Discussion of “The Emergence of Market Structure” by Farboodi, Jarosch, and Shimer

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A Model of Financial Intermediation with Search Frictions

- A unit mass of individuals trading a single asset (net supply of 1/2) over continuous time
- Traders obtain (heterogenous) flow utilities of holding the asset
- Asset valuations switch randomly over time, maintaining gains from trade

- Trading friction: trade can only occur if traders run into one another.
- Highly stylized model of trade in financial markets: random search.
- Traders can have heterogenous contact rates: conditional on running into someone, it is more likely to run into a faster trader.
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Trade Frictions and Random Search in OTC Markets

- Tehran’s black currency market (December 2017)
Key Insights

• Key innovation: traders can invest in acquiring contact rate $\lambda$ at some cost $C(\lambda)$.

• Exogenous distribution of contact rates $F(\lambda)$.
  • Faster traders “intermediate” the asset: their trading decisions are more detached from the asset’s fundamentals.
  • Purchase the asset from slower traders, even if they do not value the asset, for the option value of selling it to their future counterparties.

• Allow for endogenous choice of contact rates:
  • If $C(\lambda)$ is continuous, $F(\lambda)$ has no (intermediate) mass points.
  • Despite being ex ante identical, there will be dispersion in contact rates.
  • Some traders become intermediaries endogenously, exactly with the hope of collecting the intermediation rents. → emergence of market structure
Main Results

Proposition

*Suppose traders can choose any contact rate in \([0, \bar{\lambda}]\) and \(C(\lambda) = c\lambda\). Then,

\[
\lim_{\lambda \to \infty} \lim_{\bar{\lambda} \to \lambda} F(\lambda) < 1.
\]

Furthermore, \(F(\lambda)\) converges to a Pareto distribution as \(\bar{\lambda} \to \infty\).*

• Interpretation:
  • There are middlemen with very high contact rates.
  • These middlemen intermediate a large volume of trade.
  • Distribution of trading rates matches the trading volume in various OTC markets.

• Model’s prediction: the intermediaries are the ones with the highest contact rates.
Comment: What is Speed/Contact Rate?

- The contact rate explicitly modeled as the rate at which $i$ runs into other traders.

- What is the counterpart of this in the real world? (aside from the black market in Tehran)

- It does not seem to correspond to the speed at which I can execute trades.
Comment: What is Speed/Contact Rate?

- Volume of trade in the FX market in 2017:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Institution</th>
<th>Market Share</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Citibank</td>
<td>10.74%</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>JP Morgan</td>
<td>10.34%</td>
<td>21.08%</td>
</tr>
<tr>
<td>3</td>
<td>UBS</td>
<td>7.56%</td>
<td>28.64%</td>
</tr>
<tr>
<td>4</td>
<td>Bank of America</td>
<td>6.73%</td>
<td>35.37%</td>
</tr>
<tr>
<td>5</td>
<td>Deutsche Bank</td>
<td>5.68%</td>
<td>41.05%</td>
</tr>
<tr>
<td>6</td>
<td>HSBC</td>
<td>4.99%</td>
<td>46.04%</td>
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<tr>
<td>7</td>
<td>Barclays</td>
<td>4.69%</td>
<td>50.73%</td>
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<tr>
<td>8</td>
<td>Goldman Sachs</td>
<td>4.43%</td>
<td>55.16%</td>
</tr>
<tr>
<td>9</td>
<td>Standard Chartered</td>
<td>4.26%</td>
<td>59.42%</td>
</tr>
<tr>
<td>10</td>
<td>BNP Paribas</td>
<td>3.73%</td>
<td>63.15%</td>
</tr>
</tbody>
</table>

Source: Euromoney FX Survey 2017

- The FX market is highly **intermediated** and **concentrated** → these are the middlemen!
- But they are not the institutions that trade at the highest frequencies.
Comment: What is Speed/Contact Rate?

- If \( \lambda \) is not the speed at which I can execute trades, then what is it?
- Put differently, how can one interpret the previous table in view of the model?

Paper’s suggestions:

- faster communication technologies
- better visibility through location choices or advertisement
- relationships with more counterparties

In other words, \( \lambda \) seems to be a reduced-form parameter capturing trading frictions.

One can imagine that similar insights would hold if, instead of investing in speed, traders can invest in

- carrying a higher inventory around
- lowering transaction costs per trade
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Summary

- Theoretically beautiful framework of search and matching frictions in OTC markets.

- Obviously highly stylized, but with sharp insights:
  - faster traders become intermediaries.
  - heterogeneity in speed emerges endogenously.

- Comment: How should one think about $\lambda$ in the real world?
  - A narrow interpretation (in the sense of the model) does not seem to match the real world.
  - But a broad interpretation ("higher $\lambda$ is equivalent to having a lower opportunity cost of finding counterparties") runs the risk of becoming a tautology.