

Original Sin Redux: A Model Based Evaluation

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presentation

Motivation - No more concern about original sin?

- **“Original sin”** (borrow from abroad in foreign currency)
- historically, a big issue for EMs (e.g. Asian financial crisis, Argentina default etc)
- vulnerable to currency mismatch and capital flow reversal

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- Escape from “Original Sin”: much more sovereign external LC debt

LC share	2005	2018
Brazil	5% of total external debt	40% of total external debt
Mexico	5% of total external debt	35% of total external debt

- Significant progress! Is the problem solved?

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- Yield \uparrow , LC depreciates. Yield \downarrow , LC appreciates \rightarrow double gain or double loss for LC investors

Executive summary

- Demonstrate “Original sin redux” in a two country NKDSGE model (e.g. Banerjee, Devereux, Lombardo 2016)
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- Degree of **foreign** lender financial friction is the key
 - If foreign lenders are **NOT constrained**
local currency external debt → original sin redemption (conventional wisdom)
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- Policy implications:
 1. Domestic investor base helps overcome vulnerabilities from external borrowing
 2. FX intervention can mitigate the implications of the original sin and its redux
- Empirical evidence to support the claim on global financial friction and similarity OS vs OSR

Outline

- 1) Summary of empirical results
- 2) Diagrammatic model setup
- 3) Demonstrate key friction + policy: domestic investor base and FX intervention

Three sets of empirical evidence

1. Motivation: Fall of “original sin”:

More local currency external debt

Also true for corporate sector in EMs via “indirect bank credit”

(e.g. corporate loan by HSBC Mexico city but source from HSBC London)

2. Key friction: Global financial friction matters for LC spreads

Panel regression with interactions shows:

- i. LC spreads ↓ when foreign participation of LC debt is high
- ii. LC spreads ↑ when global friction is high (proxied by bank leverage or VIX)
- iii. LC spreads ↑ when global friction and foreign participation are high
→ double edged sword

3. Validation: Original sin and redux have similar dynamics

Panel regression with interactions shows, upon a foreign monetary tightening:

- i. Higher FC external debt → larger contraction
- ii. Higher LC external debt → larger contraction (smaller in magnitude)

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Panel regression with interactions shows:

	LHS: LC spreads
foreign participation of LC debt	↓
global friction	↑
foreign participation of LC debt × global friction	↑

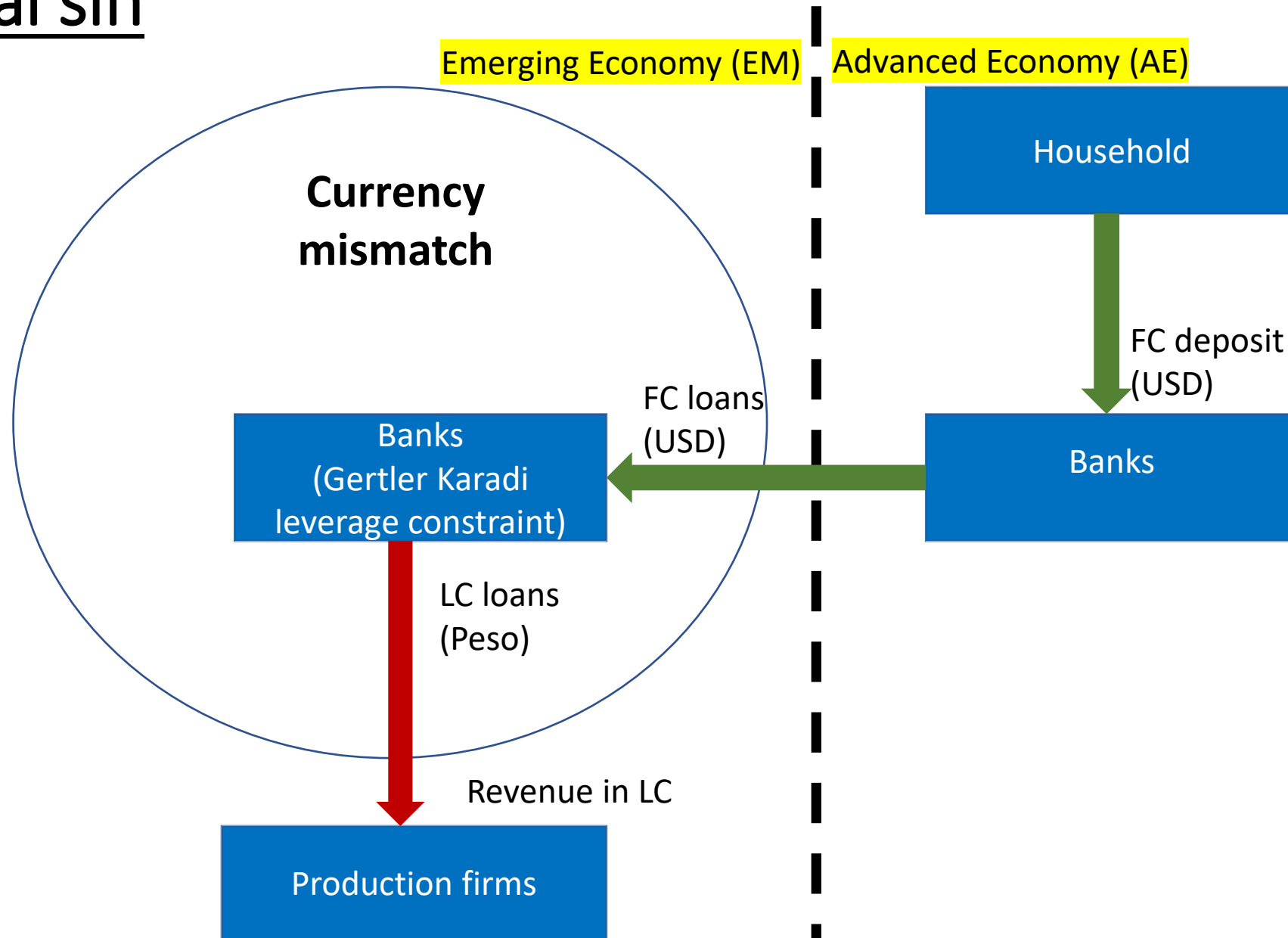
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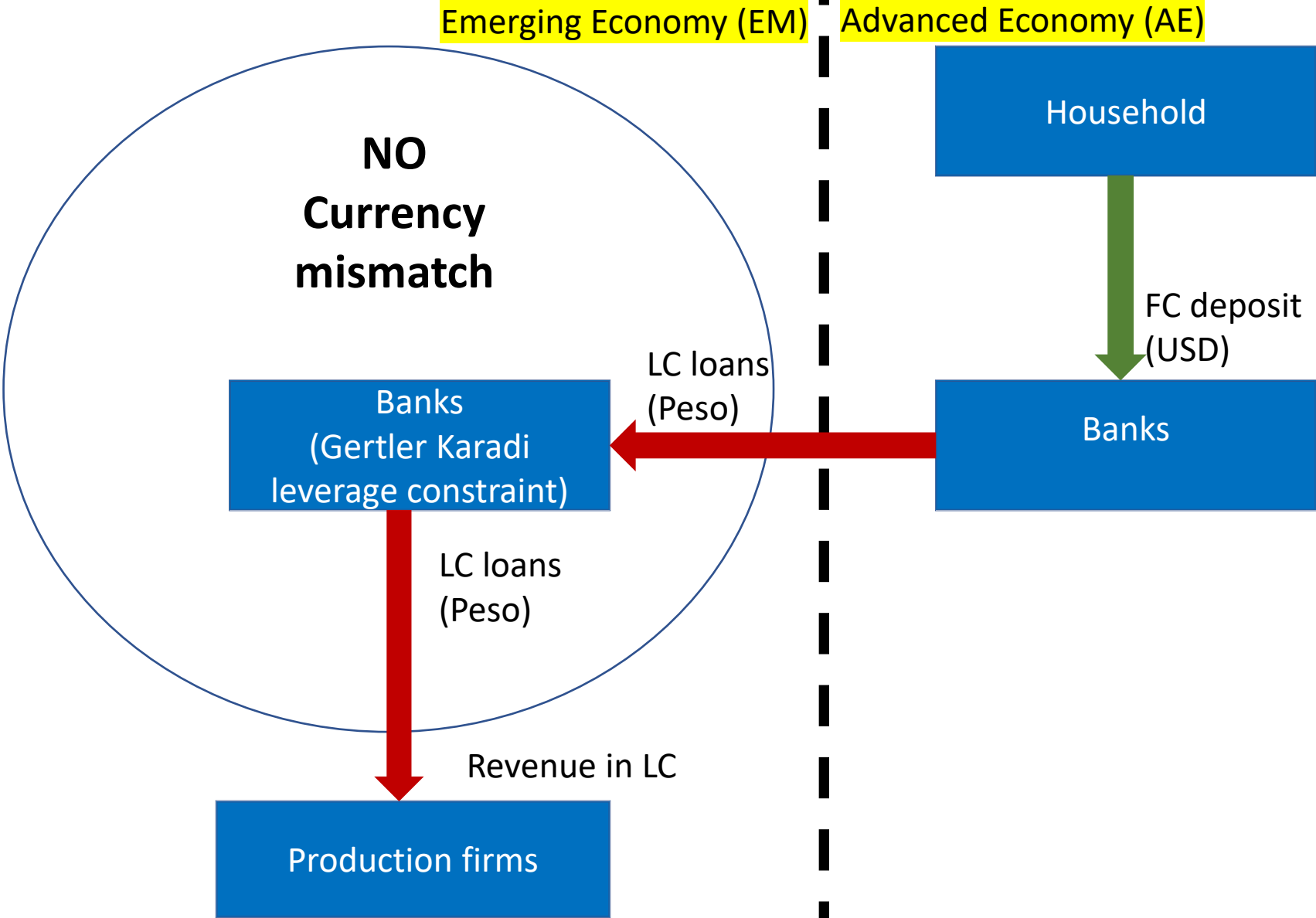
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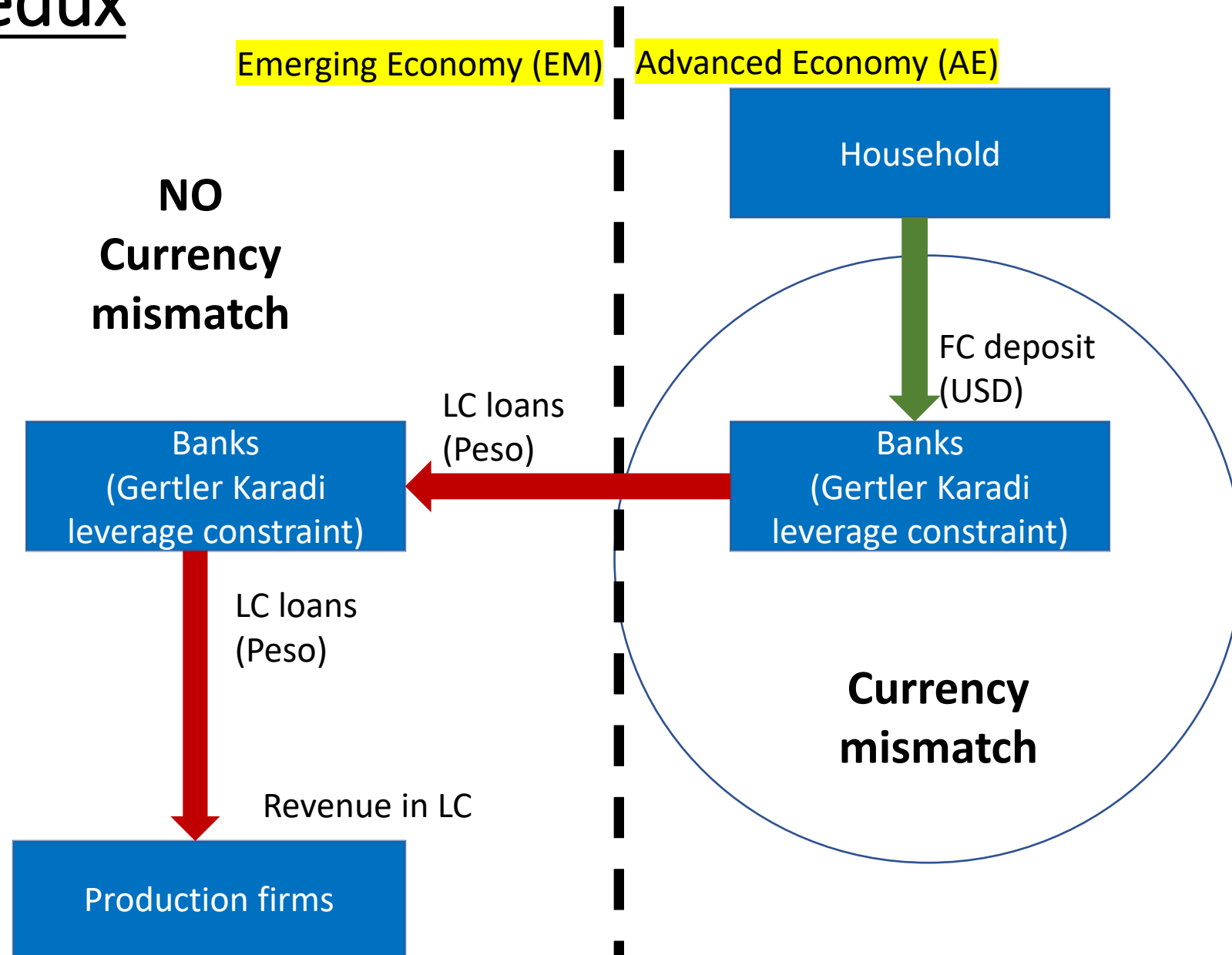
Original sin



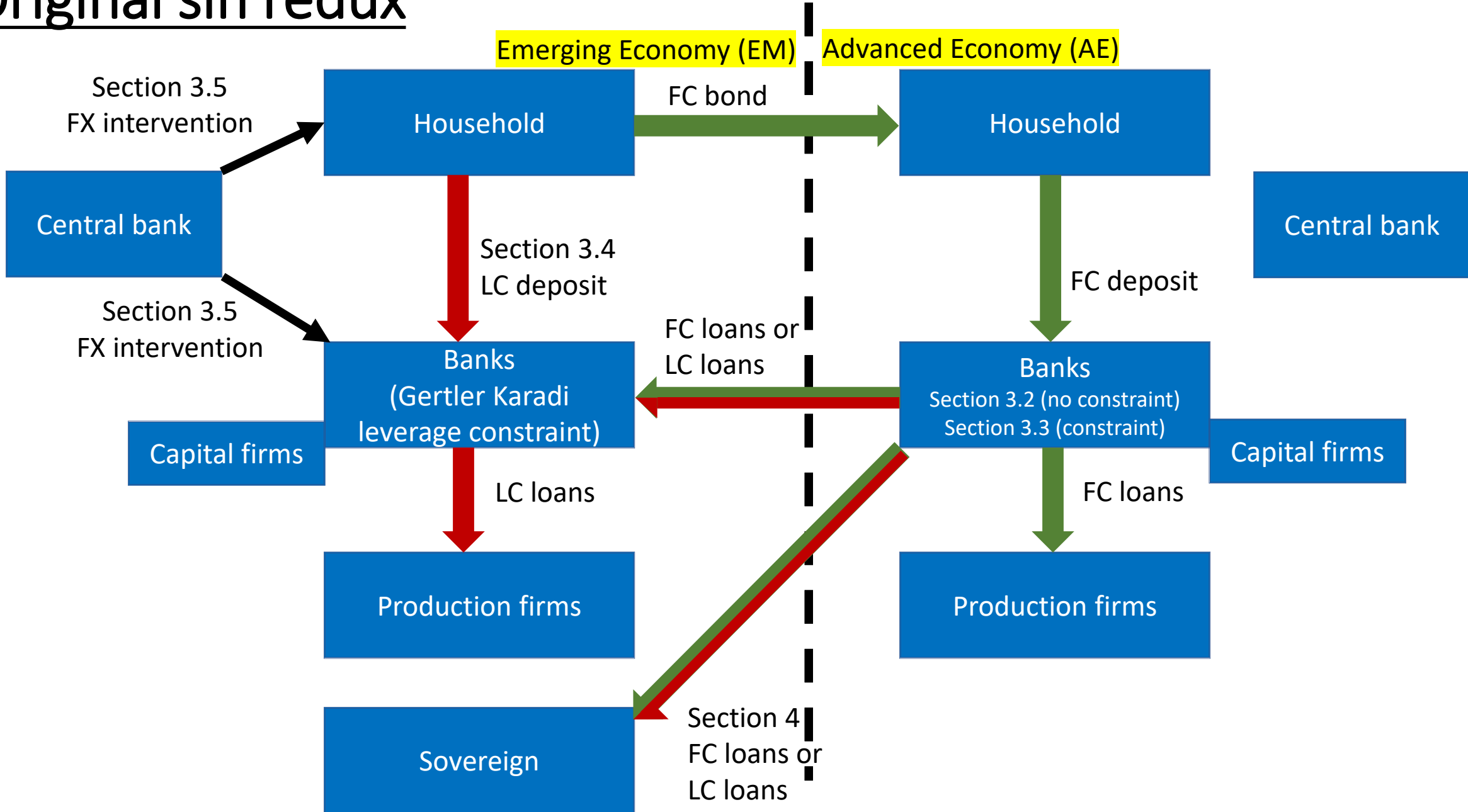
Original sin redemption



Original sin redux



Original sin redux



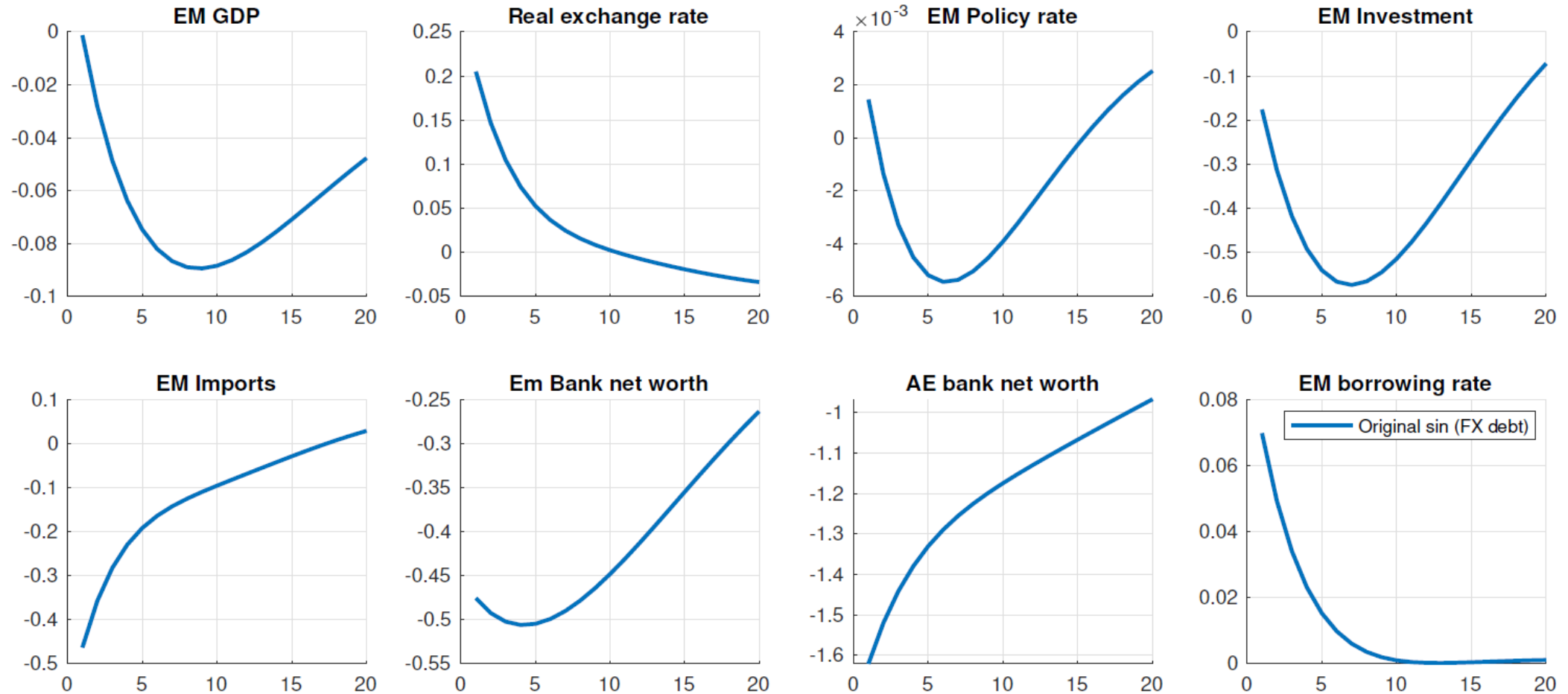
Model IRF study

- Impulse of an AE monetary tightening (100 basis point shock)
- Compare between
original sin (foreign currency debt) vs **original sin redux** (local currency debt)

Four cases:

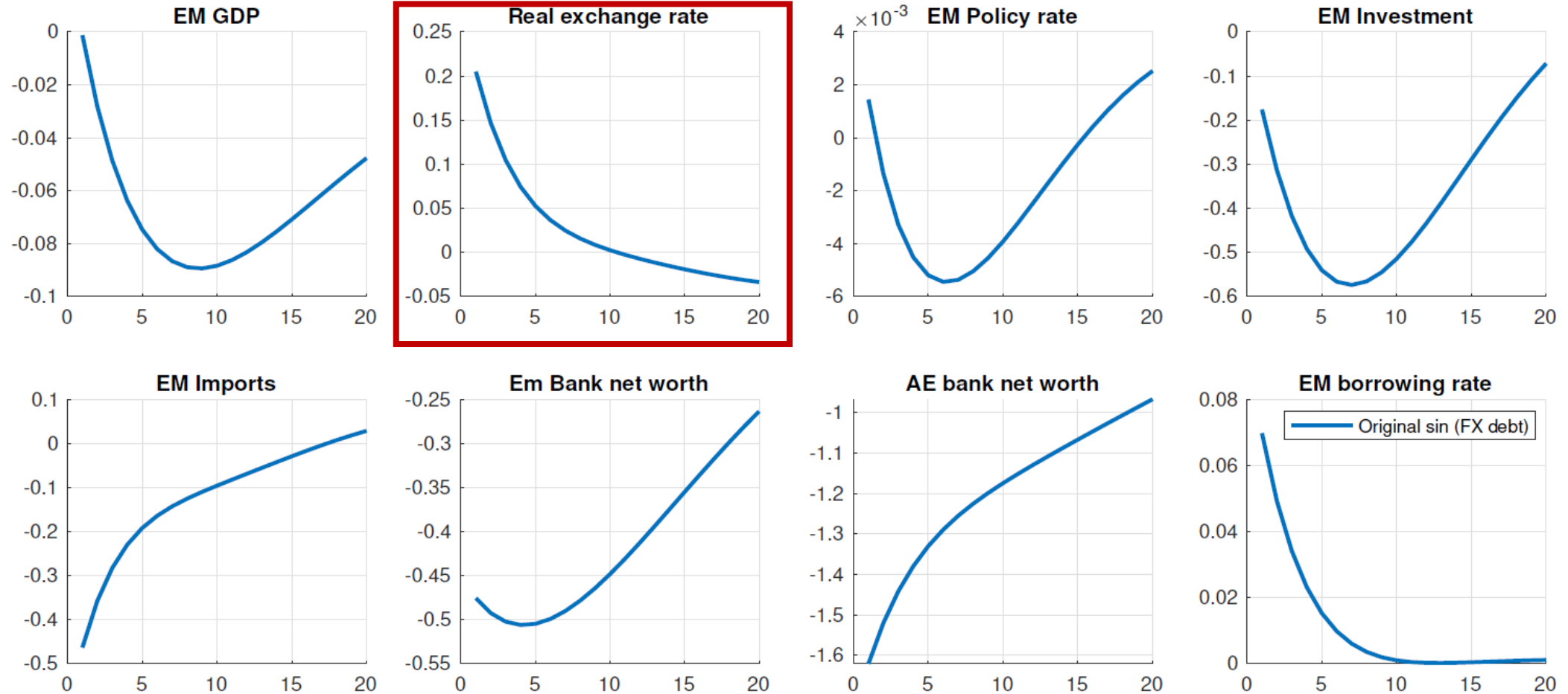
1. No AE financial friction
2. With AE financial friction
3. Domestic deposit
4. FX intervention

Case 1: no AE financial friction



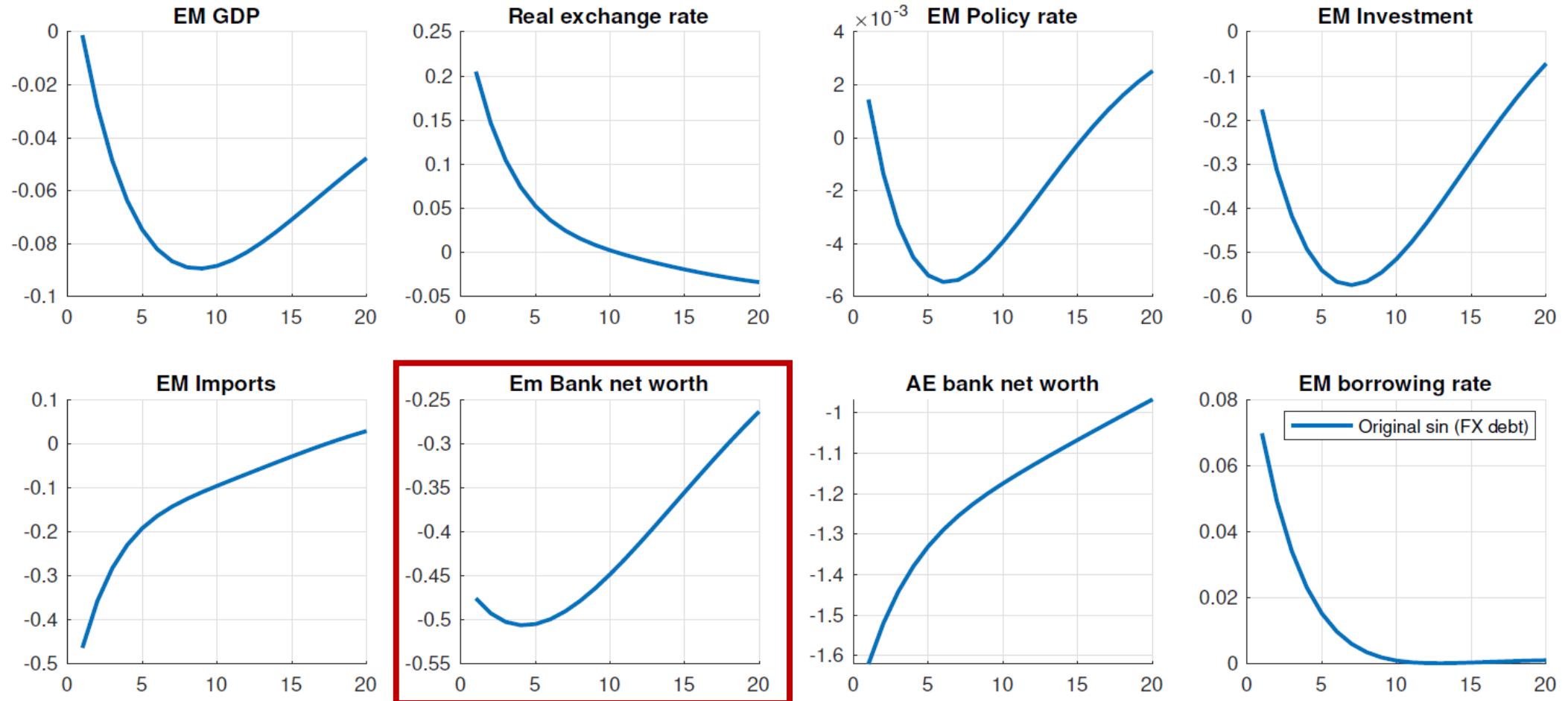
- Impulse to an AE monetary tightening
- FC debt \rightarrow shape contraction of output – **original sin**

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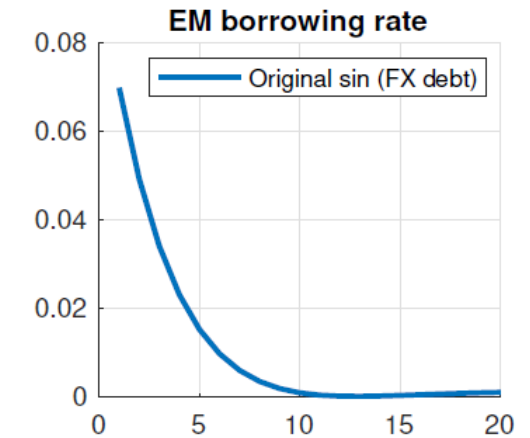
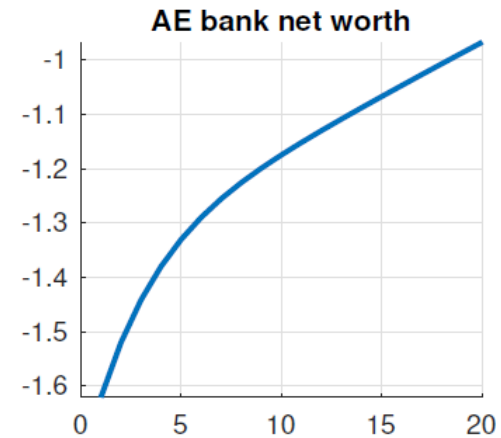
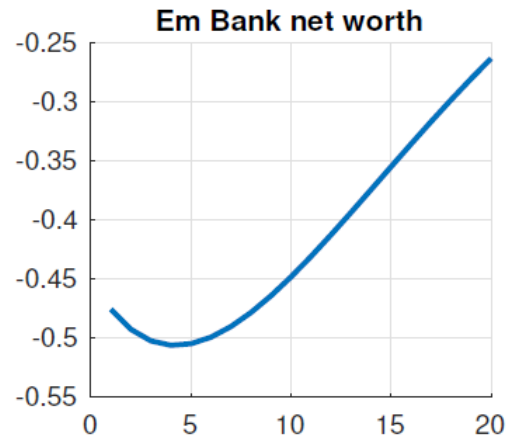
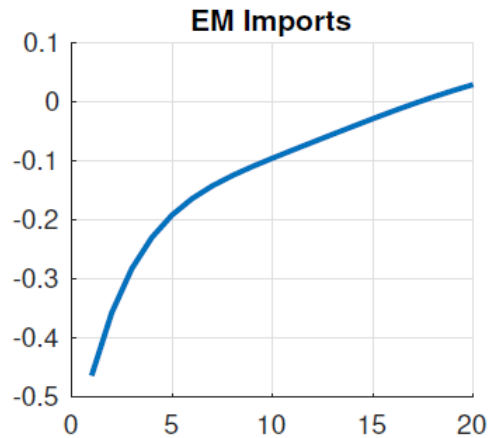
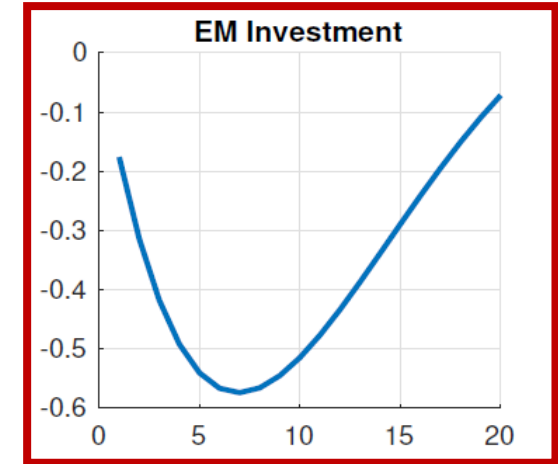
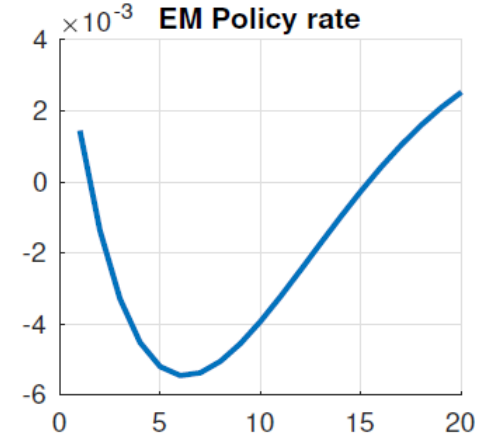
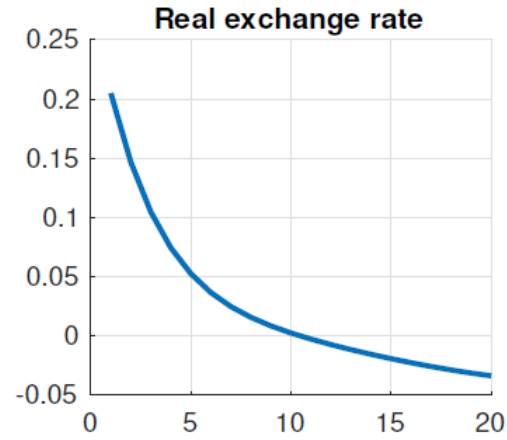
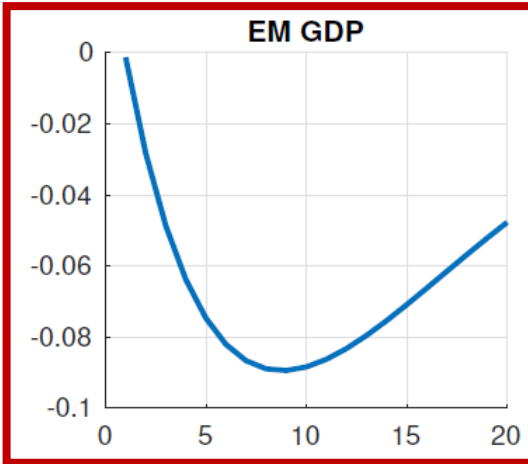
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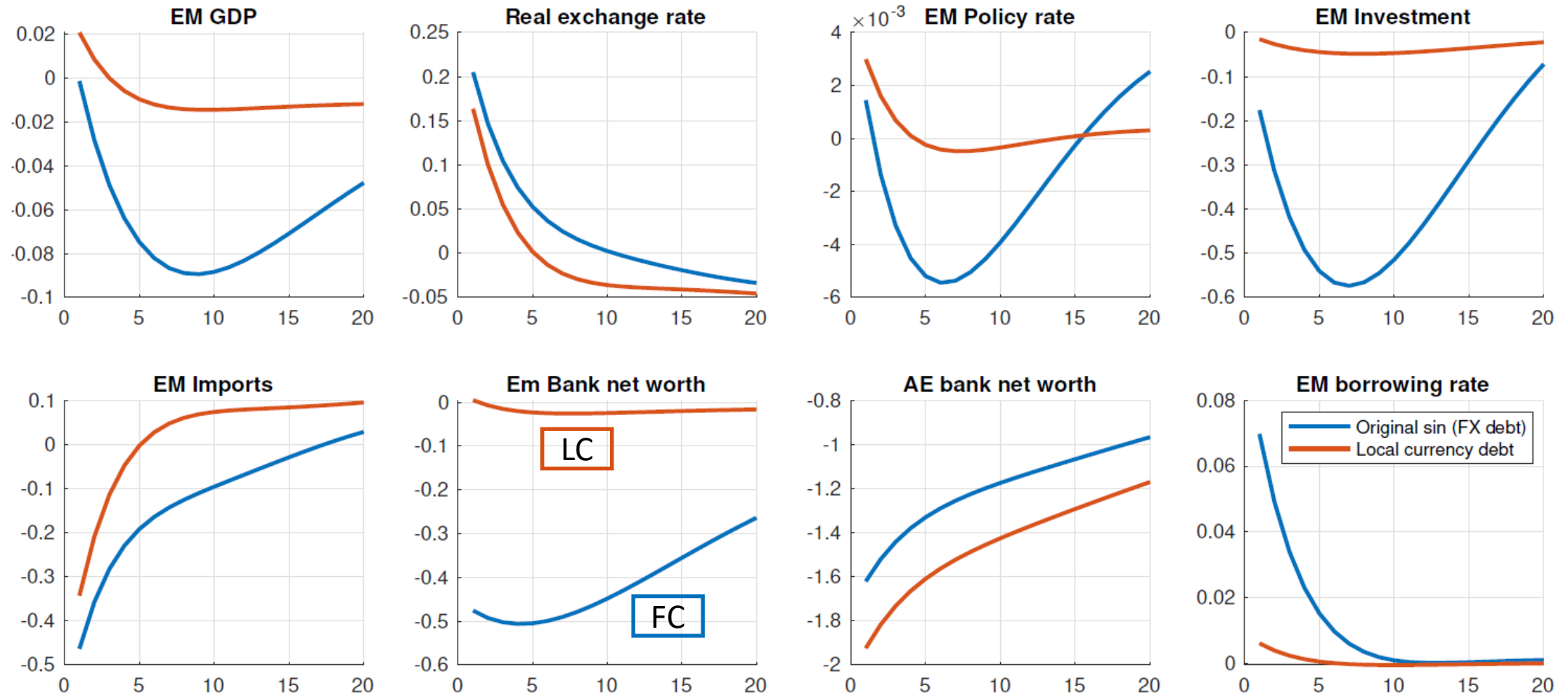
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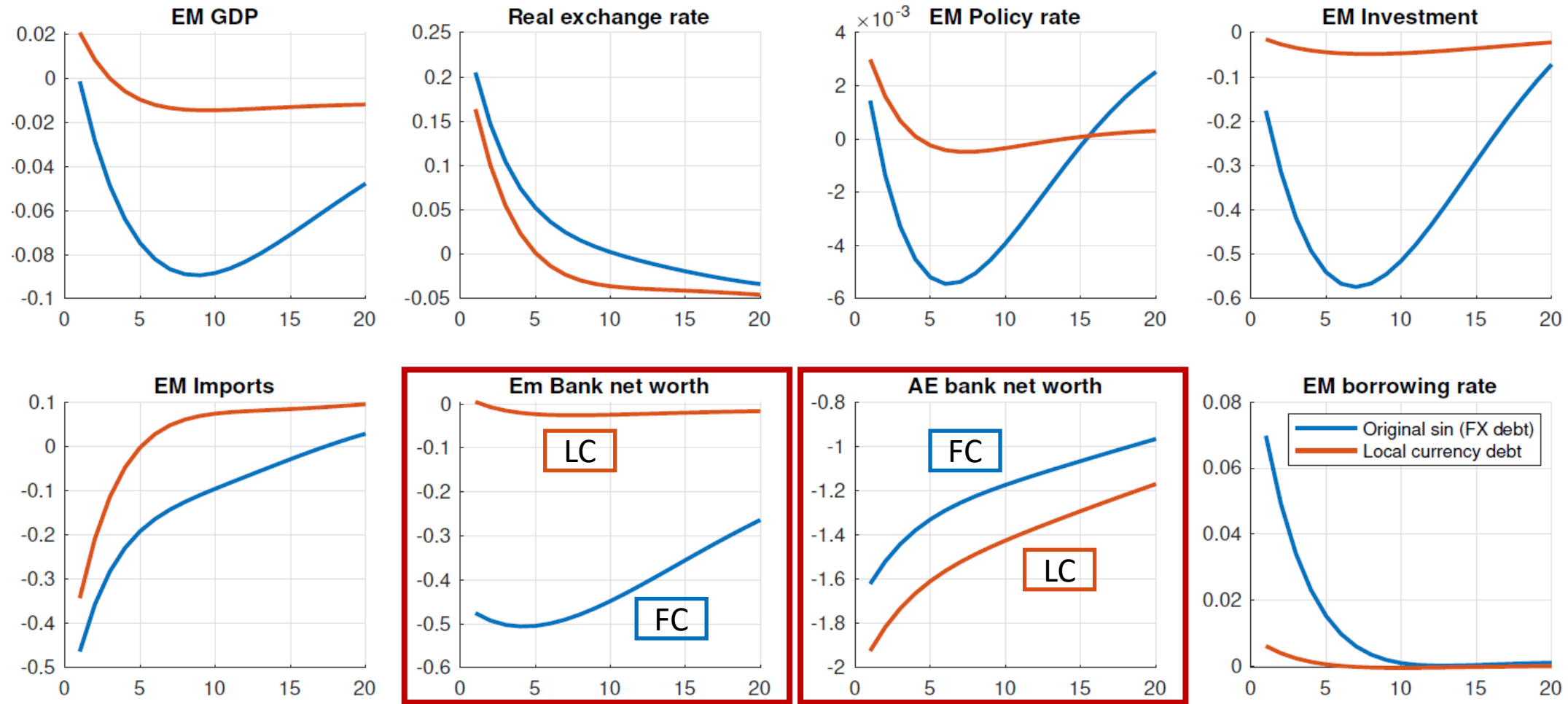
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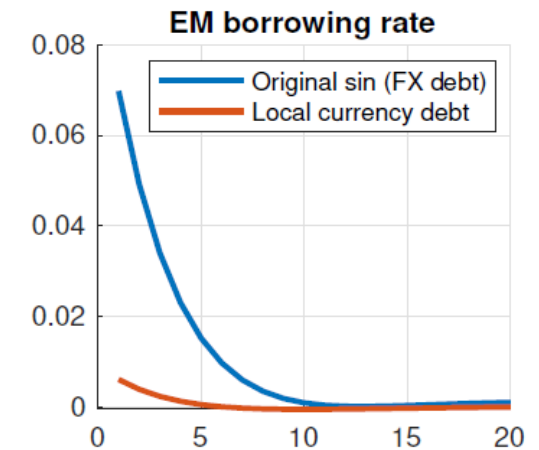
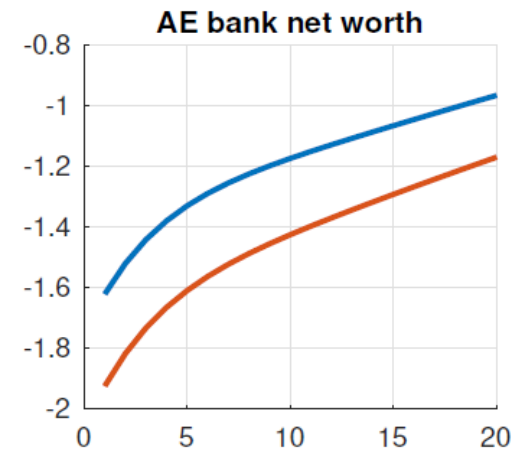
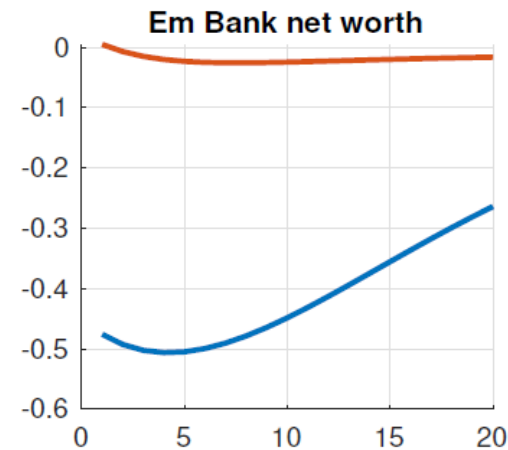
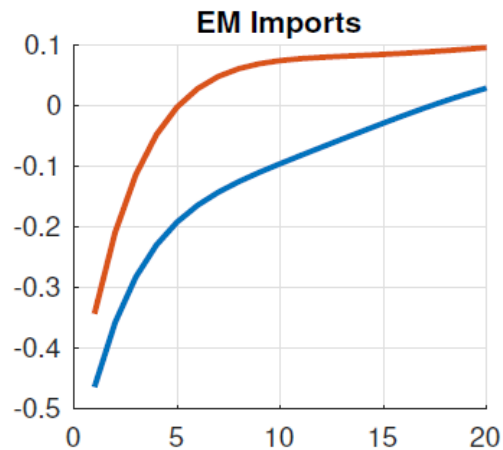
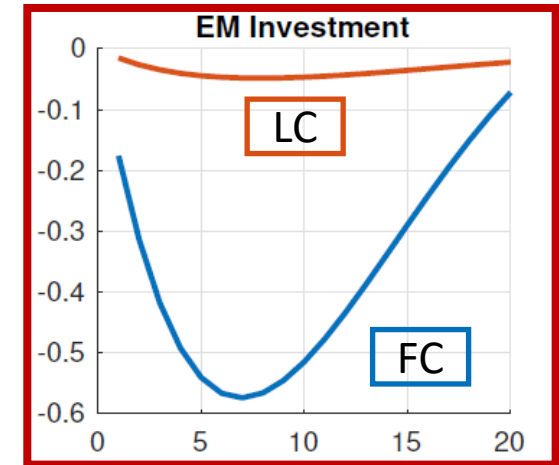
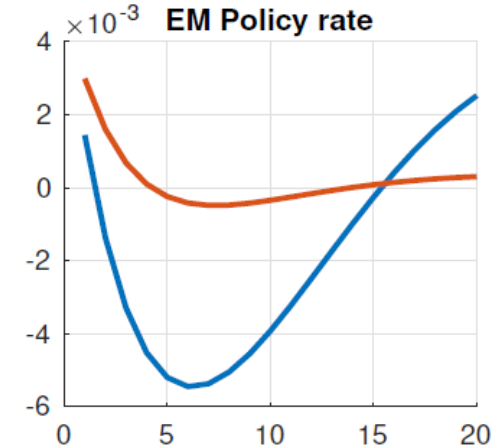
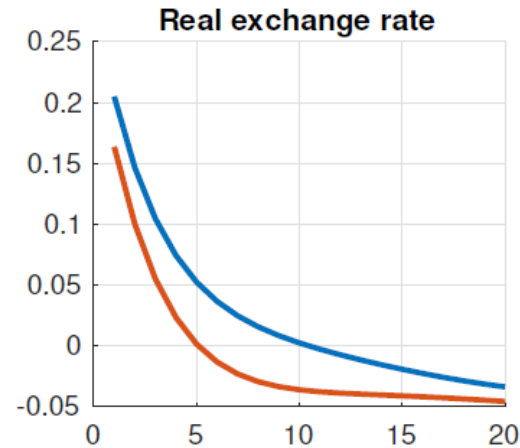
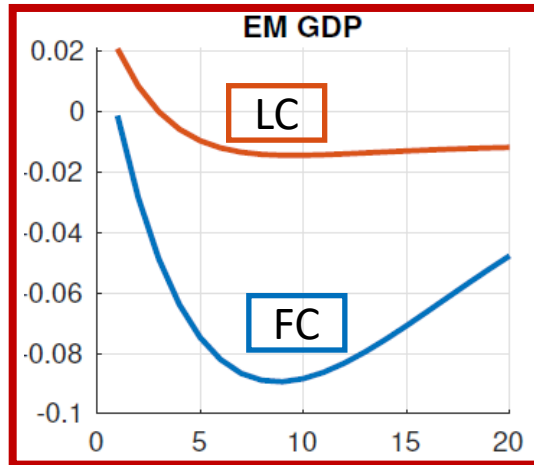
- Impulse to an AE monetary tightening
- FC debt → shape contraction of output
- LC debt → AE bank is affected but unconstrained → small change in output

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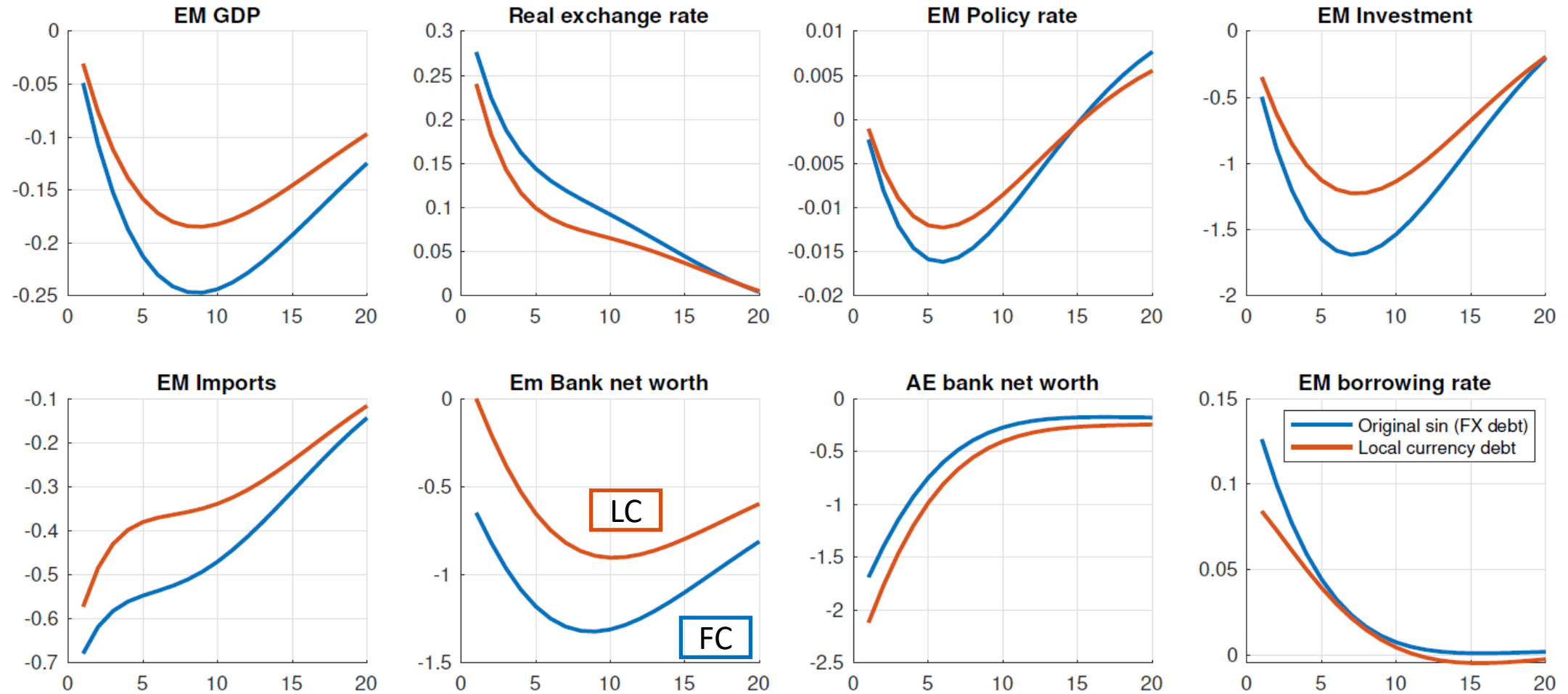
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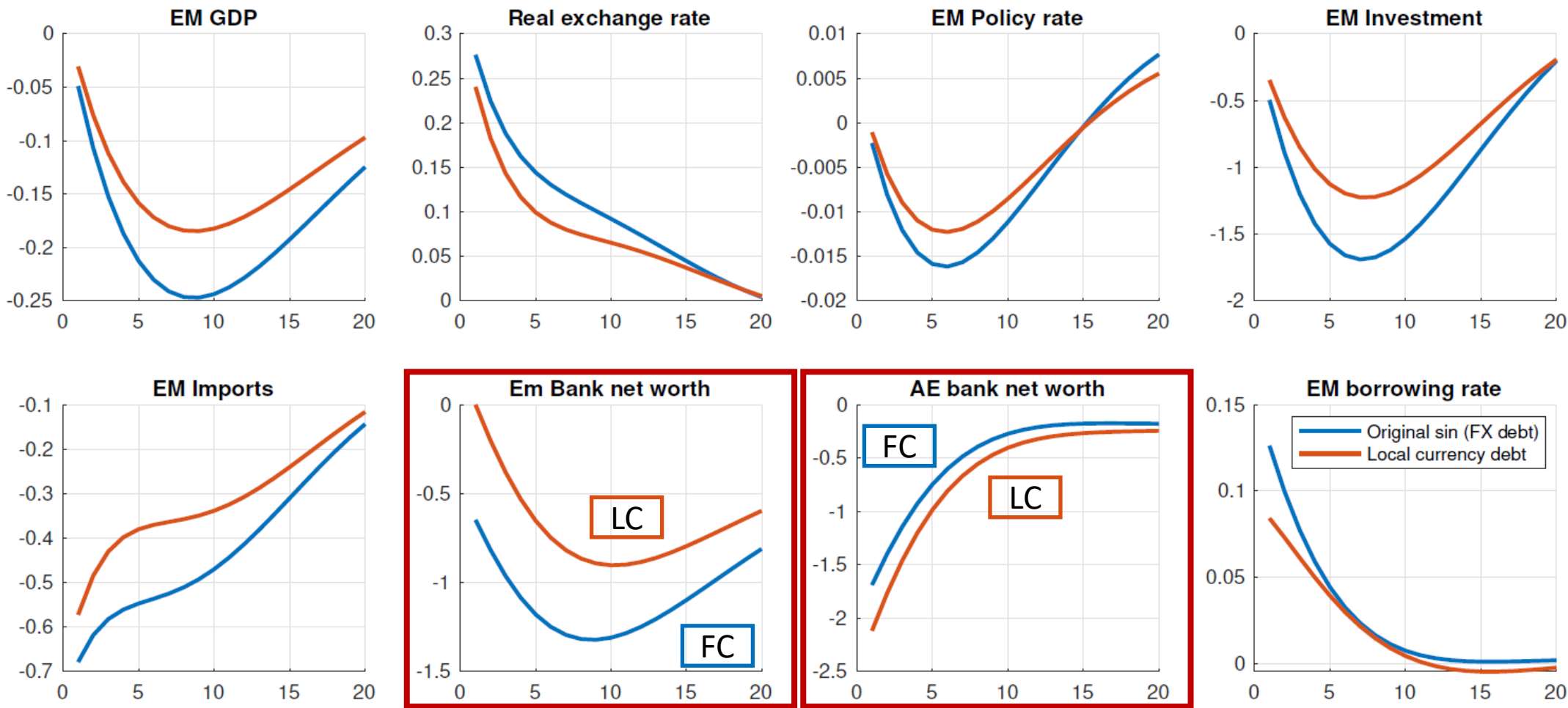
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- **original sin redemption:** \checkmark Usual policy suggestion of advocating LC debt

Case 2: With AE financial friction



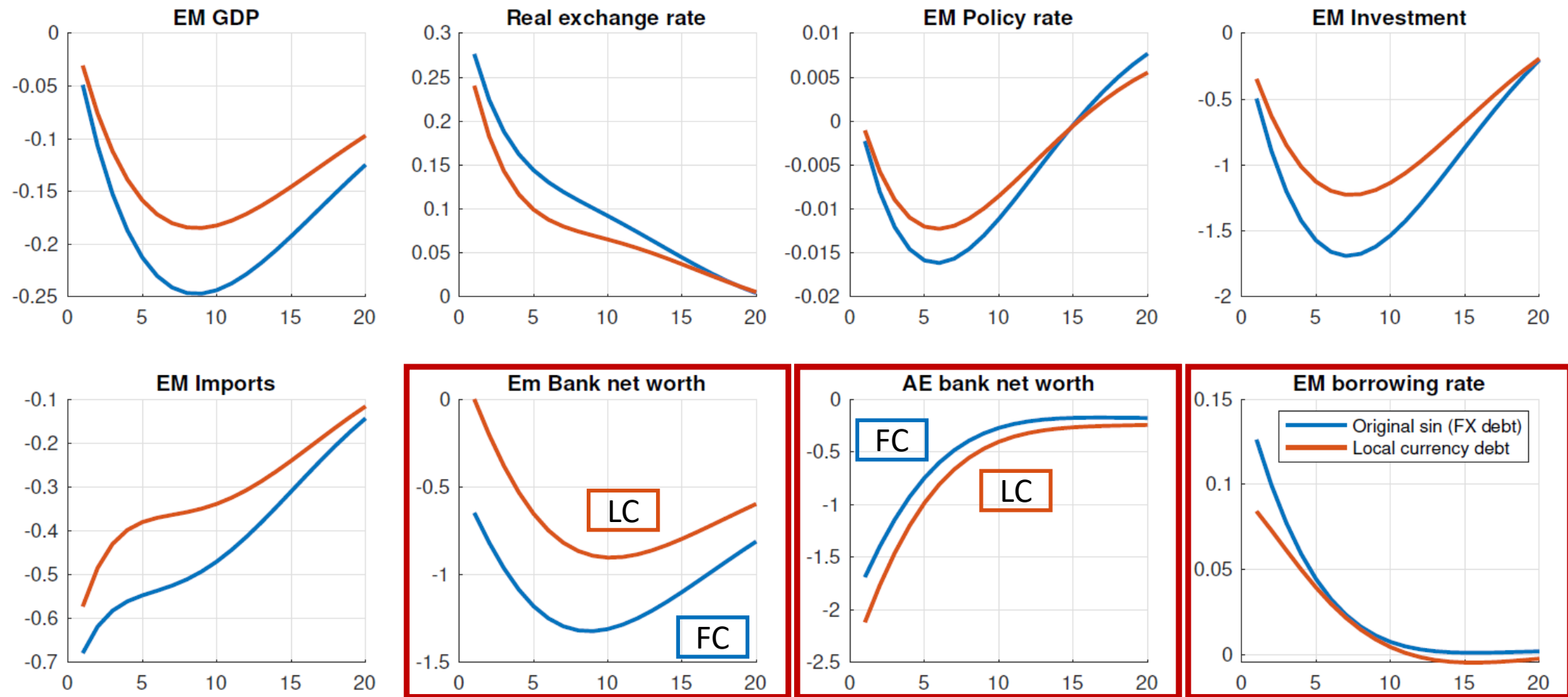
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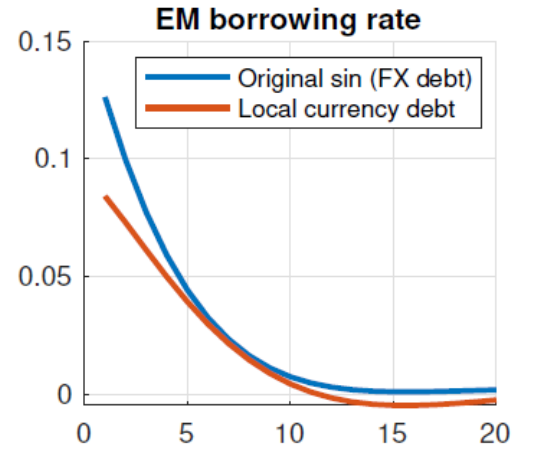
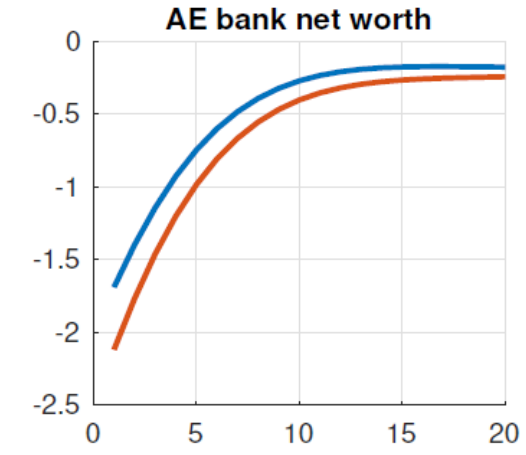
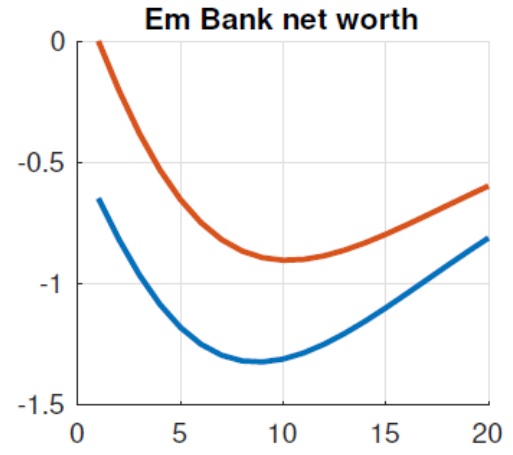
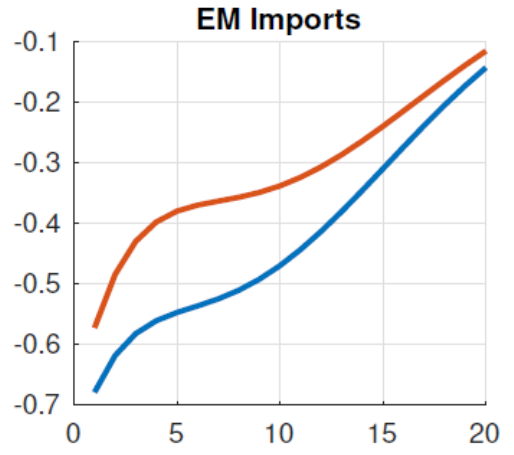
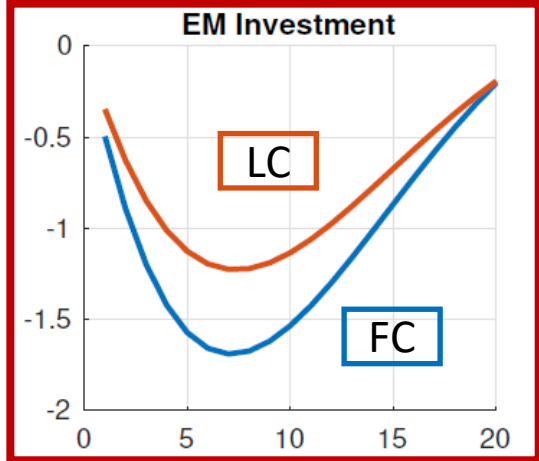
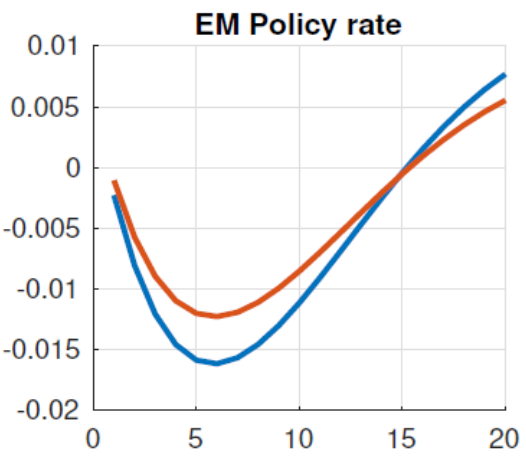
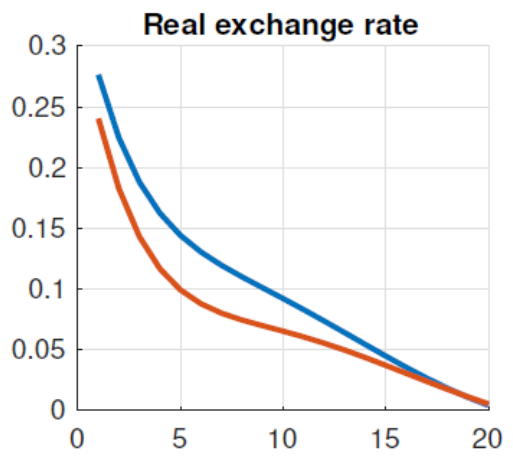
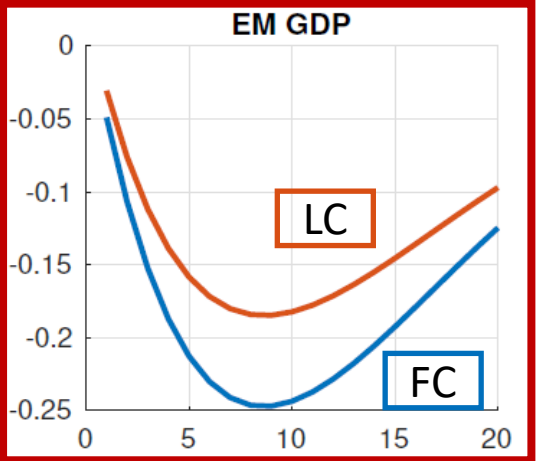
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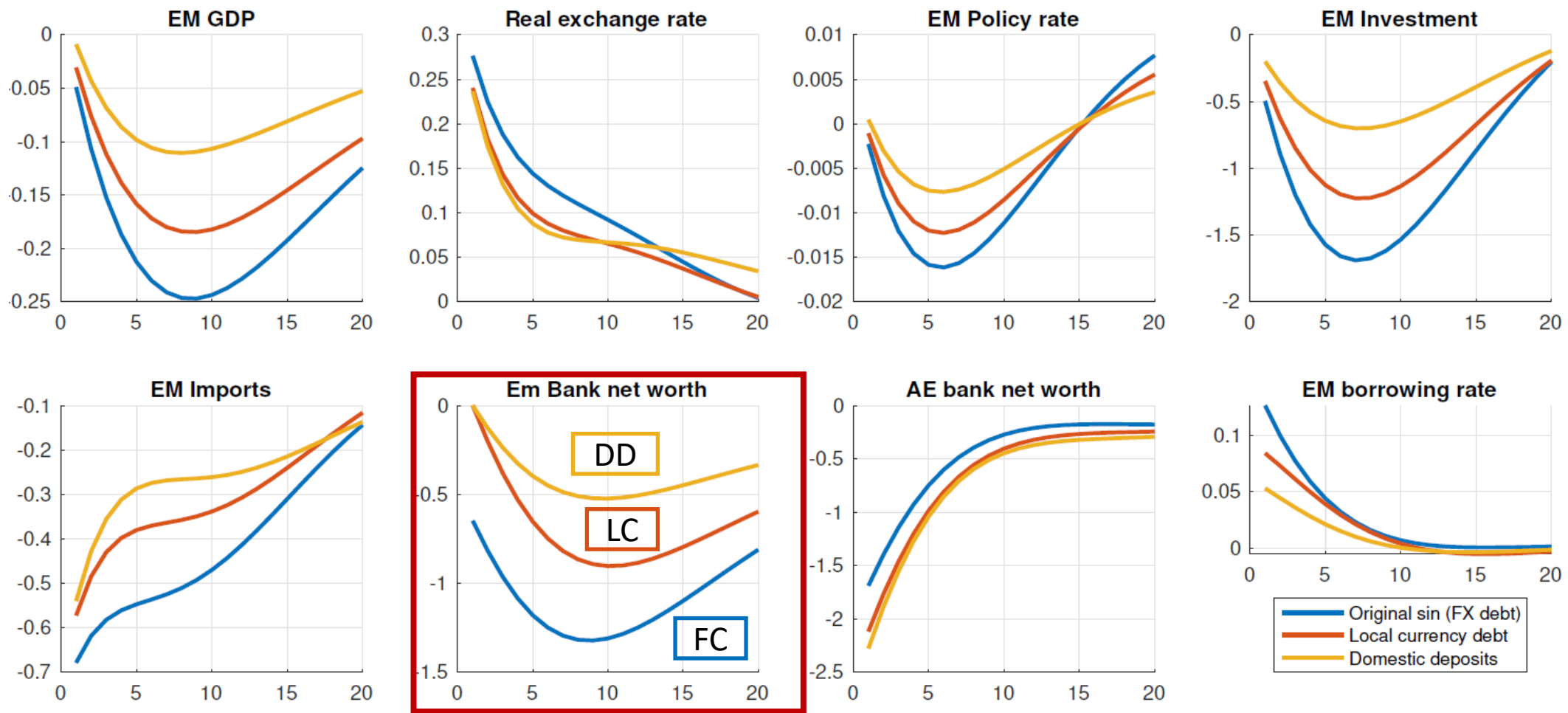
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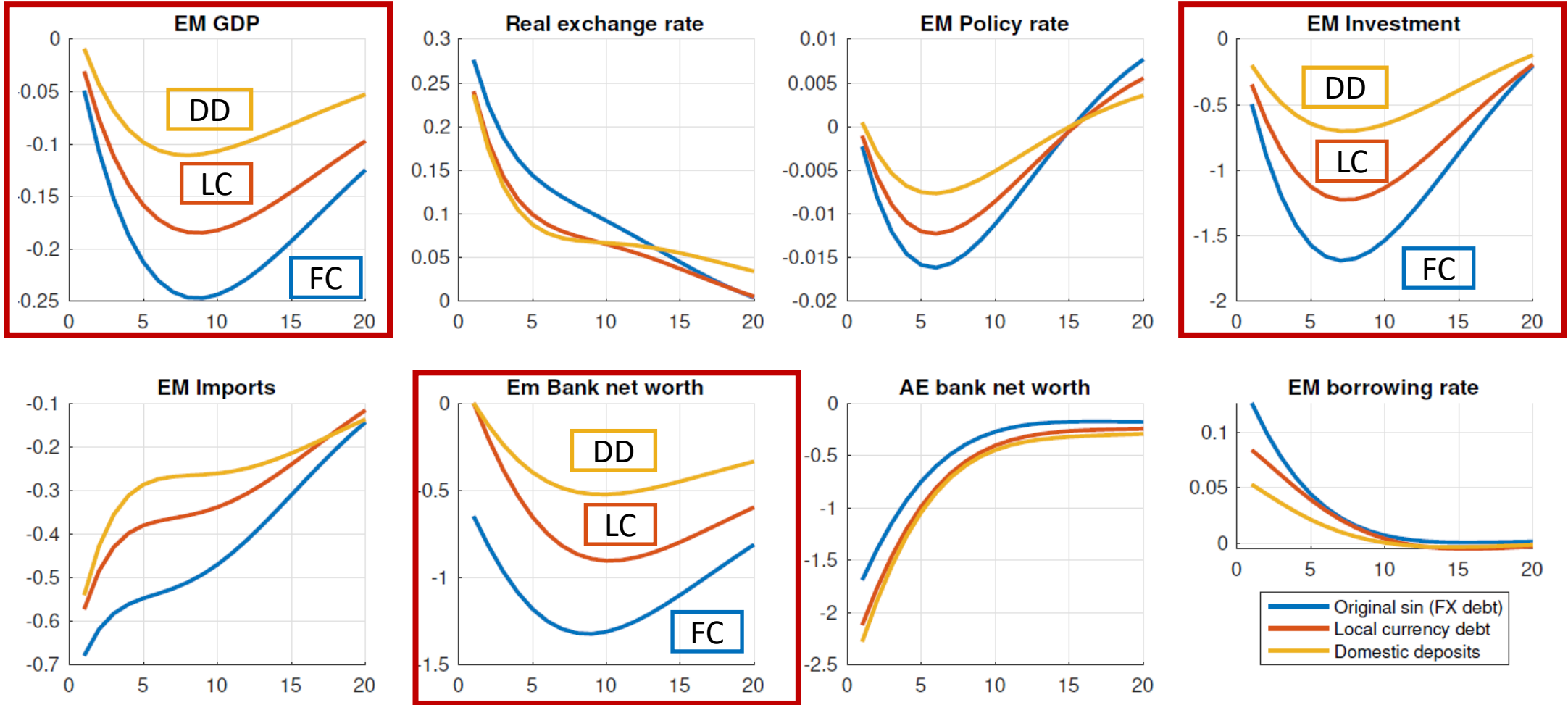
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Case 3: With 50% of loans funded by domestic deposits



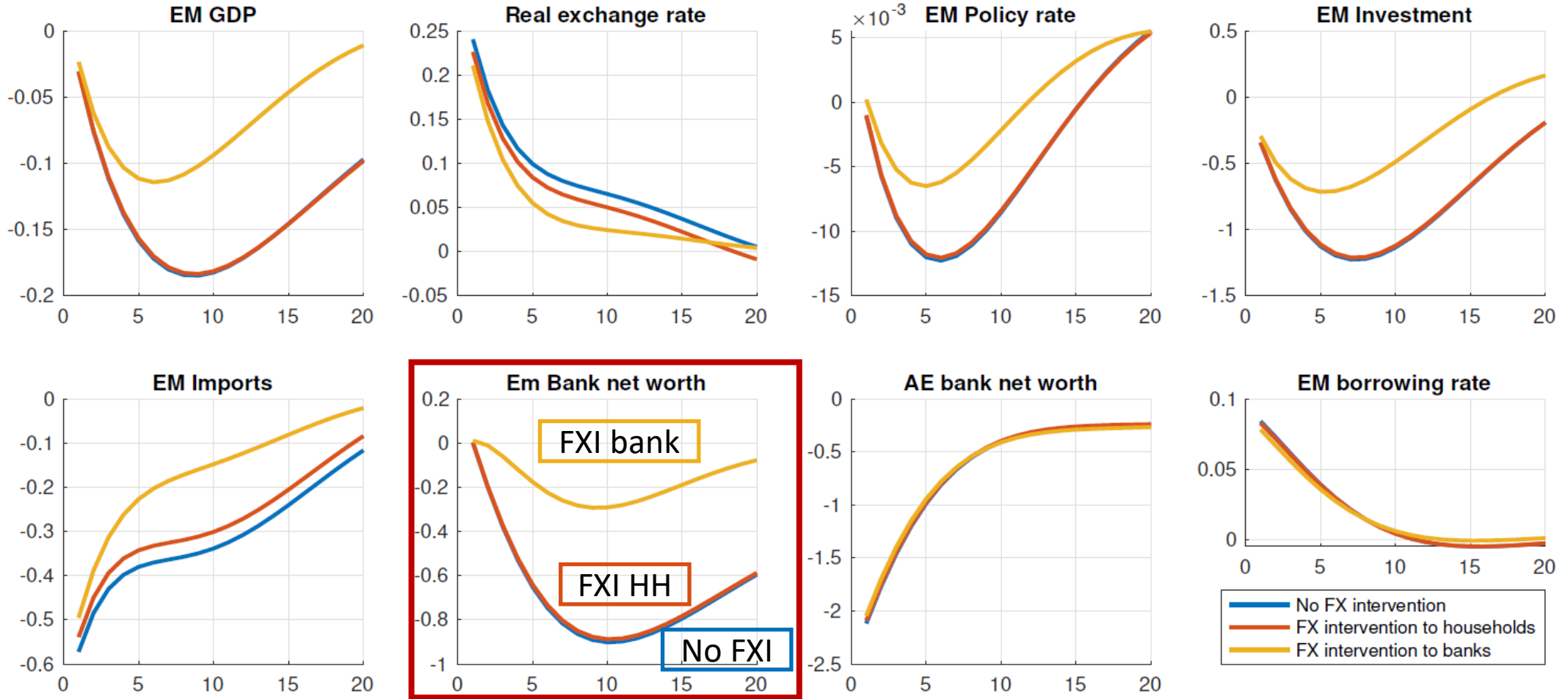
- Impulse to an AE monetary tightening
- ✓ household evaluate currency return in LC
- ✓ one less layer of financial friction

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- Impulse to an AE monetary tightening
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Case 4: FX intervention



- Impulse to an AE monetary tightening, all local currency debt
- Changing the foreign reserves and changing domestic bonds either to EM HH / banks
- Effective if the bond proceed is injected to constrained sector

Conclusion

- Original sin redux in a DSGE to study broader economy and policy implications
- Local currency external borrowing is not a panacea
- Original sin redux could be similar to original sin due to financial friction of foreign lenders
- Long term policy: increase domestic investor base
- Short term policy: FX intervention targeting constrained sector

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The end

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