Foreign Exchange Intervention at the Zero Lower Bound
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Discussion, Martin Eichenbaum
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Key message of the paper

• Foreign exchange rate intervention has very small effects on aggregate output during `normal’ times.

• When the ZLB is binding, these effects can be much bigger.

• Consistent with standard DSGE analyses, BoI model implies:
  – the more binding the ZLB is, the larger is the impact of any policy that increase aggregate demand,
  – examples include increase in government purchases and policies that stimulate net exports.
Outline

• Why does the ZLB matter so much?

• Was the ZLB binding in Israel in 2008?

• Is the ZLB binding now?

• The limits to monetary policy in a small open economy.
A Simple Taylor Rule

\[ i = \pi + \phi_1 (\pi - 2) - \phi_2 (\text{Output Gap}) + r \]

- **\( i \):** short-term policy rate
- **\( r \):** real interest rate (2%) and BOI’s target inflation rate is 2%
  - If \( \pi = 2 \) and the output gap zero, then the policy rate is 4 percent.
- For each one-point increase in \( \pi \), raise policy rate by \( 1 + \phi_1 \) percentage points.
- For each one percentage point rise in the output gap, reduce the policy rate by \( \phi_2 \) percentage points.
Assume we’re below full employment

• Say government increases spending on goods.

• Leads to a rise to a rise in aggregate demand, even taking associated rise in tax liabilities into account.

• Employment and output rise.

• Rise in output leads to a rise in real wages, other production costs.

• Firms react to rising marginal costs by raising prices, so inflation rises.
The normal multiplier

• Bol responds to rise in inflation by raising real interest rate.

• Consumption and investment demand fall so aggregate demand rises by less than one-to-one with the rise in government spending.

• Rise in G crowds out consumption and investment.

• So multiplier will be positive but less than one.
Exchange Rate Intervention

- Push down value of NIS by selling NIS / buying $’s

- Resulting fall in relative price of Israeli goods boosts exports, lower imports.

- Like an increase in G, this policy raises aggregate demand for Israeli goods
  - Even more powerful than increase in G because there are no offsetting tax effects.

- Problems:
  - A weaker NIS generates inflation, so BoI will raise rates, offsetting boost in aggregate demand.

  - How long can you lower relative prices for?

  - How responsive are exports to a temporary change in relative prices?
The Zero Lower Bound

• The Taylor rule:

\[ i_{ff} = \pi + \phi_1 (\pi - 2) - \phi_2 (\text{Output Gap}) + 2 \]

• Key constraint: \( i \) can’t be (too) negative.

• Suppose ZLB is binding

Real interest rate (t) = R(t) - \( \pi^e(t) \) = -\( \pi^e(t) \)

• When the ZLB binds and there’s high expected inflation, the real rate is low.
Virtuous Cycles in the ZLB

• An increase in G leads to a rise in output, marginal cost and expected inflation.

• With nominal interest rate stuck at zero, resulting rise in expected inflation drives down real interest rate, driving up private spending.

• This rise in spending leads to a further rise in output, marginal cost and expected inflation, a further decline in the real interest rate and a rise in consumption.

• Net result is a large rise in inflation and output.

• Multiplier can be much larger than one.
Exchange rate interventions in the ZLB

• Same logic applies to intervention that leads to depreciation in NIS.

• Depreciation leads to a rise in next exports.
  – A rise in demand for Israeli goods.
  – Similar to a rise in government spending.

• Pass through inflation leads to a separate inflationary channel which lowers real interest rate (in ZLB).
The size of the multiplier

• The exact value of the multiplier depends on various factors.

• Structural new-Keynesian models
  – Multiplier is large when output cost associated with ZLB problem is large.
  – Highly correlated with the size of the output gap.

• Is the output gap big in Israel?
Mixed signals: depends on whether you look at output gap (production function based) or unemployment rate.
Inflation in Israel

CPI inflation is very low.
A drop in this exchange rate measure indicates an appreciation of the NIS.
Taylor Rule for Israel

\[ i(t) = 0.32 + 0.85i(t-1) + 0.21π(t) + 0.08y(t) - 0.03e(t) \]
Why is the ZLB border-line binding?

• It’s not because of a large output gap.
  – Mixed signals on sign of output gap.
  – OECD projects GDP growth to be roughly 3.5% in 2016 and 2017.

• Main reason ZLB might is border line binding in Israel: CPI inflation is so low.

• Absent a compelling argument that output gap is very large, a desire to increase inflation per se seems like a strange reason to intervene in exchange rate market.
Israeli exports have been weak

- Primarily reflects the global slowdown.
- That weakness raises two related, much larger issues.
- What is the correct real interest rate to put in Israel’s Taylor rule?
  - If interest rate is lower, the ZLB is more binding than standard calculations indicate.
- **Secular stagnation hypothesis**: real interest are now permanently and substantially lower than 2%
  - Perhaps as low zero (Summers).
  - Reflects persistently lower growth rate in the rest of world.
- Combination of low growth, low real interest rates, low inflation rates suggests it’s a global ‘demand’ problem, not a supply problem.
Falling Potential A Global Phenomenon

Change in 2014 Potential Output Estimate Since 2007

Sources: Laurence Ball “Long-Term Damage From The Great Recession in OECD Economies”, IMF WEO 2008 & 2015
Declining Real Interest Rates and Inflation Expectations

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*Adjusted to Fed’s preferred PCE measure
If Summers is correct...

- Lower real interest rates will be a very *persistent* problem.
- Conventional monetary is unlikely to have strong effects.
- It’s unlikely that interventions that *temporarily* affect the real exchange rate can have a big impact on Israeli output.
- Israel should focus on fiscal policy and structural reforms to increase its competitiveness.