Predicting and preventing financial crisis- where do we stand?¹

Boris Hofmann,

Bank for International Settlements

¹ This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.
Predicting and preventing financial crises: Where do we stand?

Boris Hofmann (BIS)

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Outline

- Predicting financial crises
- Preventing financial crises
- Special challenges for EMEs
Aggregate crisis indicators...
...with predictive power at different horizons (AUC)

<table>
<thead>
<tr>
<th>EWI</th>
<th>Horizon (quarters)</th>
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<tbody>
<tr>
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<tr>
<td>Credit-to-GDP gap</td>
<td>0.80*</td>
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<tr>
<td>Total DSR</td>
<td><strong>0.84</strong>*</td>
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<tr>
<td>Property price</td>
<td>0.43</td>
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<td>Household DSR</td>
<td>0.82*</td>
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<tr>
<td>Household credit-to-GDP gap</td>
<td>0.60</td>
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<td>Foreign currency debt to GDP</td>
<td>0.73*</td>
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<tr>
<td>Cross-border claims to GDP</td>
<td>0.75*</td>
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</table>

Source: Aldasoro et al (2018)
Micro data and financial crisis prediction

- Micro data can be used to predict risk of individual bank distress (Lang et al (2018))
  - Relate observed cases of bank distress to bank-level data as well as aggregate banking sector and macro-financial variables
- Aggregation of bank distress risk yields measure of systemic risk
  - Weighted average of bank distress probabilities

Source: Lang et al (2018)
Preventing financial crises

- Macroprudential policy
  - Countercyclical RR, LTV/DTI caps
  - Address financial imbalances in a targeted manner
    - Less collateral damage, but more prone to circumvention
    - Macropru enhances crisis resilience (BIS (2018))

- Monetary policy
  - Tighter monetary policy to lean against financial imbalances
  - “Gets into all of the cracks”
  - But “collateral damage” on real economy
    - Credit over GDP might rise
    - Debt service burden might rise
Macro-financial impact of monetary tightening: Panel evidence

Source: Hofmann and Peersman (2017)
The role of debt levels

Source: Hofmann and Peersman (2017)
Evidence from micro data

- Microdata facilitate the identification of loan demand and supply factors and hence of the effects of macropru and monetary policy

- Analysis of the effects of macropru and monetary policy using bank-loan data from credit registries in Latin American countries (meta-analysis in Gambacorta and Murcia Pabon (2017))
  - Macropru and monetary policy are complementary: greater effectiveness when both policies push in the same direction
Special challenges for EMEs

- Dependence on foreign funding and less developed financial systems raise vulnerability to global financial factors

- Borrowing in foreign currency or in local currency from foreign lenders gives rise to a financial channel of the exchange rate
  - Capital inflows appreciate the exchange rate, which reduces credit risk in the presence of currency mismatches
  - Mutually reinforcing feedback loop between capital inflows and exchange rate appreciation
  - BIS AER 2019 special chapter on monetary policy frameworks in EMEs
FX intervention enhances resilience: Aggregate evidence

Source: BIS (2019)
Impact of FXI on new corporate loans in Colombia

Size of impulse normalised to 30 million USD

Impact of FXI on exchange rate and capital flows in Colombia

Size of impulse normalised to 30 million USD

## FX intervention impact depending on bank characteristics

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<td>Bank Size</td>
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<tr>
<td>FXI*Capitalisation</td>
<td>0.10***</td>
<td>0.16***</td>
<td>0.19**</td>
<td>0.25**</td>
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<td>(0.034)</td>
<td>(0.55)</td>
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<td>FXI*Bank Size</td>
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<td>(0.036)</td>
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References


BIS (2019): “Monetary policy frameworks in EMEs: Inflation targeting, the exchange rate and financial stability”, Annual Economic Report 2019


Hofmann, B and G Peersman (2017): “Is there a debt service channel of monetary transmission?”, *BIS Quarterly Review*, December 2017
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