Evaluation of the effects of too-big-to-fail reforms

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Financial Stability Board
September 2020
# Inefficient Banking Systems Increase Fragility

<table>
<thead>
<tr>
<th>Country</th>
<th>Capital Ratio</th>
<th>Profitability</th>
<th>Asset Quality</th>
<th>Costs</th>
<th>Fragmentation</th>
<th>Diversification</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bank Capital to Assets Ratio (%)</td>
<td>RoA, bps</td>
<td>Gross NPL%</td>
<td>Bank Branches per 100k People</td>
<td>Number of Credit Institutions per 100k People</td>
<td>Bank Financing as % of Total Credit to Private Corporates</td>
<td>Bank Total Assets as % National GDP</td>
</tr>
<tr>
<td>US</td>
<td>11.7</td>
<td>120.0</td>
<td>0.9</td>
<td>30.9</td>
<td>1.6</td>
<td>34%</td>
<td>94%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>6.2</td>
<td>47.3</td>
<td>1.9</td>
<td>11.0</td>
<td>0.5</td>
<td>44%</td>
<td>328%</td>
</tr>
<tr>
<td>Finland</td>
<td>9.3</td>
<td>32.4</td>
<td>1.4</td>
<td>3.1</td>
<td>4.3</td>
<td>59%</td>
<td>305%</td>
</tr>
<tr>
<td>UK</td>
<td>6.8</td>
<td>28.0</td>
<td>1.1</td>
<td>25.1</td>
<td>0.6</td>
<td>70%</td>
<td>368%</td>
</tr>
<tr>
<td>Ireland</td>
<td>14.9</td>
<td>50.5</td>
<td>5.7</td>
<td>20.5</td>
<td>6.2</td>
<td>19%</td>
<td>391%</td>
</tr>
<tr>
<td>France</td>
<td>6.5</td>
<td>39.7</td>
<td>2.7</td>
<td>34.9</td>
<td>0.6</td>
<td>53%</td>
<td>440%</td>
</tr>
<tr>
<td>Spain</td>
<td>7.6</td>
<td>51.3</td>
<td>3.2</td>
<td>55.1</td>
<td>0.4</td>
<td>68%</td>
<td>235%</td>
</tr>
<tr>
<td>Germany</td>
<td>6.5</td>
<td>15.6</td>
<td>1.2</td>
<td>11.1</td>
<td>1.8</td>
<td>78%</td>
<td>264%</td>
</tr>
<tr>
<td>Italy</td>
<td>6.3</td>
<td>38.1</td>
<td>8.4</td>
<td>40.9</td>
<td>0.8</td>
<td>74%</td>
<td>218%</td>
</tr>
<tr>
<td>Portugal</td>
<td>7.0</td>
<td>45.1</td>
<td>9.4</td>
<td>36.0</td>
<td>1.4</td>
<td>65%</td>
<td>196%</td>
</tr>
<tr>
<td>Australia</td>
<td>6.9</td>
<td>84.0</td>
<td>0.9</td>
<td>28.2</td>
<td>0.5</td>
<td>50%</td>
<td>273%</td>
</tr>
<tr>
<td>Canada</td>
<td>5.3</td>
<td>88.6</td>
<td>0.4</td>
<td>20.0</td>
<td>0.3</td>
<td>42%</td>
<td>311%</td>
</tr>
</tbody>
</table>

Source: Algebris (UK) Limited, ECB, BoE, World Bank, OECD, BIS
Historical Bank % Losses During the GFC, as % of Balance Sheet

Losses can Exceed 10% of Assets

Source: Algebris (UK) Limited, RBS Credit Strategy, Bloomberg, company filings

AIB  Anglo  NBG  Banki  Amag  Monte  HBOS  ML  Bol  WaM  B&B  Wach  Nrock  SNS  UBS  Dexia

Losses as % initial loans  Losses as % initial assets

0%  5%  10%  15%  20%
Low Volatility and Asset Bubbles
Forward Guidance and Short Volatility: A Feedback Loop

Source: Algebris (UK) Limited

 QE Forward Guidance

Low Yields

Selling Volatility Is Profitable

Dealer Delta-Hedging, Dealers Sell Protection

Implied Volatility Declines

Lower Risk Premium Lower Realised Vol

Realised Volatility Rises

Unwinding with Dealers, Dealers Buy Protection

Implied Volatility Rises

Volatility Sellers Lose Money

Higher Real Yields

QE Exit Inflation Returns

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Markets: The New Too-Big-To-Fail
VIX Pre and Post QE

Length of High Vol Periods

- Periods during which VIX>20
- VIX Index

Proportion of Days When VIX Falls in the Range

- Longer periods of low volatility...
- ...but also a fatter tail of very high volatility

Source: Algebris (UK) Limited, Bloomberg

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Risk-free Assets: No Longer Balancing Portfolios
2-Day Rolling Correlations – 10 Minute Intervals

Equities used: SX5E, SX7E, SPX, EEM, FTSE MIB, UKX and BKX; Rates used: OE1, RX1, TY1; Credit used: Xover, CDX HY, Senior Fin and EM local sovereign.
Source: Algebris (UK) Limited, Bloomberg
Markets: Increased Fragility
The Passive Investing Feedback Loop

Passive & Index investing increased to 50% of the US Equity Market

ETF usage rises as market volatility increases
(ETF Volumes as a % of the Total Tape, by Average Monthly VIX Levels)

Source: Algebris (UK) Limited, GS Research
Markets: Increased Fragility
ETF Selloff During the Covid-19 Crisis

23 March 2020: The Federal Reserve established the Secondary Market Corporate Credit Facility (SMCCF) to support market liquidity by purchasing corp. bonds of US IG firms and **US-listed ETFs** whose investment objective is to provide broad exposure to the market for US corp. bonds, appointing Blackrock as investment manager for ETF purchases.

Source: Algebris (UK) Limited. Bloomberg. Data as of 02.09.2020
Note: EMB US - iShares J.P. Morgan USD Emerging Markets Bond ETF (EM Hard ccy); JNK US - SPDR Bloomberg Barclays High Yield Bond ETF (US HY); AT1 LN - Invesco AT1 Capital Bond UCITS ETF (AT1 ETF); IHYG LN - iShares EUR High Yield Corp Bond UCITS ETF (EUR HY); SEMAL IM - iShares JP Morgan EM Local Government Bond UCITS ETF (EM Local ccy)
## Policy and Markets: Time Inconsistency and Fragility

Fragility is Common, Anti-Fragility is Rare

<table>
<thead>
<tr>
<th></th>
<th>Fragile</th>
<th>Robust</th>
<th>Anti-Fragile</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medicine</strong></td>
<td>Anaesthesia</td>
<td>Vaccine</td>
<td>Mithridatism</td>
</tr>
<tr>
<td><strong>Pension System</strong></td>
<td>Defined Benefits</td>
<td>Defined Contributions</td>
<td>Social Shock Absorbers</td>
</tr>
<tr>
<td><strong>Technology</strong></td>
<td>Centralised Hard Drive</td>
<td>Underground Storage</td>
<td>Cloud Storage</td>
</tr>
<tr>
<td><strong>Mythology</strong></td>
<td>Damocles</td>
<td>Ulysses</td>
<td>Hydra</td>
</tr>
<tr>
<td><strong>Nature</strong></td>
<td>Dinosaurs</td>
<td>Land Turtle</td>
<td>Ant Colony/Bacteria</td>
</tr>
<tr>
<td><strong>Objects</strong></td>
<td>Tea Set</td>
<td>Anvil</td>
<td>Spring</td>
</tr>
<tr>
<td><strong>Financial Markets</strong></td>
<td>Passive Investing/Herding</td>
<td>Active Management</td>
<td>Tail Risk Strategies</td>
</tr>
<tr>
<td></td>
<td>Financial Engineering/Complexity</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Monetary Policy</strong></td>
<td>Forward Guidance</td>
<td>Rule-Based Approach</td>
<td>Macro-prudential Policy</td>
</tr>
<tr>
<td><strong>Capital Structure</strong></td>
<td>Debt</td>
<td>Equity</td>
<td>AT1</td>
</tr>
<tr>
<td><strong>Sovereign Debt</strong></td>
<td>Hard Currency External Debt</td>
<td>Domestic Currency Debt</td>
<td>Growth-Linked Debt</td>
</tr>
<tr>
<td><strong>Economic Agents</strong></td>
<td>Politicians</td>
<td>Regulators</td>
<td>Long-Term/Contrarian Investors</td>
</tr>
<tr>
<td><strong>Government Structure</strong></td>
<td>Eurozone</td>
<td>Singapore</td>
<td>Switzerland</td>
</tr>
</tbody>
</table>

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