Asset Management and Market Stability

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Introduction

- Financial markets have become highly institutionalized.
  - Individual investors held directly 21.5% of US stocks in 2007, down from 47.9% in 1980 (French (JF 2008)).
  - Remainder held by mutual funds, pension funds, insurance companies, etc.
  - Share of institutions is larger for bonds, derivatives and commodities.

- Professional asset managers should be better able than individual investors to correct market inefficiencies.
  - Greater specialization and expertise.

- Yet, institutions may generate important procyclicalities.
  - Flows in and out of mutual funds are sensitive to performance and amplify price movements.
  - Benchmarking and tracking-error constraints can amplify price movements.

- Agency problem is key to the procyclicalities.

Policy Relevance

- Should policy makers care about prices in financial markets being distorted?

- Prices determine allocation of capital in the economy.
  - Overvalued companies may attract too much real investment, at the expense of undervalued ones.

- Distortions matter for the conduct of monetary policy.
  - Rise in interest rates can be amplified through institutional flows. (Ferroli-Kashyap-Schoenholtz-Shin (2014)).

- Bank of England and Financial Conduct Authority.
  - FCA/LSE/SEBI conference "Paying for Efficient and Effective Markets", 22-23 March 2019.
  - BoE/Imperial/LSE conference "Non-Bank Financial Institutions and Financial Stability", 28 September 2019.

- Evidence on the procyclicalities.

- Theoretical approaches to modelling the procyclicalities.

- Policy implications.

Amplification Through Flows

- Performance of stocks held by mutual funds that experience extreme outflows in a given quarter ("event quarter").
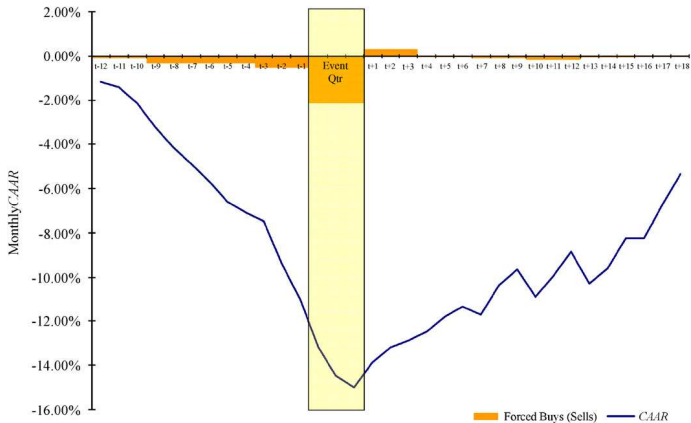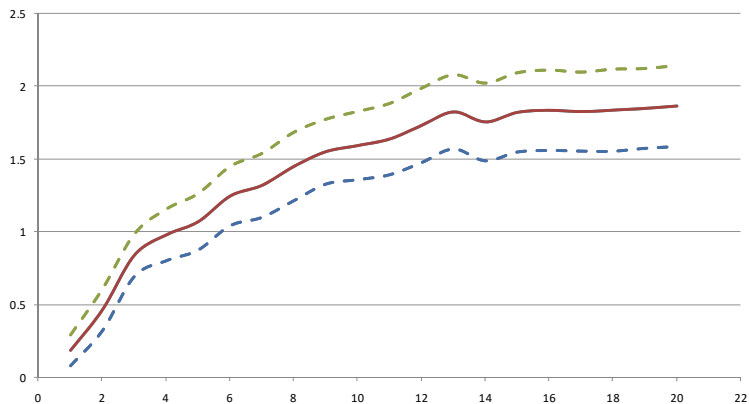

Source: Coval-Stafford (JFE 2007)

Summary

- Before event quarter:
  - Large negative return. Cumulative average abnormal return (CAAR) $\approx$ -11% over 12 months.
  - Large negative stock return is associated with large negative fund return. Fund return triggers the extreme outflows and the fire-sales.

- During event quarter:
  - Large negative return. CAAR $\approx$ -3% over 3 months.

- After event quarter:
  - Large positive return. CAAR $\approx$ 9% over 18 months (long time!)
  - $\rightarrow$ Flows amplify price drop.

- Similar findings for "fire-purchases" (extreme inflows).

Implications

- Performance-based flows amplify price movements.

- If flows respond to performance with a lag, stock returns exhibit short-run momentum (continuation) and long-run reversal.
  - Lou (RFS 2012): Empirical evidence linking momentum to flows.
  - Vayanos-Woolley (RFS 2013): Theory.

Flow-Performance Relationship

- Flows respond to performance with a lag.
- Impulse response flattens after twelve quarters (long time!)

Source: Coval-Stafford (JFE 2007)

Index Additions

- Effect of a stock's addition to the S&P 500 index.

	Panel A. Additions		
	196207–197608	197609–198909	198910–200012
Initial sample	305	297	303
Final sample	279	263	218
Cumulative Abnormal Returns			
Anndate	−0.047	3.171***	5.446***
	0.495	0.932***	0.940***
Anndate to effdate			8.899***
			0.927***
Anndate to effdate + 20 (CAR20)	−0.742	3.123***	6.396***
	0.470	0.681***	0.688***
Anndate to effdate + 60 (CAR60)	0.588	3.556***	6.189***
	0.505	0.635***	0.615***

Source: Chen-Noronha-Singal (JF 2004)

- Effect of a stock's deletion from the S&P 500 index.

	Panel B. Deletions		
	196207–197608	197609–198909	198910–200012
Initial sample	305	297	303
Final sample	145	28	62
Cumulative Abnormal Returns			
Anndate	−0.407*	−1.168	−8.462***
	0.469	0.393	0.016***
Anndate to effdate			−14.436***
			0.032***
Anndate to effdate + 20 (CAR20)	1.189*	−1.642	−4.710
	0.593**	0.357	0.339**
Anndate to effdate + 60 (CAR60)	2.172	−1.715	0.394
	0.572*	0.429	0.452

Source: Chen-Noronha-Singal (JF 2004)

Summary

- Before 1976, index additions and deletions had no effect.

- During 1976-1989:
  - Index additions raised price of average stock by 3.17%.
  - Index deletions lowered price, but effect was not statistically significant.

- After 1989, index additions and deletions had strong effect.
  - Index additions raised price of average stock by 8.90%.
  - Index deletions lowered price of average stock by 14.44%.
  - Effect reversed partly after two months, especially for deletions.

- Could effects be due to signalling?

Index-Induced Comovement

- Effect of a stock's classification on return comovement.
- Marginal value vs. marginal growth stocks: Similar characteristics, but classified into BARRA's value and growth index, repectively.

1992-2004			
Marginal Growth Portfolio		Marginal Value Portfolio	
β_{GG}	β_{GV}	β_{VG}	β_{VV}
0.875 ***	0.235	0.339 ***	0.920 ***
(3.65)	(1.11)	(3.97)	(9.61)
T3-A	T3-B		
$\beta_{GG} - \beta_{VG}$	$\beta_{VV} - \beta_{GV}$		
0.537 **	0.685 ***		
(1.86)	(2.71)		

| 1981-1991 (Control)			
Marginal Growth Portfolio		Marginal Value Portfolio	
β_{GG}	β_{GV}	β_{VG}	β_{VV}
0.498 ***	0.477 ***	0.368 ***	0.651 ***
(6.23)	(6.22)	(4.41)	(8.55)
T3-A	T3-B		
$\beta_{GG} - \beta_{VG}$	$\beta_{VV} - \beta_{GV}$		
0.130	0.174 *		
(0.98)	(1.41)		

Source: Boyer (JF 2010)

- Stocks much more correlated with their respective indices.
- Effects not due to signalling.
  - BARRA's indices are constructed mechanically (unlike S&P's).

Implications

- Benchmarking and tracking-error constraints affect prices.

- Constraints are relevant for many types of institutions.
  - Mutual funds, institutional asset managers, pension funds, insurance companies, endowments, sovereign wealth funds.

- Constraints can arise in response to agency problem. (Vayanos (2018), Buffa-Vayanos-Woolley (2019))
  - Investors limit tracking error because the managers may gamble for a high fee while being uninformed.

Tracking-Error Constraints and Amplification

- Overvalued asset rises → Volatility of a position relative to benchmark rises → Asset managers who underweigh the asset buy to reduce tracking error.
  - Buffa-Vayanos-Woolley (2019).
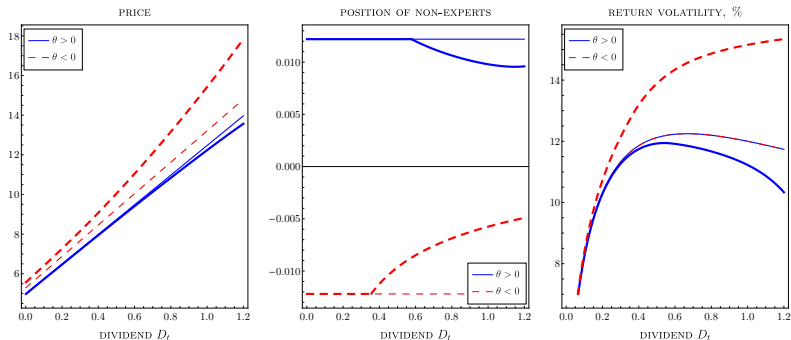
- Distortions are higher during bubbles than during crises.

Can Distortions be Larger during Crises?

- Can volatility of a position rise when price drops?

- Natural assumption for bond market.

- → Tracking-error induced distortions may be:
  - Larger during bubbles for stock market.
  - Larger during crises for bond market.

Some Implications for Policy

- Design of asset-management contracts and benchmarks matters for asset prices.
  - Contracts solve agency issues at the micro level.
  - But they also affect asset prices at the macro level.

- Tracking-error constraints in Buffa-Vayanos-Woolley (2019):
  - Render overvalued assets more overvalued and volatile.
  - Render undervalued assets more undervalued and less volatile.
  - Raise aggregate market by 4% and its volatility by 5%, relative to the case where investors do not impose the constraints (acting sub-optimally).
    - Asymmetry: Effects on overvaluation are larger.
    - By seeking to reduce risk at micro level, investors amplify it at macro level.

- Design of asset-management contracts and benchmarks deserve policy-makers' attention.