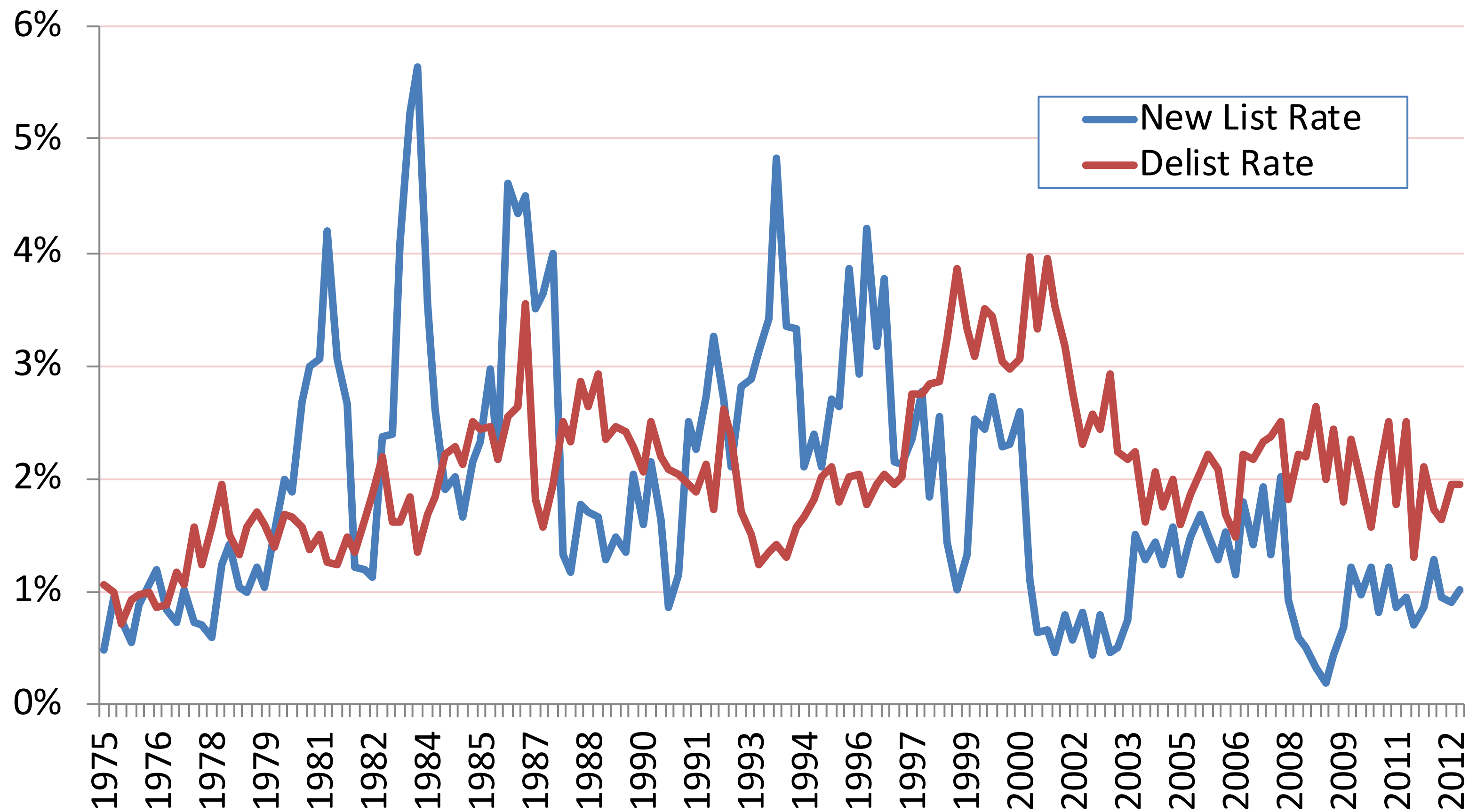
- The whole distribution shifted to the right, so listed firms became larger.
- The fraction of firms with market cap less than $100 million in 2015 dollars is 61.5% in 1976.
- First time it falls below 30% is in 2003.
- In 2015, it is 22.6%.

13. How did we get to where we are?

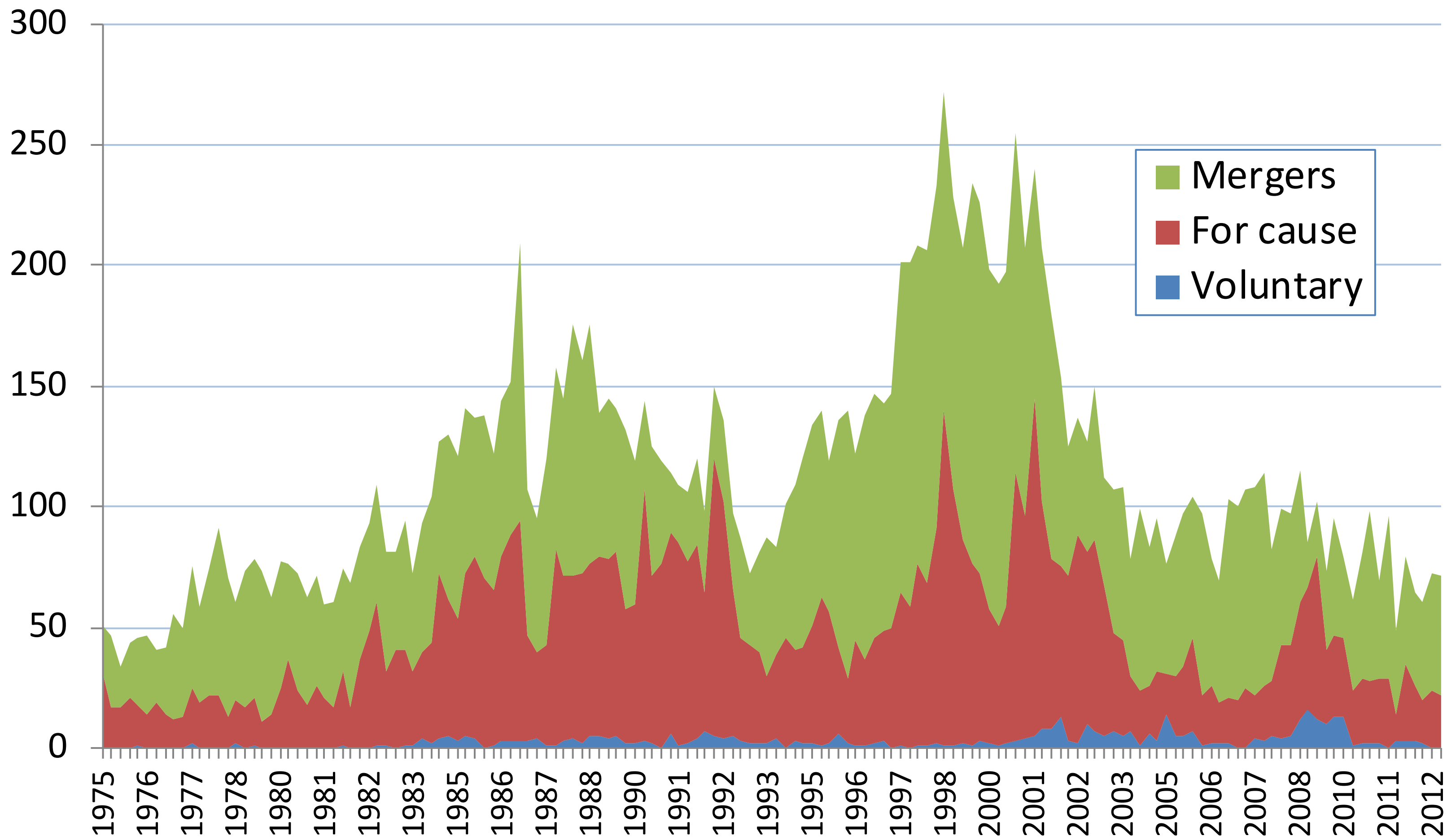
- Drop in new lists.
- But delists stay high.
- As a result, more delists than new lists.
- Mergers are major contributor to high delist rate.
- Voluntary delists – i.e., going private transactions – are not important to the story.

14. New lists, delists, and net lists

- CRSP: data for US new lists and delists



15. Delisting by type over time



16. Aging of American public firm

- In 1995, the median age of American public firms, measured since listing, is 8 years.
- It is 16.1 years in 2015.
- Mean age increases from 12.2 in 1995 to 19.5 in 2015.

17. Increase in concentration

- Mergers are a major contributor to the decrease in listed firms.
- Intra-industry mergers lead to an increase in concentration.

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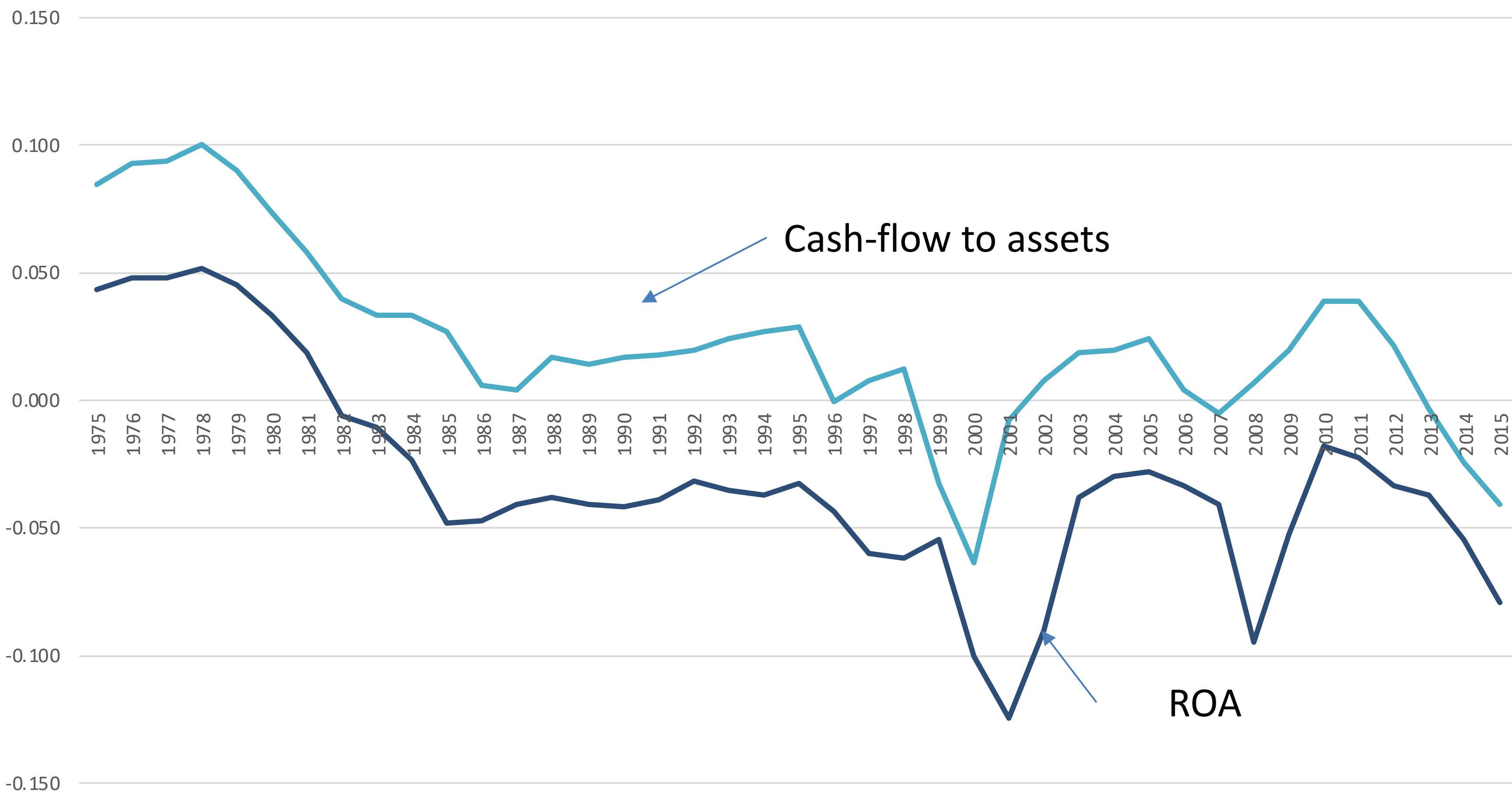
18. Accounting performance



Equally weighted averages

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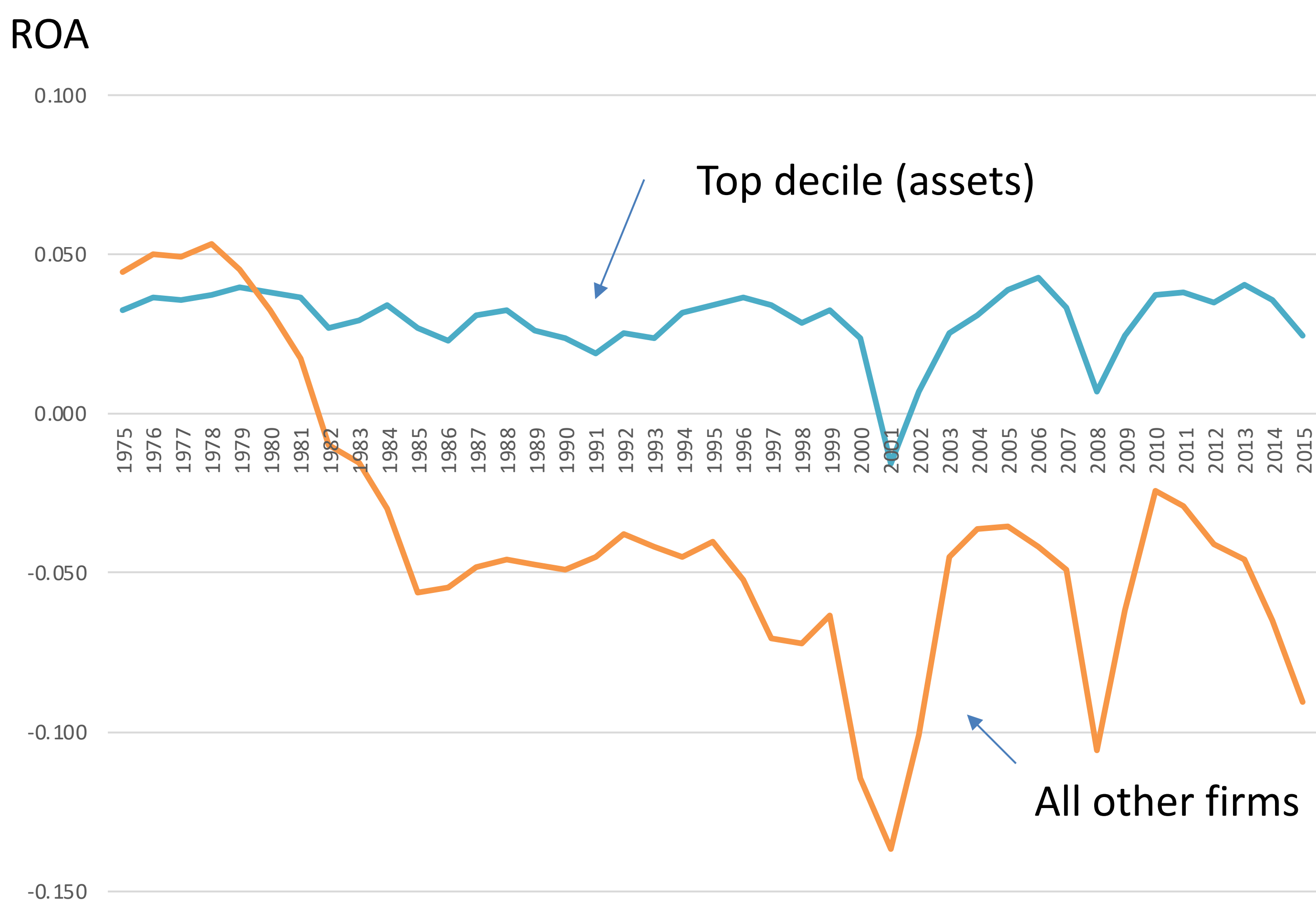
19. Loss-making firms

20. The largest firms are doing well

- Define largest firms as the top decile of assets in each year.
- Average cash flow for the firms is positive every year from 1975 to 2015.
- Equally weighted average is 8.3%; in 2009, it is 7.3%.

21. Where is poor performance coming from?



22. All about 200 firms?

Percent of a variable accounted for by the top 200 firms for that variable

Variable	1975	1995	2015
Earnings	62.5%	68.9%	101.8%
Assets	63.9%	69.0%	76.7%
Cash	81.9%	81.2%	85.6%
Cash Flow	65.7%	66.5%	78.9%
Dividends	69.1%	75.6%	82.3%
Total Payouts	67.8%	75.3%	77.8%
Total Debt	64.9%	78.1%	74.9%
Capx	70.9%	65.3%	74.5%
R&D	86.7%	83.2%	84.6%
Interest (xint)	65.2%	77.0%	66.2%
Market cap	65.7%	58.0%	68.8%

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23. Firms are different

- Fewer firms, larger average market cap.
- They are older.
- More concentration.
- Older firms are less flexible.
- Greater concentration could mean less competition.
- Both age and concentration adversely affect productivity growth and innovation.

24. Shrinking equity

- Listed firms are returning more capital to shareholders: net $3.6 trillion in 2015 dollars from 1997 to 2016.

25. Key takeaways

- Fewer public firms than in 1975.
- Steady decrease in the number of public firms since 1997 due to mergers and low IPOs.
- The U.S. is atypical, but the rest of the world may be following.

26. Why? Part I

- Firms have changed: Intangible assets have become more important.
- Public markets are better at funding tangible than intangible assets.
- Easier to build intangible assets initially by being private.

27. Why? Part II

- Much easier to raise capital without being public.
- Dramatic growth in private equity.
- Private equity claims have become more liquid, so the liquidity advantage of markets has fallen.

28. Why? Part III

- Much talk about regulation.
- In U.S., drop in IPO and drop in listings starts before regulatory changes
- Does not get worse with regulatory changes
- No clear evidence of an important role for regulatory changes.
- Recent regulatory relief has not helped.
- Regulatory relief could hurt.

29. Why? Part IV

- Institutionalization of investment
- Institutional investors can't invest in small cap that have low liquidity.
- Less interest from analysts.
- Less market-making support.
- Unfriendly world for small caps.

30. Why? Part V

- Technological change.
- ICT has made scale more advantageous.
- Leads to mergers and increases in scale.
- Getting to scale may be easier relying on existing infrastructure of large firms.
- Getting to scale requires less physical assets, which decreases value of listing.

31. Eclipse of markets?

- It is not just about IPOs: Existing firms are returning capital massively in U.S.
- So, on net, corporate sector is not using markets to raise equity.
- Capital expenditures have fallen in the U.S. relative to assets.

32. Does all this matter?

- For most investors, public markets are where the investment opportunities are.
- If these markets shrink in importance, most investors are frozen out under current institutional arrangements.
- Private equity can intermediate, but then the centrality of public equity markets in U.S. capitalism is at risk.