Original Sin Redux: A Model Based Evaluation

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ABFER
Annual Conference 2021 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

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• Significant progress! Is the problem solved?
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  - conjecture a new issue arises
  - currency mismatches migrate from borrowers to lenders
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- Yield ↑, LC depreciates. Yield ↓, LC appreciates → 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)
  - able to study broader macro responses
  - outlines policy implications
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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)
  • If foreign lenders are constrained (more empirically relevant)
    local currency external debt → original sin redux → responses to foreign shock like original sin
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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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<td>foreign participation of LC debt × global friction</td>
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Original sin

Emerging Economy (EM)  Advanced Economy (AE)

Currency mismatch

Banks (Gertler Karadi leverage constraint)

LC loans (Peso)

Revenue in LC

Production firms

FC deposits (USD)

Banks

FC loans (USD)

Household
Original sin redemption

Emerging Economy (EM)  Advanced Economy (AE)

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Revenue in LC
Original sin redux

Household → Banks (Gertler Karadi leverage constraint) → Capital firms

Household → Banks (Section 3.2 (no constraint) Section 3.3 (constraint)) → Capital firms

Central bank → Household → Households

Central bank → Banks (Section 3.4 LC deposit) → Production firms

Central bank → Banks (FC deposits) → Production firms

Central bank → Sovereign

Sovereign → Production firms

Production firms → FX intervention

Emerging Economy (EM) → Section 3.5 FX intervention

Advanced Economy (AE) → Section 3.5 FX intervention

FC deposits → FC loans or LC loans

LC deposits → FC loans or LC loans

LC loans → FC loans or LC loans

FC bonds → FC deposits
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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- original sin redemption: ✓ Usual policy suggestion of advocating LC debt
Case 2: With AE financial friction

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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
- ✓ households evaluate currency return in LC
- ✓ one less layer of financial friction
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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THANK YOU!
The end

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