Is proprietary trading detrimental to retail investors?

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Motivation

- Evidence for limited financial literacy and information of retail investors (Lusardi and Mitchell, 2007; Guiso and Japelli, 2006)
- Financial innovations make efficient investments more complex
- Demographic change in Europe requires households to complement pay-as-you-go pensions system with saving for retirement

$\Rightarrow$ Need for financial advice

- Universal banks actively involved in most financial markets

$\Rightarrow$ Economies of scope in advising retail investors

- But universal banks might face conflict of interest

$\Rightarrow$ Banks might use retail investors as exit channel to the safe on transaction costs, contain market impact, and not disclose informational advantage when selling off assets

Main Questions and Findings

1. Do German banks systematically push stocks from their proprietary portfolio into their retail customers' portfolios?

$\Rightarrow$ Yes, particularly when they sell off a large portfolio share

. . . especially those banks with an asset management unit

2. How do stocks perform that banks sell their customers?

$\Rightarrow$ Those stocks systematically underperform compared to both

. . . other stocks in banks' proprietary portfolio

. . . other stocks in households' portfolios

Data Set

- Source: Security deposit statistics of the Deutsche Bundesbank
- Portfolio holdings of all German banks and holdings of their respective aggregate retail customers on security-by-security basis
- Quarterly frequency from 2005Q4 to 2009Q3

Sample construction:

- Only listed stocks considered
- Top percentile of banks according to average quarterly stock portfolio value (covers 58% of German banks' stock holdings)
- 102 banks with 18,652 different stock positions give us a total of 112,870 observations
- Matched on security level with market data on performance, transaction volume etc.

Methodology

To study whether banks push stocks into their customers' portfolios we estimate the following interaction model:

$$\Delta\rho^{C}_{ijt} = \beta_1 \Delta\rho^{B}_{ijt} + \beta_2 Decrease^{B}_{ijt} + \beta_3 \Delta\rho^{B}_{ijt} \times Decrease^{B}_{ijt} + \alpha_j + \gamma_t + \epsilon_{it}$$

where

- $\Delta\rho^{C}_{ijt}$: Percentage change in the share of stock i in the aggregated customer portfolio of bank j at time t
- $\Delta\rho^{B}_{ijt}$: Percentage change in the share of stock i in bank j's portfolio at time t
- $Decrease^{B}_{ijt}$: Dummy variable for a reduction in the stock share i
  Set to 1 for either any, a 25% or a 50% decrease
- $\Delta\rho^{B}_{ijt} \times Decrease^{B}_{ijt}$: Interaction term (variable of interest)
- α_j and γ_t: Time and bank fixed effects

Results

	(0%)	(25%)	(50%)
$\Delta\rho^B_{ijt}$	0.0016	0.0044**	0.006***
$Decrease^B_{ijt}$	-0.116***	-0.153***	-0.201***
$\Delta\rho^B_{ijt} \times Decrease^B_{ijt}$	-0.0392***	-0.124***	-0.198***
Fixed effects	Bank	Bank	Bank
Time effects	Yes	Yes	Yes
Clustering	Bank	Bank	Bank
R^2	1%	1%	1%
Number of obs	112,870	112,870	112,870

- Generally, shares in bank's and customers' portfolio positively correlated
- But if bank decreases its share in a stock customers increase their share
- Effect is more pronounced for more substantial portfolio share reductions

Robustness

	(0%)	(25%)	(50%)
$\Delta\rho^B_{ijt}$	0.0006	0.0031**	0.0047***
$Decrease^B_{ijt}$	-0.102***	-0.133***	-0.178***
$\Delta\rho^B_{ijt} \times Decrease^B_{ijt}$	-0.041***	-0.114***	-0.181***
Dummy gain$_{it-1}$	-0.0578***	-0.0595***	-0.061***
$Vola_{it-1}$	1.74*	1.81*	1.82**
$MtBV_{it}$	-0.0002***	-0.0002***	-0.0002***
MV_{it}	0.102***	0.104***	0.106***
Fixed effects	Bank	Bank	Bank
Time effects	Yes	Yes	Yes
Clustering	Bank	Bank	Bank
R^2	1%	1%	1%
Number of obs	99,859	99,859	99,859

- Results robust when controlling for market conditions for stock i such as
  - Positive absolute return previous quarter ($Dummygain_{it-1}$)
  - Stock price volatility in previous quarter ($Vola_{it-1}$)
  - Market-to-book-value and market value ($MtBV_{it}$ and MV_{it})

Robustness

- Results also prevail for 60, 70, and 80% reduction in bank's portfolio shares of stock *i*
- Results robust to different measures of portfolio reduction such as
  1) absolute Euro amounts and
  2) amounts sold relative to free float market capitalization
- Results prevail when accounting for herding behavior of retail investors
- Splitting the sample into banks with and without asset management unit shows that effect economically and statistically mainly significant only for banks with asset management

Performance

- How do stocks that flow from bank portfolios into customer portfolios perform?
- Estimate average daily abnormal returns for each quarter with a one-factor model (and four-factor model)
- Compare performance of stocks that flow from bank to a customer portfolio with average performance of ...
  1. other stocks in bank portfolios
  2. stocks in which banks increased holdings
  3. other stocks in households' portfolio
  4. stock which respective households increased holdings

Results

One-factor market model:

	Obs	Mean	Median	t-test	Wilcoxon test
Panel A: Threshold = 0					
Case group vs.	48,744	-0.001038	-0.00042		
Control1	170,100	-0.000034	0.00208	-51.318***	-54.170***
Control2	117,607	0.000336	0.00031	-66.888***	-71.547***
Control3	2,788,712	-0.0006082	-0.0001	-11.788***	-14.823***
Control4	1,363,947	0.00144	0.0009	-140***	-151.439***
Panel B: Threshold = -25%					
Case group vs.	28,447	-0.001297	-0.000446		
Control1	190,403	-0.000105	0.0000	-44.536***	-41.889***
Control2	123,722	0.000347	0.0001	-59.656***	-60.798***
Control3	2,807,471	-0.0006084	-0.0001	-12.248***	-9.082***
Control4	1,370,400	0.00143	0.0009	-110***	-117.539***
Panel C: Threshold = -50%					
Case group vs.	17,733	-0.00109	-0.00006		
Control1	201,091	-0.000186	0.0000	-25.898***	-18.690***
Control2	124,530	0.000345	0.000	-40.384***	-38.113***
Control3	2,817,190	-0.00062	-0.00012	-0.2504	-5.864***
Control4	1,373,325	0.00144	0.0009	-83.495***	-89.556***

- Stocks in the base group underperform the stocks in all control groups
- Stocks sold by banks to their customers underperform the stocks in the group *Control3* quarterly by almost 382 basis points in absolute terms
- Similar results with four-factor model

Is prop trading *really* detrimental to retail investors?

- Differences in performance of aggregate customer portfolios of banks with proprietary trading as compared to customer portfolios of banks without proprietary trading

	Obs	Mean	Median	t-test	Wilcoxon
All banks					
One-factor model					
α^{no} vs.	697	0.0000648	0.0000548		
α^{yes}	1,170	0.0000431	0.0000518	2.249**	2.783***
Four-factor model					
α^{no} vs.	697	0.0000828	0.0000775		
α^{yes}	1,170	0.0000468	0.0000667	1.531*	4.629***

Conclusion

- Substantial conflict of interest between proprietary trading and financial advice given by universal banks
- Banks seem to dump underperforming stocks into their retail customers' portfolio
- This effect so substantial that it leads to a lower portfolio performance of customer portfolios at banks with proprietary trading