Discussion of:

Intermediaries and Asset Prices: Evidence from the U.S., U.K., and Japan, 1870-2016

by Matthew Baron and Tyler Muir

Matteo Crosignani
Federal Reserve Board

Second Maryland Junior Finance Conference

University of Maryland Robert H. Smith School of Business
April 2018

Disclaimer: The views expressed in this discussion are solely the responsibility of the author and should not be interpreted as reflecting the views of the Board of Governors of the Federal Reserve System or of anyone else associated with the Federal Reserve System.

This Paper

Past year asset growth negatively predicts stock index, bond, and currency returns over the subsequent 1-3 years

Detailed data from U.S., U.K., and Japan from 1870 to 2016

1) Real returns on stocks, bonds, and currencies
2) Balance sheet data on two "sectors": Commercial Banks and Securities Dealers
   - Assets: tot assets, cash, loans, securities, real estate
   - Liabilities: deposits, other ST and LT liabilities, equity

! Much of this is newly transcribed from historical sources
   - The data collection in itself is a contribution

Two Goals

The paper (still preliminary) makes two important points:

1) Isolate the correlation between asset growth and returns
   - Asset growth is endogenous

2) Relate this correlation to financial frictions
   - We already have some U.S. evidence from the last 40 years

Asset Growth Predicts Returns

Correlation between past year asset growth $x_{i,t}$ and real returns over the subsequent 1-3 years

$$RealReturns_{i,t+K} = \alpha_i + \beta x_{i,t} + \epsilon_{i,t}$$

Country FE α_i, run separately for comm. banks and securities dealers

	Stock index real total returns			*Bond real total returns*			*Currency real returns*		
	1yr ahead	2yrs	3yrs	1yr ahead	2yrs	3yrs	1yr ahead	2yrs	3yrs
Commercial Banks									
asset growth	-0.498***	-0.720***	-0.677***	-0.466***	-0.756***	-0.759***	-0.445***	-0.774***	-1.065***
	[-3.658]	[-3.624]	[-2.753]	[-6.416]	[-5.598]	[-3.744]	[-5.775]	[-5.308]	[-4.885]
Adj. R^2	0.036	0.044	0.035	0.110	0.109	0.058	0.093	0.100	0.102
N	375	375	375	378	378	378	365	365	365
Securities Dealers									
asset growth	-0.101*	-0.228***	-0.454***	-0.111***	-0.282***	-0.390***	-0.096**	-0.242***	-0.301***
	[-1.741]	[-2.700]	[-4.684]	[-2.884]	[-4.525]	[-4.793]	[-2.445]	[-3.546]	[-3.423]
Adj. R^2	0.012	0.034	0.092	0.032	0.080	0.093	0.039	0.073	0.071
N	263	263	263	263	263	263	260	260	260

What about $>$ 3 years? Even a no-result would be interesting

How Robust is this Correlation?

1) Separately for each country?
2) Driven by bad state?
   - Analysis above/below median asset growth within each country. Not really a boom/bust comparison

Median Asset Growth		
US	Commercial Banks	6.2%
	Securities Firms	9.4%
UK	Commercial Banks	4.2%
	Securities Firms	5.9%
JP	Commercial Banks	9.1%
	Securities Firms	13.2%

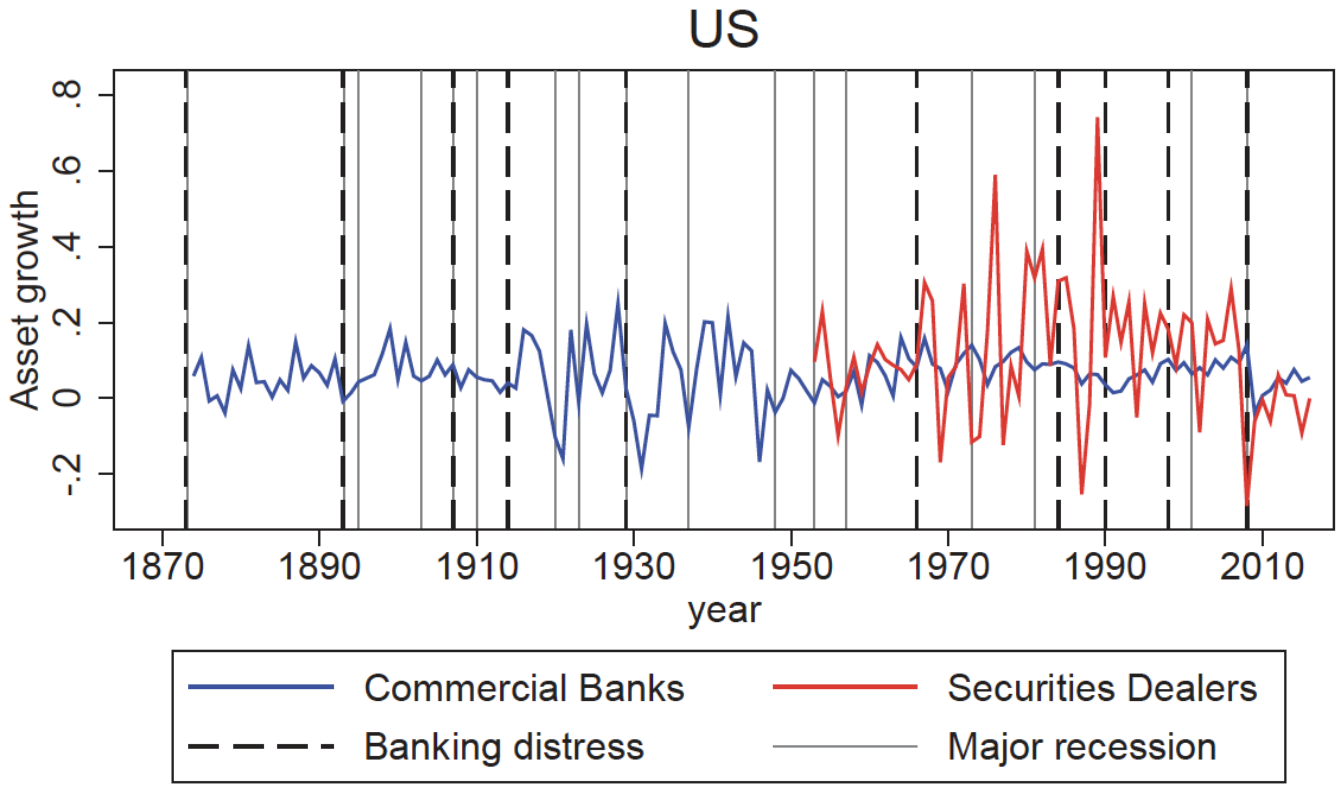
3) Does it predict across borders?
   - Check returns in 32 countries *excluding* US, UK.
   - Both loan growth in *j* and U.S./U.K. predict returns in *j*
   - U.K. more important pre-1939, U.S. post-1950

Identification Challenge

But asset growth is **correlated with macro variables**

- SDF of repr. agents in standard consumption models

"Figure 1 is also useful for seeing that intermediary balance sheet variables are relatively uncorrelated with business cycles"



Correlations with Potential Omitted Variables

Loan growth	1.00													
Securities holdings growth	-0.36	1.00												
Other asset growth	0.03	0.08	1.00											
Default yield spread	-0.43	0.24	-0.08	1.00										
Default return spread	-0.13	0.06	-0.31	-0.05	1.00									
Term spread	-0.19	0.28	-0.13	0.19	0.21	1.00								
T-bill rate	0.14	-0.10	0.07	-0.06	-0.06	-0.49	1.00							
Dividend yield	-0.07	0.07	-0.13	0.26	0.13	-0.22	0.03	1.00						
Book to market	-0.10	0.11	-0.20	0.44	0.02	-0.12	0.19	0.69	1.00					
Investment to Capital	0.47	-0.19	0.32	-0.07	-0.21	-0.43	0.56	-0.24	-0.01	1.00				
Net equity expansion	0.05	-0.03	-0.11	-0.18	0.14	-0.21	-0.03	0.23	-0.03	-0.04	1.00			
Fraction equity of issuance	0.14	-0.23	0.01	0.00	0.15	-0.27	0.24	0.31	0.18	0.01	0.65	1.00		
cay	0.01	-0.17	-0.12	-0.07	-0.11	0.09	0.10	0.15	-0.08	0.00	0.06	-0.09	1.00	
Cross-sectional premium	0.12	0.02	0.00	0.04	-0.01	-0.13	-0.54	0.52	0.28	-0.18	0.24	0.02	-0.13	1.00

- Check correl. of **asset growth** with potential omitted variables
- Just a small subset of data (U.S. commercial banks in 1920-2016)
- Are these correlations significant?

Including Controls

Key question is whether asset growth predicts stock, bond, currency returns controlling for potential omitted variables

Panel B: Strongest stock predictor variables (*Dependent variable = Stock index total real returns*)

	1 year ahead returns			*2 year ahead returns*			*3 year ahead returns*		
U.S. commercial bank:									
Loan growth	-0.050***		-0.041**	-0.062**		-0.043*	-0.037		-0.011
	[-2.634]		[-2.182]	[-2.322]		[-1.808]	[-1.196]		[-0.433]
Securities growth	-0.009		-0.006	-0.042		-0.038	-0.028		-0.024
	[-0.427]		[-0.303]	[-1.596]		[-1.622]	[-0.967]		[-0.961]
Other asset growth	-0.023		-0.016	-0.051**		-0.040*	-0.073***		-0.056**
	[-1.273]		[-0.889]	[-2.054]		[-1.739]	[-2.654]		[-2.286]
Other predictability variables:									
cay		0.046**	0.044**		0.087**	0.076**		0.107***	0.096**
		[2.136]	[2.059]		[2.618]	[2.333]		[2.780]	[2.479]
Dividend yield		0.033*	0.031*		0.064**	0.060**		0.079**	0.074**
		[1.983]	[1.841]		[2.447]	[2.376]		[2.587]	[2.433]
Investment to Capital		-0.040*	-0.023		-0.065*	-0.048		-0.083**	-0.072*
		[-1.854]	[-1.041]		[-1.950]	[-1.434]		[-2.157]	[-1.809]
Net equity expansion		-0.042**	-0.040**		-0.099***	-0.103***		-0.109***	-0.116***
		[-2.129]	[-2.115]		[-3.399]	[-3.608]		[-3.321]	[-3.562]
Adj. R^2	0.061	0.110	0.135	0.073	0.257	0.291	0.059	0.305	0.331
N	96	96	96	95	95	95	94	94	94

- Repeat estimation with **asset growth** as a RHS variable
- This is table 8 (!), but should be the main table
- Check the semi-partial R-square of each variable, i.e. information about the dependent variable that is **orthogonal to the other covariates**

Predictability and Financial Frictions

More evidence on intermediaries' SDF and asset prices

1) Stronger predictability in times/countries when intermediaries hold a large share of stocks or bonds
2) Most important components for commercial banks and securities dealers are loans and securities, respectively

While contribution is empirical, the paper can **improve the discussion** of **which friction** drives the predictability

- Lay out intermediary-based asset pricing literature (ST debt Vs. equity constraints) and test hypotheses
- Why does asset growth matter? Proxy for leverage?
- Why are currency returns priced by intermediaries' SDF?

Overall

- Impressive data work that contributes to a growing literature on the role of financial frictions for asset prices
- Given that contribution is empirical, more tests to address endogeneity of asset growth
- Relate the findings to the theory of financial frictions
- Exploit data on funding sources