

BANKING AND FINANCIAL FRAGILITY

Case Study: Fragility in the Life Insurance Industry

Professor Todd Keister
Rutgers University

May 2017

Traditional model of life insurance

- ▶ Insurer collects premiums for many years (hopefully)
 - ▶ then makes a large payout when policy holder dies
 - ▶ or a stream of payments in an annuity
- ▶ In the meantime, insurer must invest these funds
 - ▶ generally hold long-term assets, mostly low-risk bonds
- ▶ Industry is heavily regulated
 - ▶ restrictions on assets, capital requirements (similar to banks)
- ▶ ... and very large
 - ▶ held \$5.6 trillion in financial assets in 2010 (vs. \$15T for banks)
- ▶ Insurers generally have very high credit ratings
 - ▶ who would buy life insurance from a B-rated company?

-
- ▶ Given these high credit ratings, insurers can do other things
 - ▶ (think of AIG)
 - ▶ In particular, they can borrow at low interest rates
 - ▶ This allows them to profitably do financial intermediation
 - ▶ borrow at low rates, hold higher-yielding assets ⇒ Profit
 - ▶ Activity is most profitable if there is maturity transformation
 - ▶ borrow relatively short term (from money market funds, say)
 - ▶ hold long-term, less liquid bonds and securities (corporate bonds)
 - ▶ Key point:
 - ▶ works because the life insurer already has a good credit rating
-

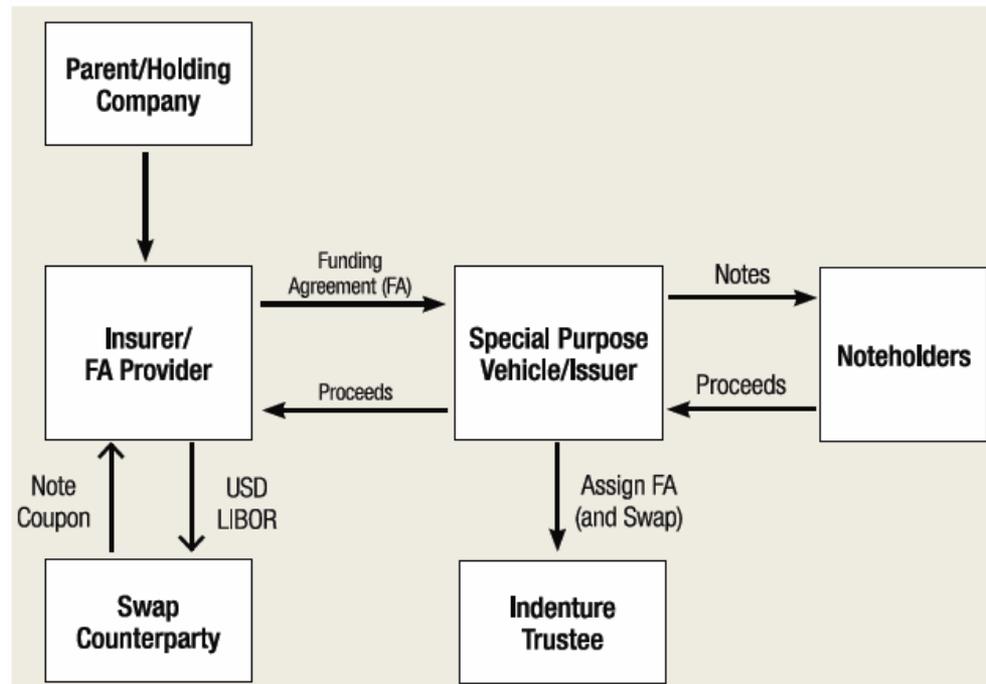
XFABN

- ▶ Insurance companies cannot offer demand deposits
 - ▶ so, in what form do they borrow?
- ▶ One way: “Extendible Funding Agreement-Backed Notes”
- ▶ Start with a long-term bond-like security
 - ▶ pays interest in regular coupon payments
 - ▶ repays the principle at the end
- ▶ At regular intervals, investor can decide to “convert”
 - ▶ often once per month
 - ▶ security converts to a short-term bond (perhaps 1 year)
 - ▶ if no notice given, the contract is automatically extended

-
- ▶ Economically, this is a one-year bond
 - ▶ ... that automatically “resets” every month (“evergreening”)
 - ▶ Designed to be attractive to money market mutual funds
 - ▶ they are required to hold highly-rated, short-maturity assets
 - ▶ here, the high rating comes from the insurance company
 - ▶ maturity of notes was often the maximum that MMMFs could hold
 - ▶ Where does the name XFABN come from?
 - ▶ extendable: (obvious)
 - ▶ funding agreement backed: guaranteed by the insurance company
 - ▶ note: ~bond

- ▶ Legal structure of these arrangements is complicated
 - ▶ aim to minimize capital requirements, and
 - ▶ take advantage of favorable tax treatment for insurance products
- ▶ Example:

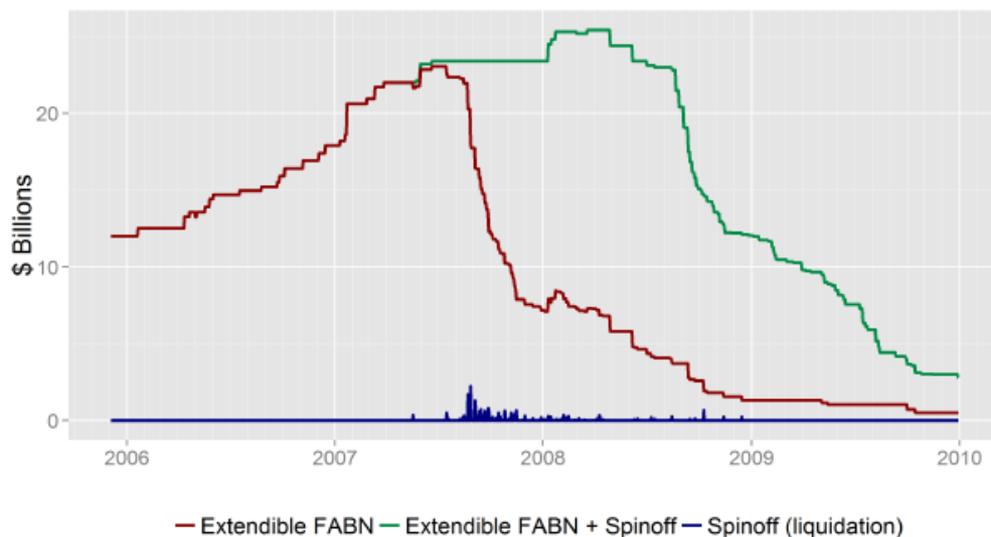
Figure 2: Typical FABS Structure



Runs

- ▶ If the assets held by the insurer are longer-term and illiquid
 - ▶ this arrangement may be subject to runs by investors
- ▶ Foley-Fisher et al. (2015) documents a run in 2007
 - ▶ total size of market before the run: \$23 billion
 - ▶ \$15 billion converted (withdrawn) in second half of 2007

Figure 4: Run on Extendible FABN



Source: Foley-Fisher et al. (2015)

What caused the run?

- ▶ Was this run driven by self-fulfilling beliefs?
- ▶ Or by changes in fundamentals?
 - ▶ that is, an increased likelihood of default by insurer
 - ▶ or a sudden need for funds by investors
- ▶ This question has been studied in many banking contexts
 - ▶ in general, very difficult to answer
 - ▶ we see a surge of withdrawals followed by failure of bank
 - ▶ would bank have failed anyway? Difficult to say
- ▶ Paper claims the unique structure of the XFABN market helps generate insight into this question
 - ▶ fixed election dates created a type of sequential service

-
- ▶ Authors collect data on all XFABN securities
 - ▶ have the original agreements, amounts issued, plus the dates and amounts of conversions
 - ▶ They regress current conversions at date t on:
 - ▶ a bunch of variables related to status of the insurance company, financial market conditions
 - ▶ conversions between dates t and $t + m$ (i.e., that occur before the investor's next election date)
 - ▶ Result: Current withdrawals are strongly positively correlated with future withdrawals
 - ▶ interpret result as evidence that investors' expectations about what other investors will do influenced their withdrawal decisions
 - ▶ a "self-fulfilling component" to the run

Main takeaway

- ▶ We say that much “banking” activity takes place outside of commercial banks
 - ▶ maturity transformation done by money market mutual funds, investment banks, etc.
- ▶ Our case studies emphasize how widespread this activity is
 - ▶ there were other, similar arrangements (Auction-Rate Securities for local government debt, etc.)
- ▶ This fact makes effective regulation very difficult
 - ▶ commercial banks are very visible and tightly regulated
 - ▶ but banking activity can be neither

Reference

“Self-fulfilling Runs: Evidence from the U.S. Life Insurance Industry” by N. Foley-Fisher, B. Narajabad, and S. Verani, Finance and Economics Discussion Series paper 2015-032, Federal Reserve Board, March 2015.

<http://www.federalreserve.gov/econresdata/feds/2015/files/2015032pap.pdf>