Financially Sophisticated Firms

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Summary

- **Question:** how do bond-issuing firms manage funding risk in segmented markets with preferred habitats?
- **Approach:** develop measure of funding risk from exogenous flows into mutual funds and insurance companies
- **Main findings:** decreases in bond funding risk (due to bonds being held by more stable investors) increase issuance and firm value
- **This discussion:**
  1. Unpacking the funding risk covariance matrix Ω
  2. Supply vs. demand
  3. Equilibrium implications

Comment #1: Unpacking Exogenous Flows

Covariance matrix of funding risk Ω is computed as follows

1. Get flows at the fund (or insurer) level:
   - f_{it}^{I} is flow into fund i of type I as **share of the fund's AUM**
2. For each group, get exogenous flows ($f_{it}^{I,\perp}$) from **equal-weighted** regression:

$$f_{it}^{I} = \beta \bar{R}_{it}^{I} + \alpha_i + \alpha_t + f_{it}^{I,\perp}$$

3. Take **AUM-weighted average** of exogenous flows:

$$F_t^I = \sum_i w_i f_{it}^{I,\perp}$$

4. Compute Ω as the covariance matrix of F_t^I

Simple Example: Granular IV

- Calculation seems in the spirit of Granular IV (Gabaix + Koijen)
- Basic idea: proportional shocks at larger funds matter more
- Imagine two fund managers randomly decide to change their holdings of Bond X
  - Fund A increases weight by 10%
  - Fund B decreases weight by 10%
- If Fund A is larger than Fund B, then these **idiosyncratic** shocks will create **aggregate** demand for Bond X (+$9B)

	Fund A	Fund B
AUM	$100B	$10B
Δ Weight on X (%)	+10%	-10%
Δ Weight on X (%), Removing EW Mean	+10%	-10%
Net Demand for Bond X ($)	+$10B	-$1B

Simple Example: Exogenous Flows

- But instead of portfolio weights, paper uses flows into funds
- Assume that Funds A and B have exactly the same portfolio/strategy
- Now shift $1B from Fund B to Fund A.
  - This is a larger proportional flow out of Fund B (-10%) than into Fund A (+1%).
  - After demeaning, get "idiosyncratic" prop. flows of +5.5% at A and -5.5% at B
  - Then we value-weight by AUM to get the aggregate exogenous flow:

$$F_t^I = w_A \times f_{At}^{I,\perp} + w_B \times f_{Bt}^{I,\perp}$$

$$= 0.91 \times 0.055 + 0.09 \times (-0.055) = 4.5\%$$

	Fund A	Fund B
AUM	$100B	$10B
Flow into Fund ($)	+$1B	-$1B
Flow into Fund as % of AUM ("f")	+1%	-10%
Flow as % of AUM, Demeaned ("$f^{\perp}$")	+5.5%	-5.5%
Value Weights	91%	9%

Simple Example: Exogenous Flows

- Another example: add $1B to Insurer B, no change at Insurer A
  - Proportional flows are +10% to Insurer B, 0% to Insurer A.
  - After demeaning, get "idiosyncratic" prop. flows of -5% at A and +5% at B
  - Then we value-weight by AUM to get the aggregate exogenous flow:

$$F_t^I = w_A \times f_{At}^{I,\perp} + w_B \times f_{Bt}^{I,\perp}$$
$$= 0.91 \times (-0.05) + 0.09 \times (0.05) = -4.1\%$$

- I find this counterintuitive

	Insurer A	Insurer B
AUM	$100B	$10B
Flow into Fund ($)	$0B	+$1B
Flow into Fund as % of AUM ("f")	0%	+10%
Flow as % of AUM, Demeaned ("$f^{\perp}$")	-5%	+5%
Value Weights	91%	9%

Comments on Exogenous Flows

- The problem is that the proportionality mechanism of GIV breaks down
  - Each percent change in holdings at a larger fund matters more
  - But each dollar of flows induces a smaller percent change in fund holdings
  - These should exactly cancel out, but don't in the paper
- Instead, by removing a time effect and then value weighting, we obtain aggregate exogenous flows F_t^I that
  - Are **positive** (**negative**) when there is a net shift of dollars to **larger** (**smaller**) funds
- My suggestion: don't absorb the time effect
  - If target is an aggregate time series, can't control for "everything" at time t
  - Instead, use (value-weighted) category-by-time fixed effect α_t^I as your F_t^I
  - Alternative: use an instrument

Comment #2: Supply vs. Demand

- Imagine a market with two funds:
  - **Fund I**: backed by an **inelastic** investor, demands Q_I no matter the price
  - **Fund E**: backed by an **elastic** investor, will trade unlimited quantity at p
- When the market issues more bonds we will observe
  - Net purchases by **Fund E**, financed by flows into the fund
  - No net purchases by **Fund I**, no need for new flows
- Absent demand shocks, exogenous flows larger at **Fund E** than at **Fund I**
  - According to paper's methodology (Ω), bonds held/traded by **Fund E** are riskier
  - But issuing to **Fund E** is risk-free! Seems like a tension in the definition.

Supply vs. Demand

- The issue is that flows can represent either:
  1. Shifts **of** the demand curve from **demand shocks**, which **create** funding risk
  2. Shifts **along** the demand curve from **supply shocks**, which **absorb** funding risk
- The paper is currently focusing on #1, but can't really rule out #2
  - Not taken care of by time effect when demand elasticities are heterogeneous
- Ideally, we would estimate a demand system using instruments to pin down the elasticities (probably too much here)
- Alternative idea: show us that your measure maps well into actual funding risk (conditional vol. of prices)
  - Seems like what firms should ultimately care about, measurable in the data

Comment #3: Equilibrium Effects

- Right now the paper's main results on funding risk are:
  - Firms increase issuance when funding risk is lower
  - Doing so adds value to the firm
- Makes sense holding prices fixed, but what about GE?
  - Bonds with **higher funding risk** should have **higher prices** to compensate firms
- Trade-off between price and funding risk opens many interesting doors
  - How much are firms willing to pay to avoid funding risk?
  - Which firms sort into riskier vs. less risky issuances?
  - Do firms issue multiple bond types at the same time to diversify?

Conclusion

- Interesting paper taking funding risk in bond markets seriously
- Questions about computation of quantity of funding risk Ω
  - Current approach absorbing a time effect has non-intuitive properties
  - May be capturing supply accommodation as well as demand shocks
- Main suggestions:
  - Use the (VW) time effect (instead of absorbing it), or instrument if possible
  - Show more direct evidence on conditional volatility of bond prices
- Many interesting questions about funding risk management to explore
  - Trade-off with bond price, motive for multiple issuances, etc.