Discussion of "Negative Nominal Interest Rates and the Bank Lending Channel" by Eggertsson and others (2019)

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Very Nice and Timely Paper

- Since the GFC, several central banks in advanced economies have implemented unconventional monetary policies (and more may be needed to address Covid-19).

- In addition to new instruments such as large scale asset purchases, forward guidance, credit easing, some central banks have used negative nominal interest rates to provide further monetary stimulus.

- This paper studies the effects of implementing ***negative nominal interest rates*** in Sweden:
  - Repo rate negative between Feb. 2015-October 2019 (currently at zero). Lowest: negative 0.5 percent.

- … using: (i) micro-level data on Swedish loans, and (ii) a calibrated macro (DSGE) model with a banking sector.

Main Results of the Paper

- Using micro-level data:
  - ▶ Document ZLB for retail deposit rates in Sweden.
  - ▶ Estimated pass-through of policy rates to funding costs and retail lending rates becomes much lower at negative policy rates, even reversing sign.
  - ▶ Increased rate dispersion linked to banks' financing structures.
  - ▶ Banks that rely more on deposit financing exhibited lower credit growth.
  - ▶ Negative rates had an adverse impact on banks' net worth.

- Using a macro model, derive conditions under which negative policy rates can be expansionary or not (explains cross-country differences).
  - ▶ Initial level of lending and deposit rates matters.
  - ▶ Banks' net exposure to negative interest rates crucial.
  - ▶ There can be costs to NIRP but generally small.

Discussion

1. Very simple framework to illustrate the mechanisms at play and explain some empirical results.

2. Negative rates *in isolation*? Helps identify its effects but may miss complementarities with other UMPs.

3. A few suggestions on the model.

A Very Simple Banking Framework

Assets		Liabilities	
Loans	i^L	Deposits	i^D
Deposits at CB	i^{CB}	Other Funding	i

- Two parameters:
  - ► α = Deposits at CB (bank reserves)/Assets.
  - ► β = Deposits/Total Liabilities.

- Loan pricing: revenues as a mark-up of funding costs:

$$(1 - \alpha)i^L + \alpha i^{CB} = mkp + \beta i^D + (1 - \beta)i$$

Negative Policy Rates Increase Lending Rates

- Assume all deposit rates and funding rates are the same and equal the policy rate, and they are all positive:

$$i^L = mkp + i^D$$

- Assume β=1, central bank nominal policy rate becomes negative, but retail deposit rates bounded at zero (as shown in the paper):

$$i^L = (mkp - \alpha i^{CB})/(1 - \alpha)$$

- In this case **negative policy rates increase retail lending rates**: a main empirical result in the paper (the pass-through switches sign, but is quantitatively small, since α is small).

... But They Affect Other Benchmark Rates

■ However, other funding costs *are not bounded at zero* in nominal terms. Strong comovement between policy rates and interbank rates:
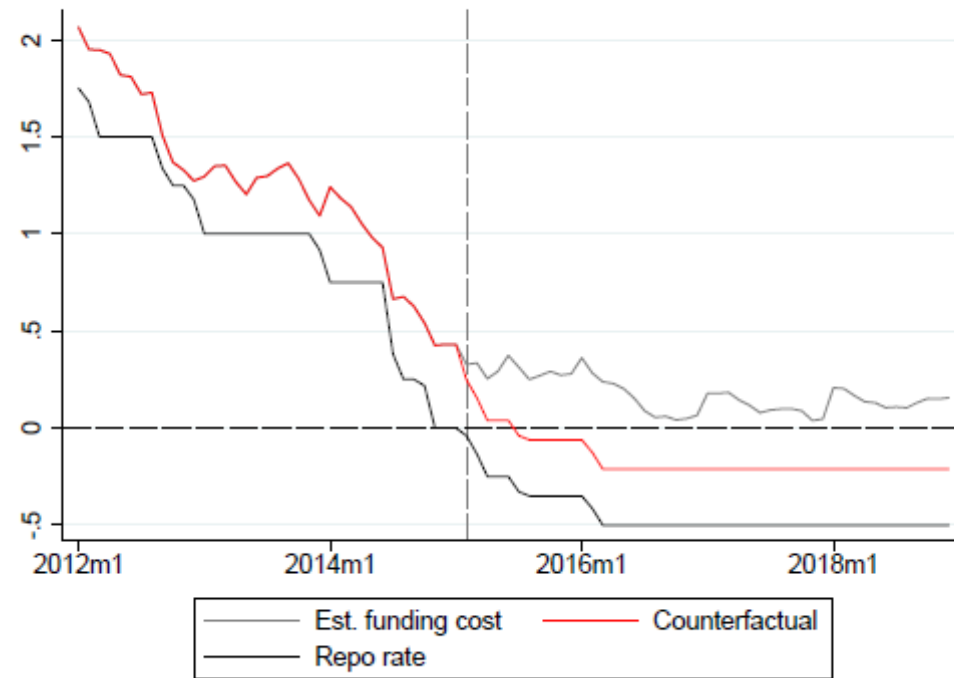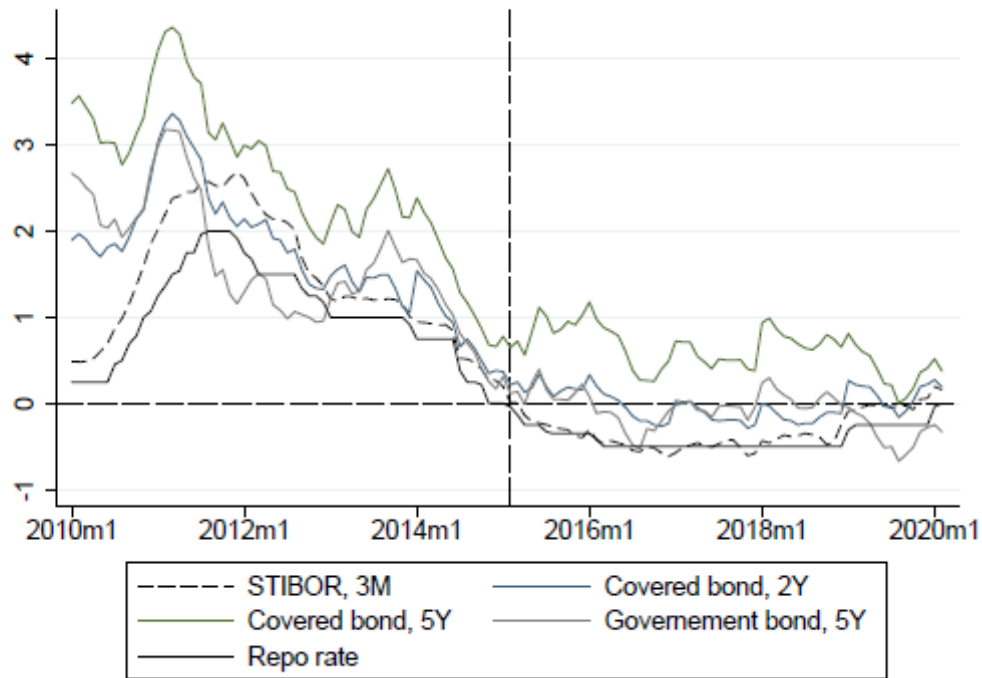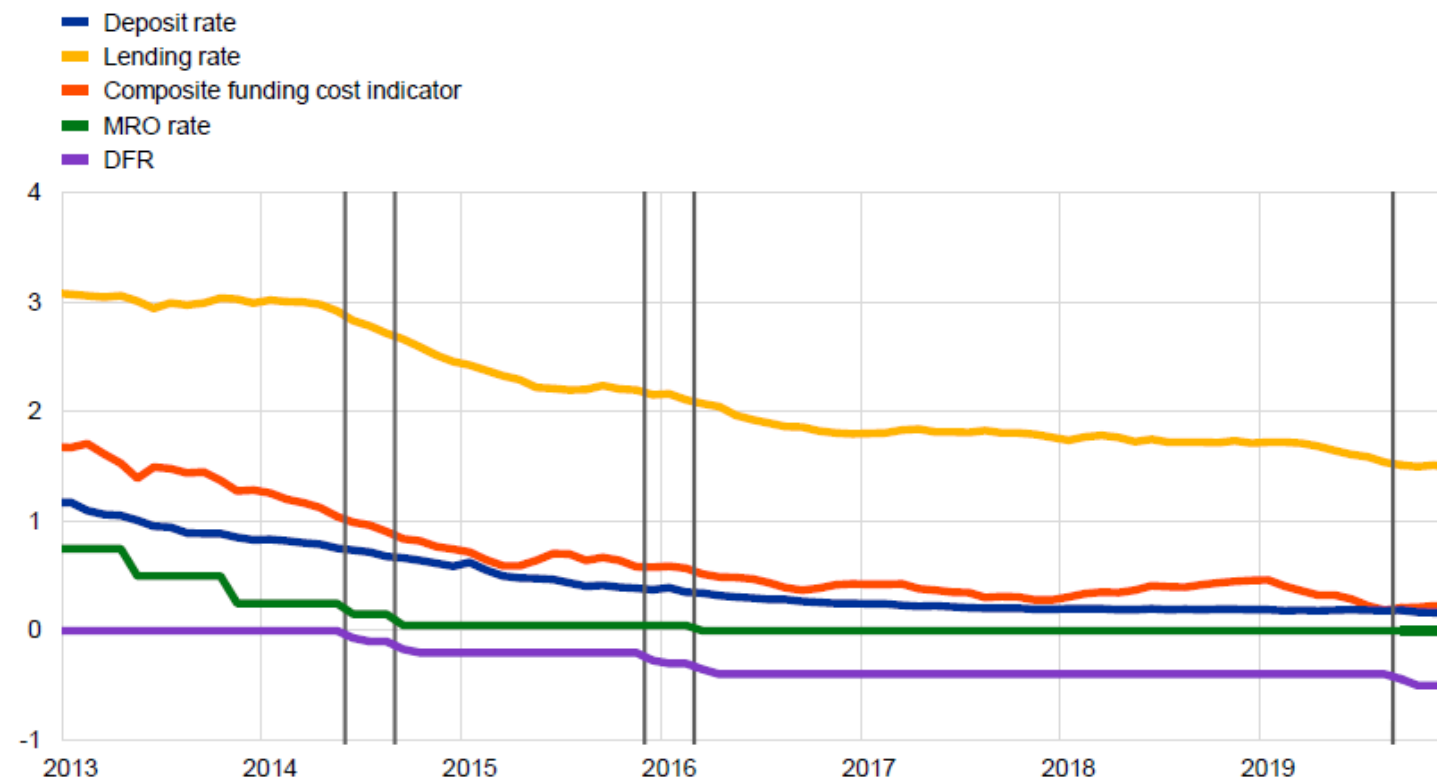
Euro Area Evidence

Chart 1

Developments in policy rates, bank funding costs and bank lending rates

(percentages per annum)

- Deposit rate
- Lending rate
- Composite funding cost indicator
- MRO rate
- DFR

Sources: ECB and ECB calculations.
Notes: The vertical black lines indicate the five cuts in the DFR into negative territory, from 0 to -0.1% in June 2014, from -0.1% to -0.2% in September 2014, from -0.2% to -0.3% in December 2015, from -0.3% to -0.4% in March 2016, and from -0.4% to -0.5% in September 2019. Latest observation: December 2019.

A Very Simple Banking Framework

- Adding back other funding sources, assuming that their interest rates comove with the policy rate, and that retail deposit rates are stuck at zero:

$$i^L = [mkp + (1 - \beta - \alpha)i^{CB}]/(1 - \alpha)$$

- Then the impact of negative interest rates depends on funding sources (deposits vs other).

- The paper confirms this heterogeneity at the bank level: the higher is β, the lower is the transmission of policy rates to retail rates. Also, credit growth declines when the policy rate is pushed further into negative territory.

- Cross-country evidence is mixed. Eisenschmidt and Smets (2018) do not find the same result for the Euro Area (because banks charged negative rates to NFCs).
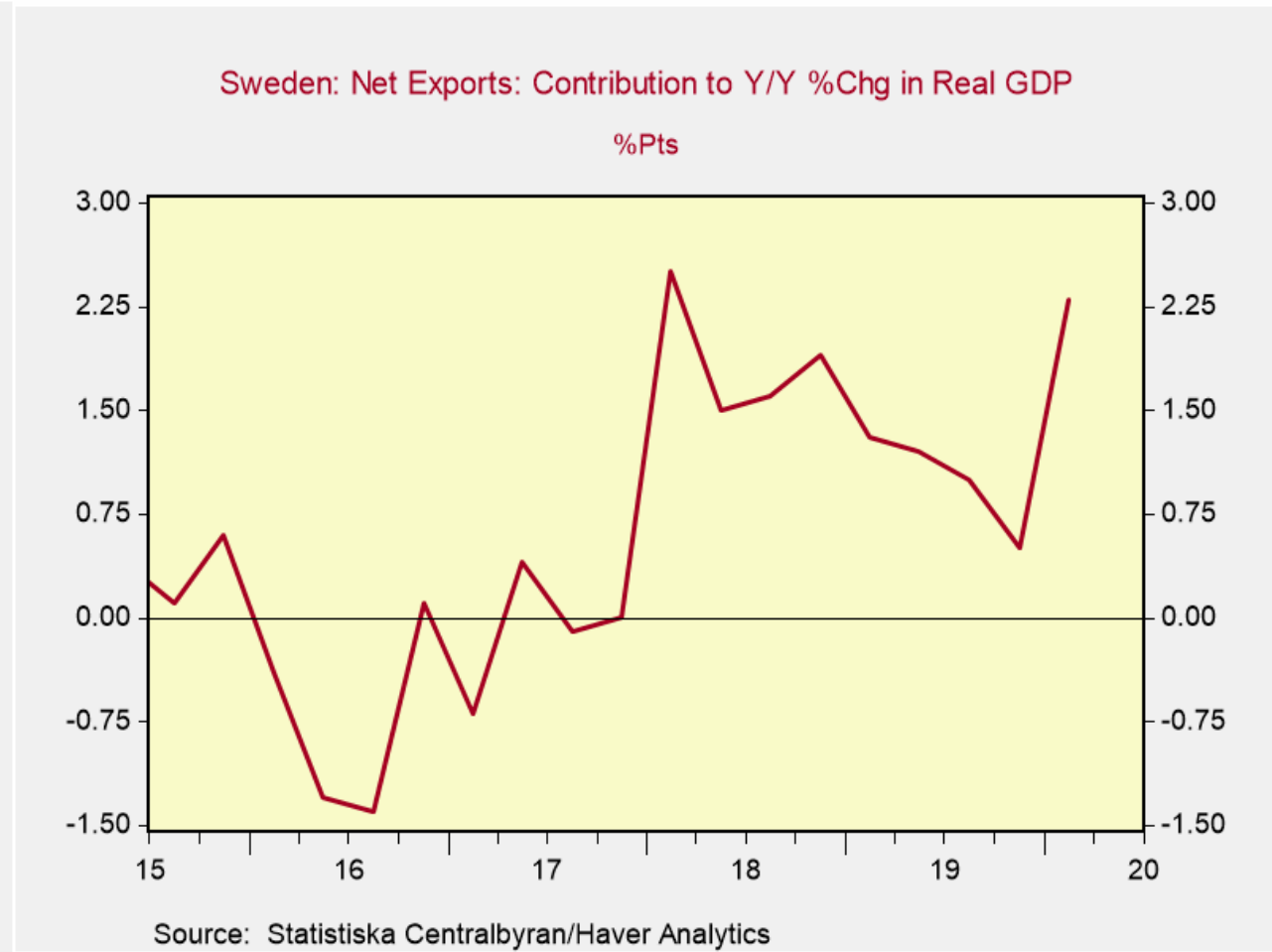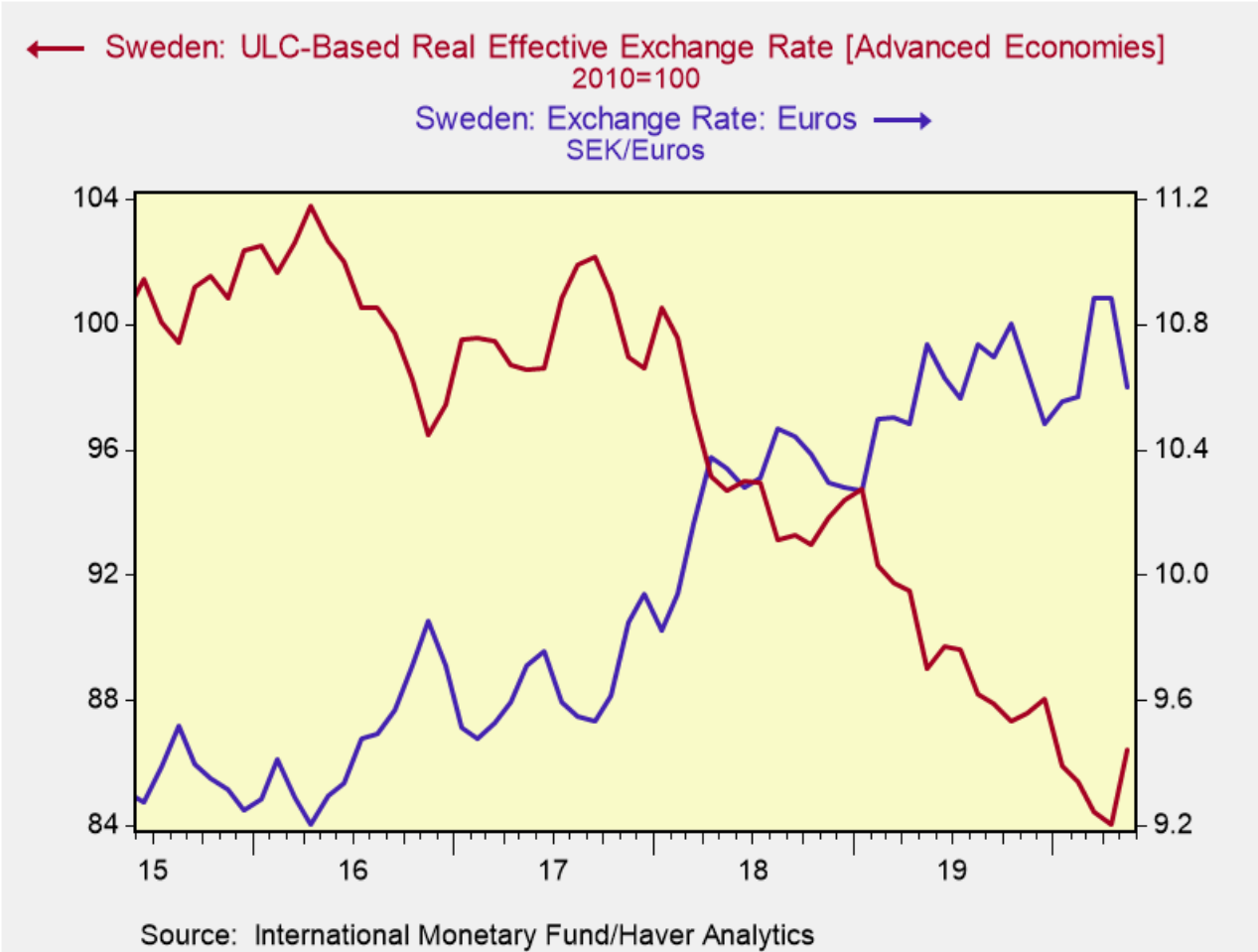
Evaluating Negative Policy Rates

- The second part of the paper **evaluates negative policy rates in a DSGE model**. But these policies have been implemented for different reasons (responding to different shocks), and in combination with other UMPs:

  - ► *Denmark, Switzerland*: exchange rate considerations.
  - ► *Euro Area*: in combination with QE (government, corporate bonds), credit easing policies (LTROs), forward guidance.
  - ► *Japan:* in combination with QE (government, corporate bonds, ETFs), YCC, forward guidance.
  - ► *Sweden:* in combination with QE (government bonds), forward guidance, possibility of conducting FXI.

  Since negative rates have not been implemented in isolation, the paper should study what other policies are the best complements to NIRP (QE, YCC, forward guidance, credit easing).

Model-Based Evaluation

- DSGE NK model with a banking sector and imperfect asset substitutability, even at the ZLB, because of liquidity services (reserves) and storage costs (money).

- Without financial frictions an interest rate cut is expansionary, but ***it can be contractionary if negative rates affect banks' net worth and credit supply adversely***. Key parameter: banking sector net position to negative interest rates (i.e. asset and liability positions that have different pass-through coefficients from policy rates).

- The costs of negative policy rates are very small: feeding to the model the Swedish policy rates, the output costs are 4 basis points (repo rate at -0.5 percent), compared to a ZLB scenario ….

- …. but there could be other benefits (authors are open to this possibility but it is not modelled).

Open Economy Dimension Important in Sweden: Large Depreciation During NIRP

Source: International Monetary Fund/Haver Analytics

Source: Statistiska Centralbyran/Haver Analytics

Other Comments on the Model

- The shock that causes the recession is a negative preference shock on consumption (see Christiano, Eichenbaum and Rebelo, 2011). The shock is very large: lowers the natural rate by 8 percent, output by 4.5 percent and inflation by 1.2 percent.

- From the Riksbank's MPC minutes, February 11, 2015 meeting:

*"However, **GDP growth in Sweden will be held back by increased uncertainty over international developments**. Developments abroad are expected to be weaker than forecast in the December Monetary Policy Update. **GDP is expected to grow by 2.7 per cent this year and 3.3 per cent in 2016**, and then to slow down to 2.2 per cent in 2017 …."*

*"The outcome for CPIF inflation excluding energy for December was 1.1 per cent" …. "CPIF inflation is forecast to attain the inflation target of 2 per cent in 2016. However, **there is a risk that inflation will be lower than forecast. Inflation expectations have continued to fall** and expectations for five years ahead are well below the inflation target."*

Other Comments on the Model

- A negative external (euro zone) demand shock, together with lower external interest rates (euro area had NIRP since June 2014), that leads to currency appreciation pressures and domestic deflation should be considered for the case of Sweden.

- *NIRP/QE combination successful*? CPI inflation close to 2 percent target by end-2019, real GDP growth averaged 2 percent (2015-2019).

- Even if net interest income declines for banks, they may still benefit from NIRP:
  - ► Expansionary FX depreciation (increases output and avoids debt deflation).
  - ► Higher asset / house prices (more collateral in the economy).
  - ► Capital gains and improved borrower creditworthiness.