



A Macroprudential policy exercise for Mexico

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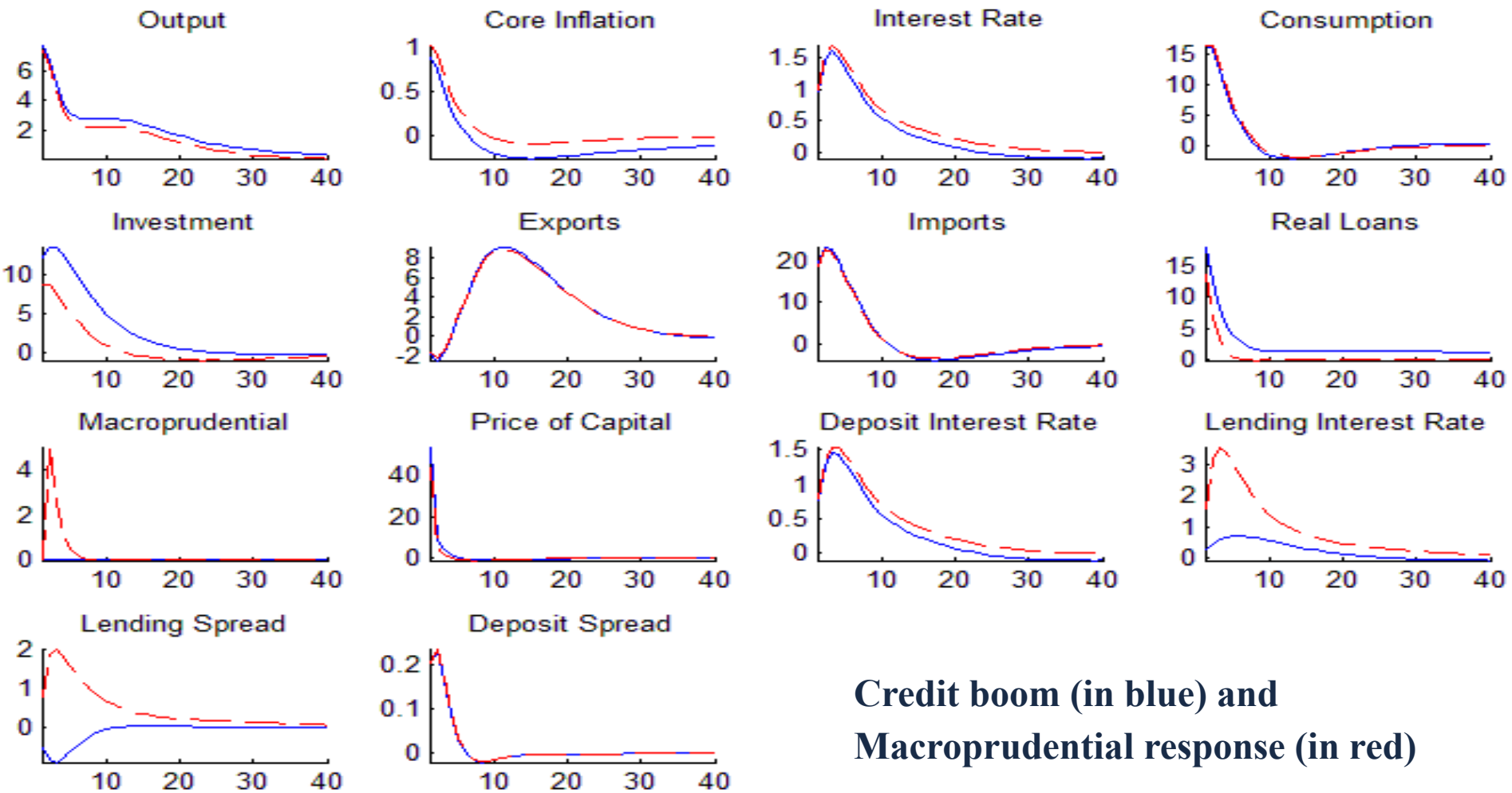
Ingredients of the DSGE model

- The model used in the exercise is a simpler version of the one presented in Adame, Roldán, and Zerecero (2013)
- This version features:
 - ✓ *Patient households (depositors)*
 - ✓ *Impatient entrepreneurs (borrowers)*
 - ✓ *Collateral constraints for entrepreneurs*
 - ✓ *Nominal rigidities*
 - ✓ *Open economy with incomplete FX pass-through*
 - ✓ *Banking sector with staggered deposit and lending rates*
- The model was re-estimated for the Mexican economy for the period 2001-2013, including 14 variables among which
 - ✓ *Consumption, investment, output, inflation, interest rate spreads, real exchange rate, a foreign sector, etc.*

Credit boom and macroprudential policies

- The credit boom was generated by a **greater appetite towards risk** not related to fundamentals (similar to Alpanda et al., 2013)
 - ✓ *Perceived returns on savings falls, whereas the one on capital increases*
 - ✓ *Households shift savings towards consumption*
 - ✓ *Entrepreneurs buy more capital and increase borrowings*
- The credit boom is demand-side driven
- We consider two macroprudential policies
 - ✓ *Benchmark: Tax on credit supply (loans are more expensive)*
 - ✓ *Alternative: Tax on credit demand (stricter collateral requirements)*
- **Remark:** In this version of the model, **credit supply** is perfectly elastic, whereas **credit demand** is downward sloping.

Benchmark case, tax on credit supply

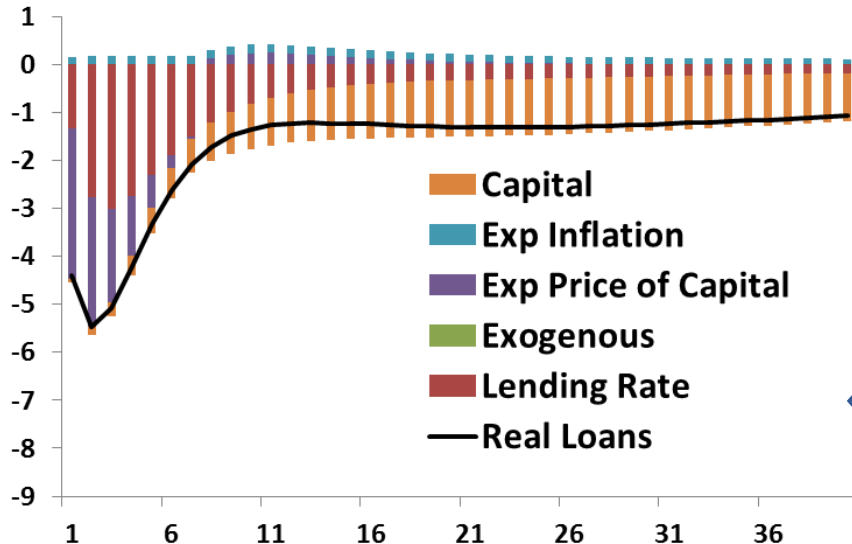
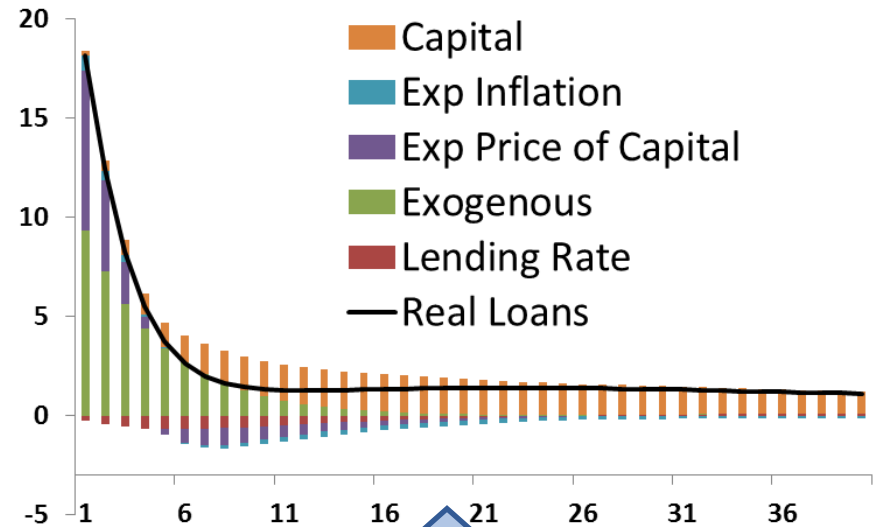


**Credit boom (in blue) and
Macprudential response (in red)**

Benchmark case, decomposition of the response of loans

From collateral constraint, we have:

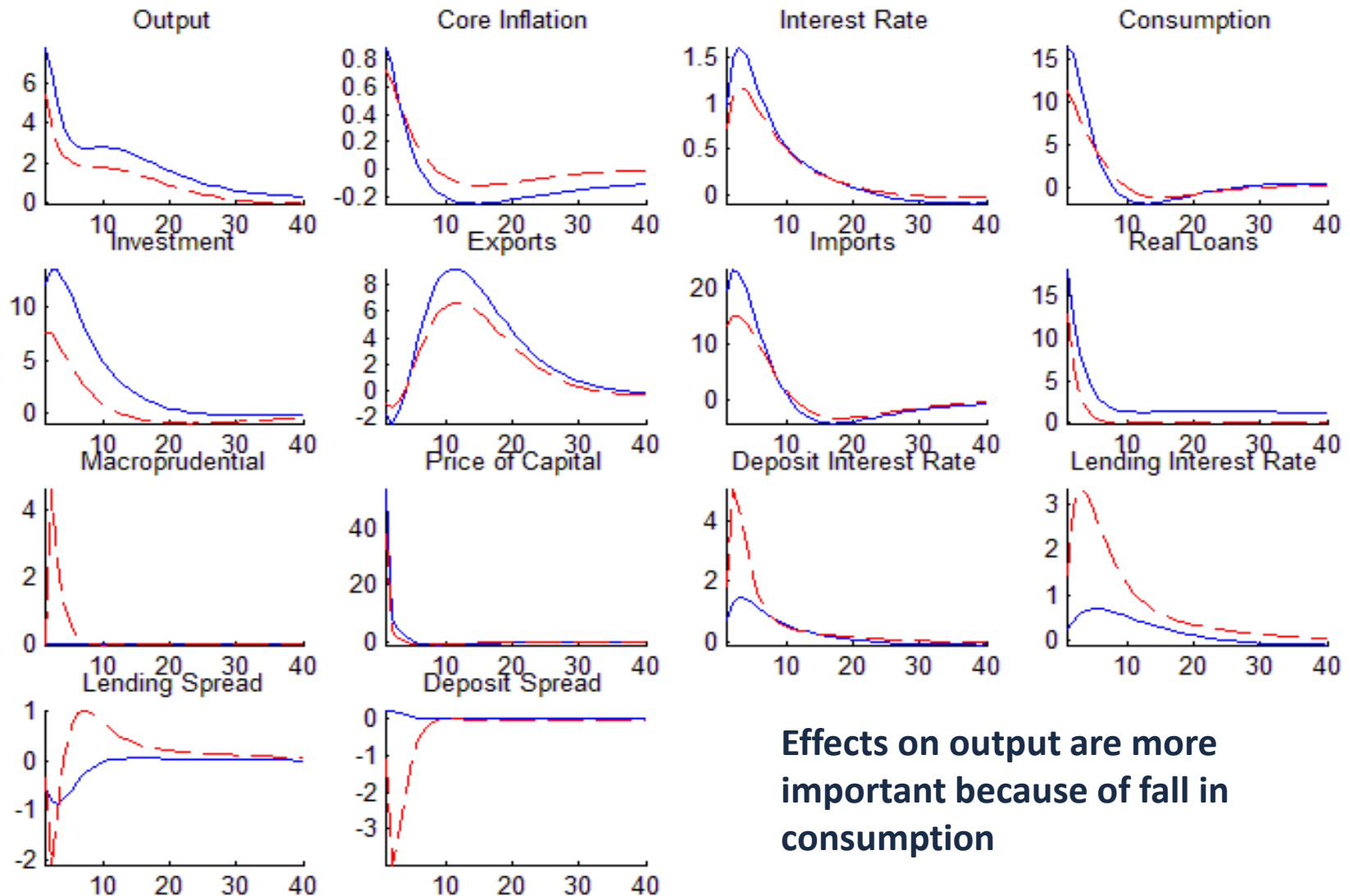
$$L_t^F = \frac{\varepsilon_t^{cr} \times E_t [P_{t+1}^k (1 - \delta_k) k_t]}{R_{L,t}^F}$$



Credit boom: loans are primarily driven by the exogenous shock

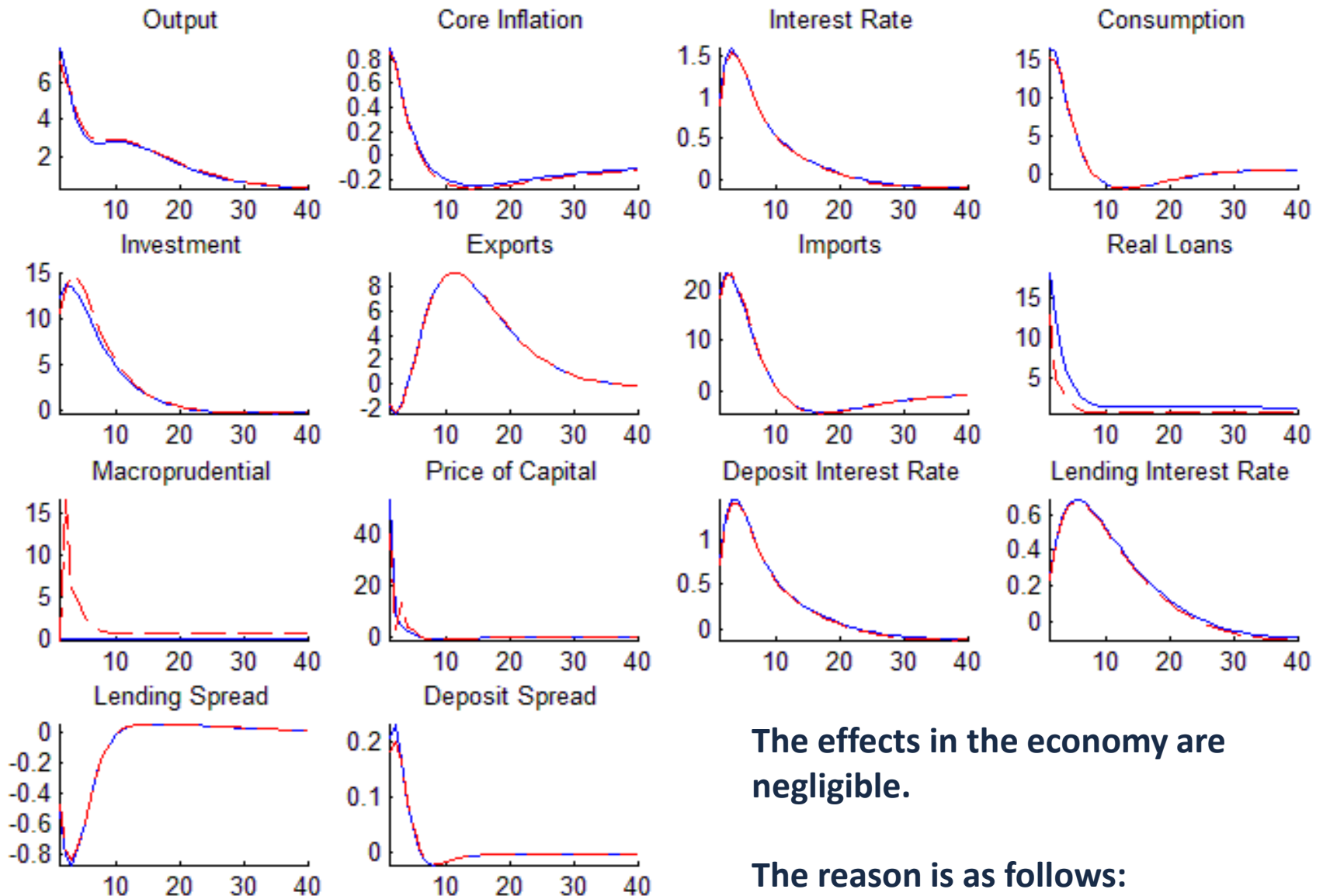
Mg effect of macroprudential policy: loans fall due to lower capital price and expensive credit

Benchmark policy plus subsidizing savings



Effects on output are more important because of fall in consumption

Alternative policy, tax on credit demand

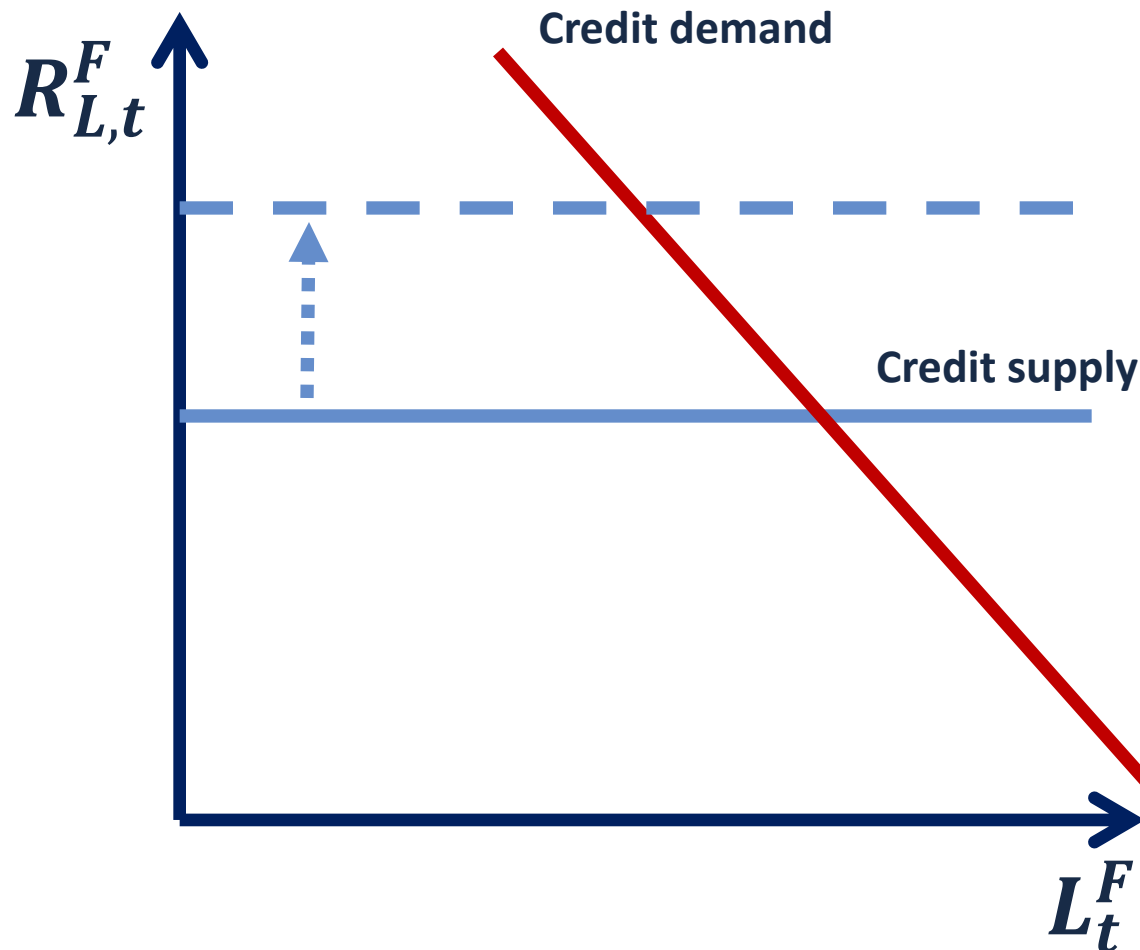


The effects in the economy are negligible.

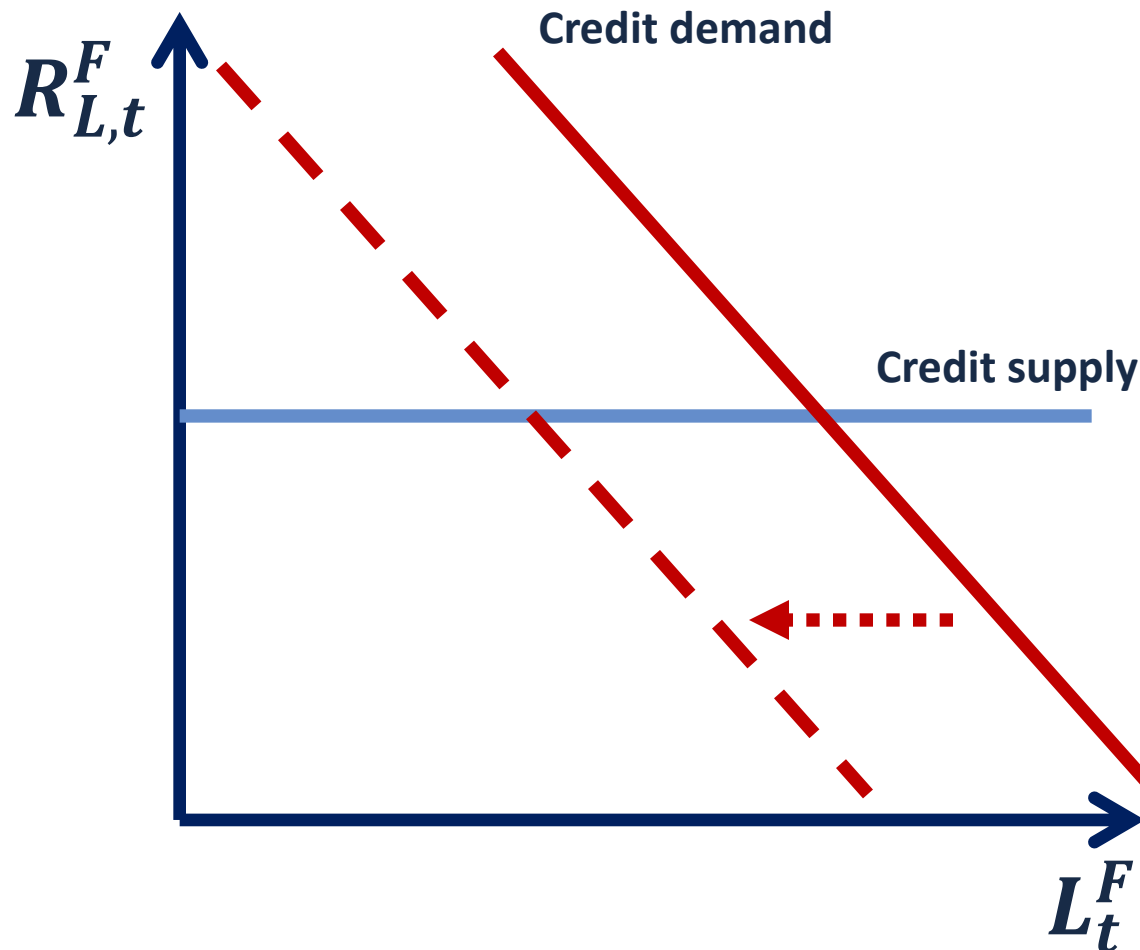
The reason is as follows:

Effectiveness to moderate credit boom depends on elasticities of credit market

- A tax on credit supply is effective because it raises the cost of investment relative to consumption for entrepreneurs

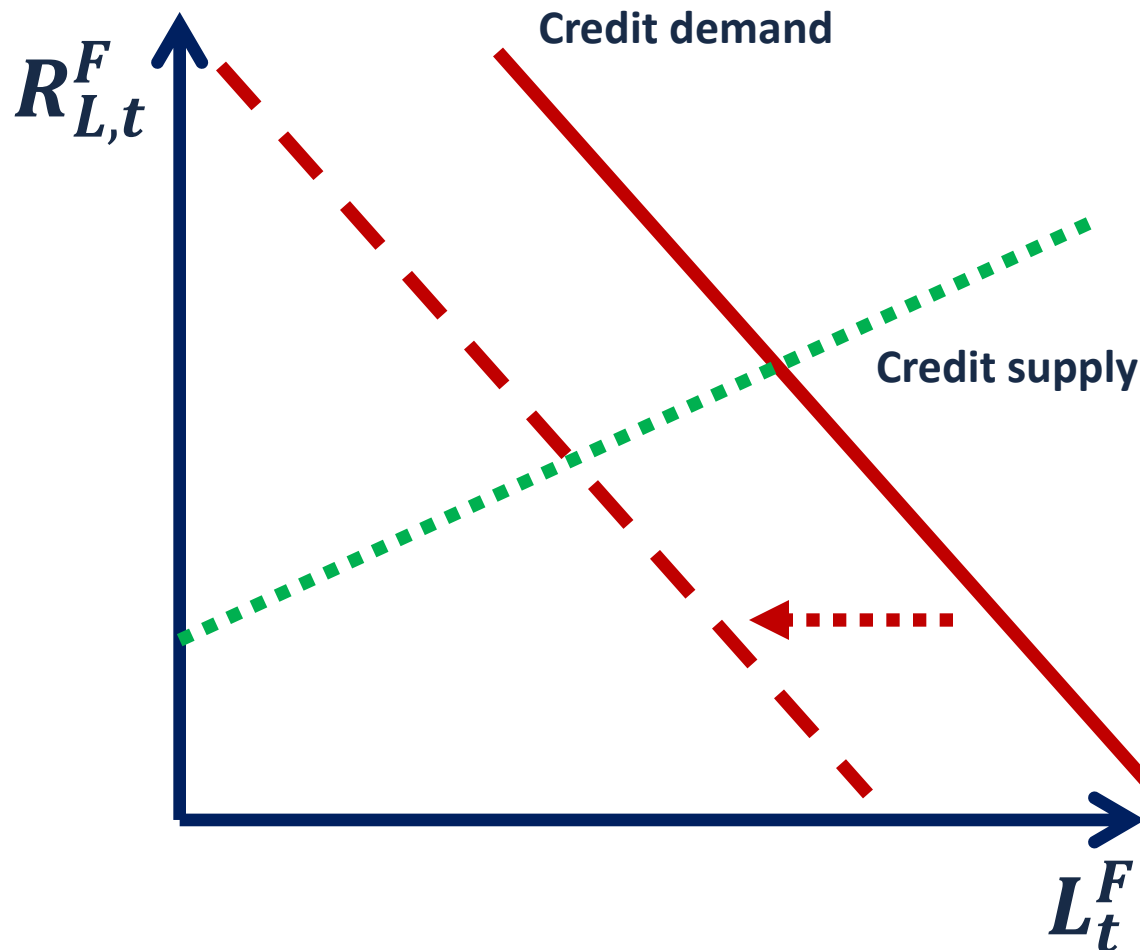


Effectiveness to moderate credit boom depends on elasticities of credit market



- A tax on credit supply is effective because it raises the cost of investment relative to consumption for entrepreneurs
- A tax on credit demand is ineffective because the relative cost of investment is unchanged

Effectiveness to moderate credit boom depends on elasticities of credit market



- A tax on credit supply is effective because it raises the cost of investment relative to consumption for entrepreneurs
- A tax on credit demand is ineffective because the relative cost of investment is unchanged
- If credit supply would be upward sloping, a tax on credit demand will reduce the relative cost of investment

Conclusions

- We estimated a DSGE model with financial constraints for Mexico.
- We simulated a credit boom generated by a non-fundamental risk-taking shock (→ higher consumption and investment)
- The credit boom was moderated through a stronger regulation in the supply of credit (→ benchmark policy: tax on loans supply)
- The benchmark policy might be strengthened if savings are also encouraged
- An alternative policy based on discourage credit demand has ambiguous effects,
 - ✓ *Consumption might respond*
 - ✓ *Final effect on investment demand is not clear*



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