PETERSON INSTITUTE FOR INTERNATIONAL ECONOMICS

Consumption Taxes, Real Exchange Rates, and Trade Balances

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Conclusions

- Data broadly support full pass-through of consumption taxes into real exchange rate.
  - Estimates are not precise.
  - Exchange rates are far more volatile than tax rates.
  - CPIs have measurement issues and differences across countries.
  - Tax changes sometimes occur in mid-year.
- Data broadly support little or no effect of consumption taxes on trade balances.

Border-adjusted Consumption Tax

- Taxes on consumer goods and services are common around the world.
- Germany (2014) is typical:
  - Total government revenue: €1069 billion
  - Income taxes (corp. & personal): €333
  - Social security (payroll tax): €408
  - Property taxes: €28
  - Goods and services taxes: €296
    - VAT (general) €203
    - Specific (excise, etc.) €82

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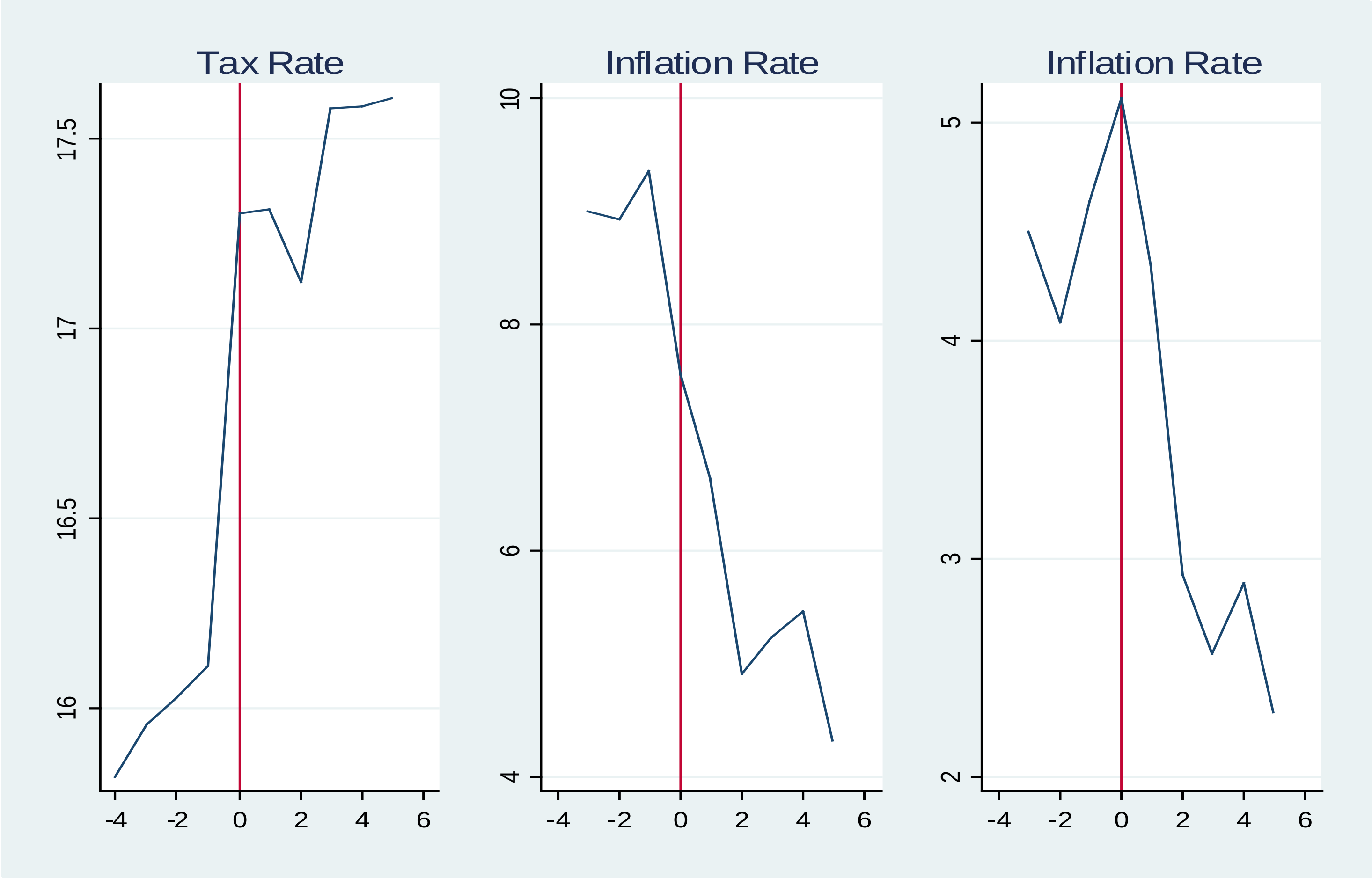
Event Study of VAT Introductions

- What happens when a VAT is introduced?
- To some extent, other goods taxes are reduced.
- But overall goods taxation tends to rise.
- Often part of other reforms, which have additional effects.

10 VAT Introductions



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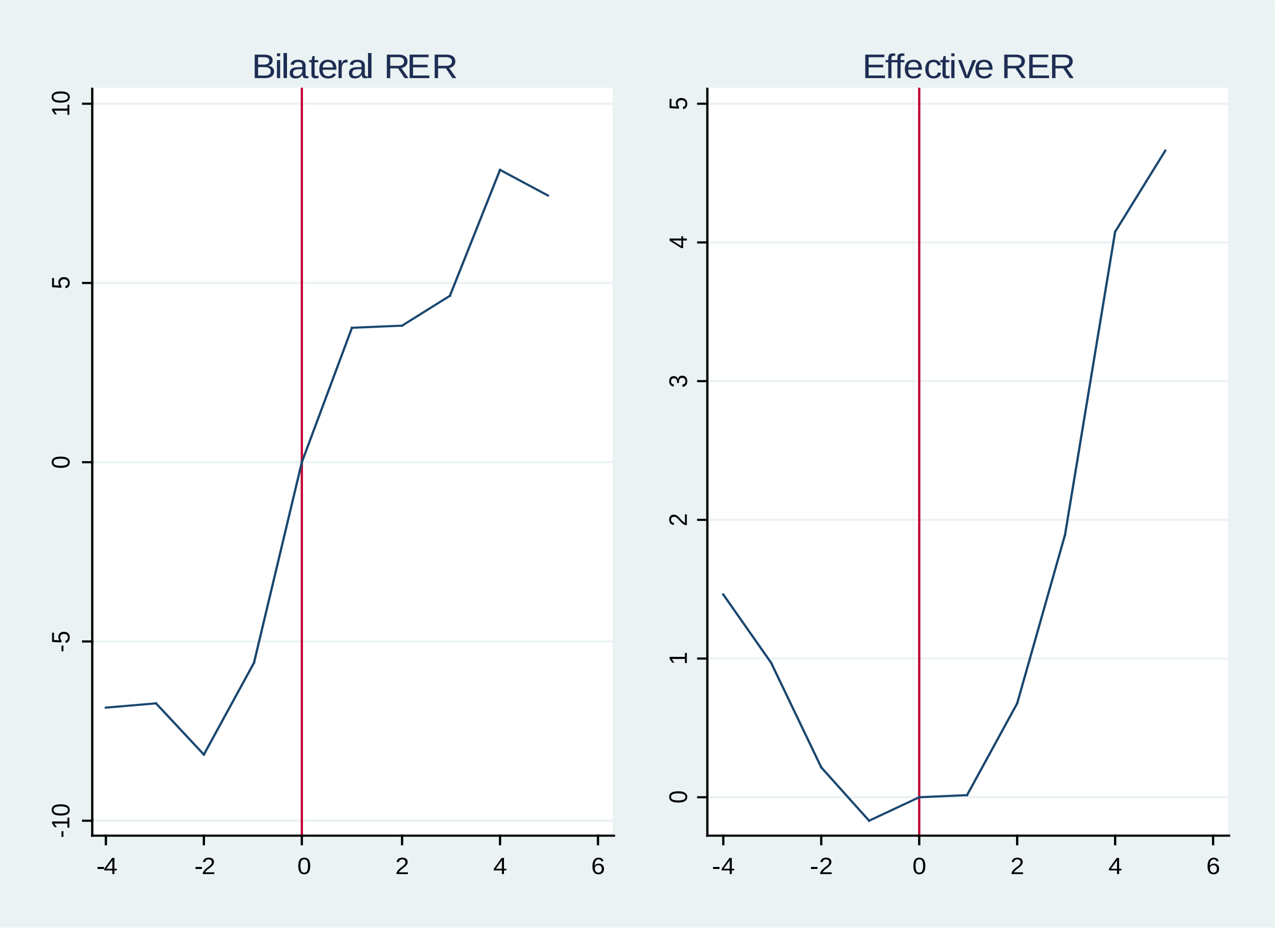

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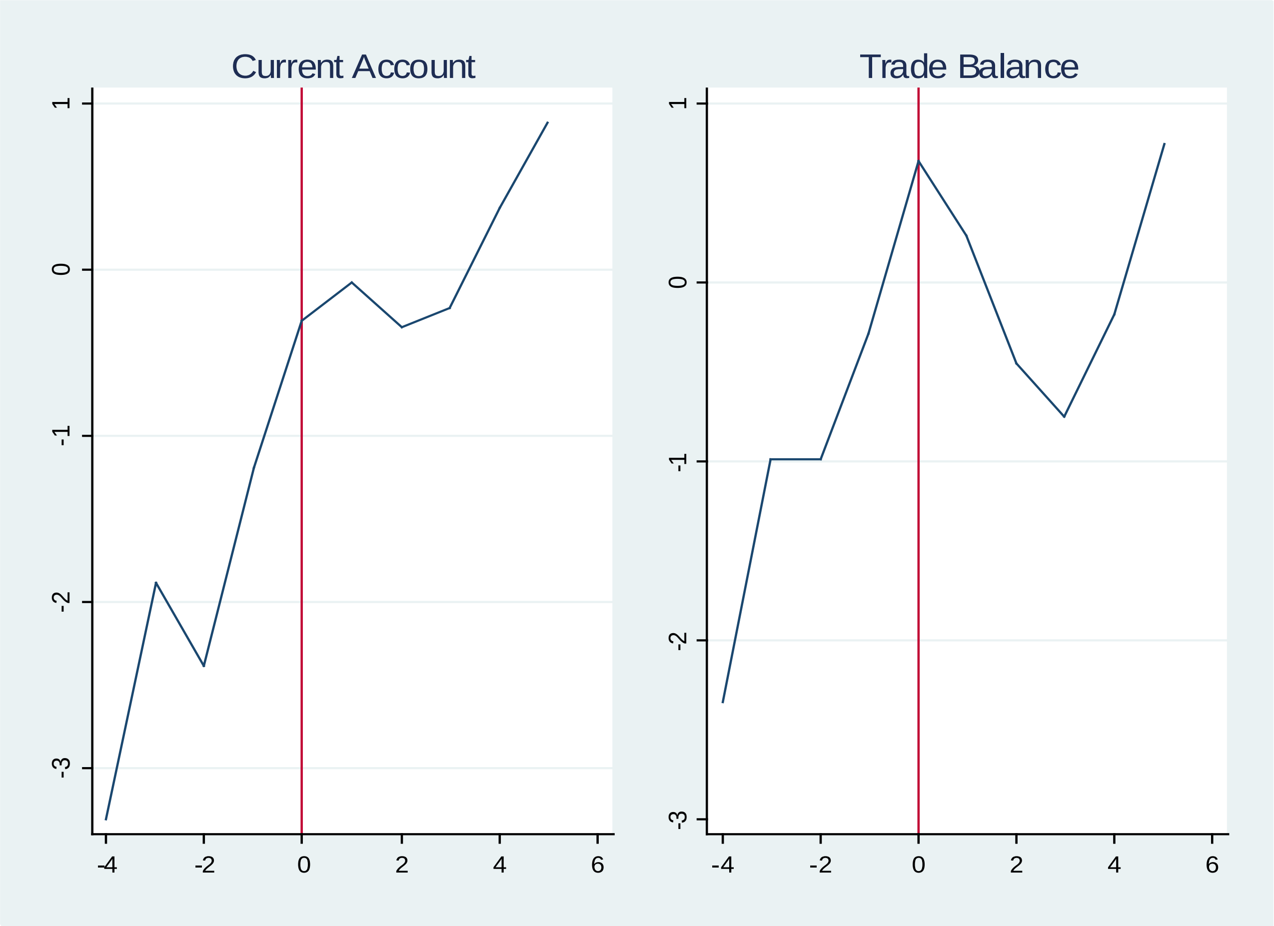


Regression Analysis

Long-run:

$$RER_{it} = \alpha\ (GSREV/CONS)_{it} + A\ (Controls)_{it}$$
$$+ \text{country effects} + \text{year effects}$$

$$(BAL/GDP)_{it} = \beta\ (GSREV/CONS)_{it} + B\ (Controls)_{it}$$
$$+ \text{country effects} + \text{year effects}$$

Dynamics:

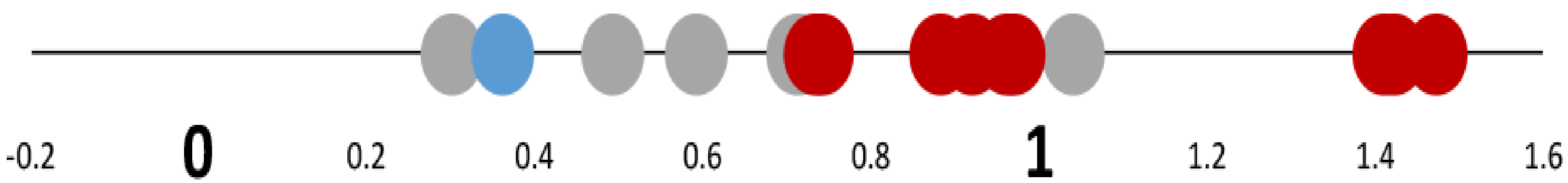
$$\Delta RER_{it} = \gamma\ (\text{Error Correction})_{it-1}$$
$$+ \Gamma\ (\Delta RER,\ \Delta(GSREV/CONS),\ \Delta Controls)_{it}$$

$$\Delta(BAL/GDP)_{it} = \lambda\ (\text{Error Correction})_{it-1}$$
$$+ \Lambda\ (\Delta(BAL/GDP),\ \Delta(GSREV/CONS),\ \Delta Controls)_{it}$$

Long-run Real Exchange Rate

- 16 Regressions, focus on long-run effect of consumption tax rate on real exchange rate (CPI-based)
- 8 with OECD data, 8 with World Bank data
- 8 on bilateral RER, 8 on multilateral RER
- 8 with controls (Govt Revenue, Fiscal Balance, Relative Per Capita GDP, Trend Growth Rate, FX Intervention, Net International Investment Position, Net Energy Exports, Output Gap, Inflation Rate), 8 without
- 8 with year effects, 8 without
- About 35 advanced economies, 1980-2015

Consumption Tax Rate Effect on Real Exchange Rate



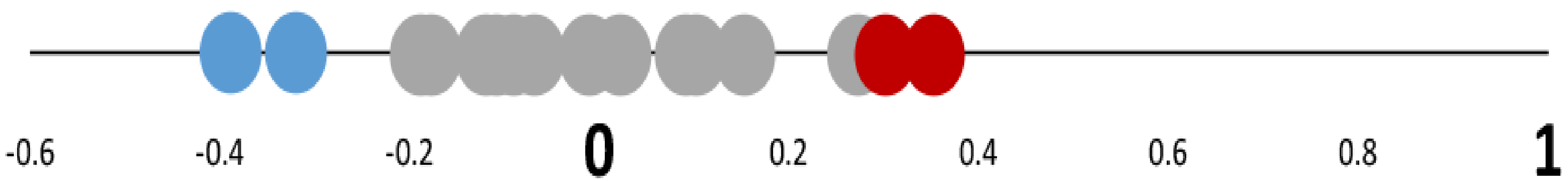
9 red dots are significantly greater than 0.

1 blue dot is significantly less than 1.

Long-run Trade Balance

- 16 Regressions, focus on long-run effect of consumption tax rate on trade balance
- 8 with OECD data, 8 with World Bank data
- 8 on current account, 8 on goods & services trade
- 8 with controls (Govt Revenue, Fiscal Balance, Relative Per Capita GDP, Trend Growth Rate, FX Intervention, Net International Investment Position, Net Energy Exports, Output Gap, Inflation Rate), 8 without
- 8 with year effects, 8 without
- About 35 advanced economies, 1980-2015

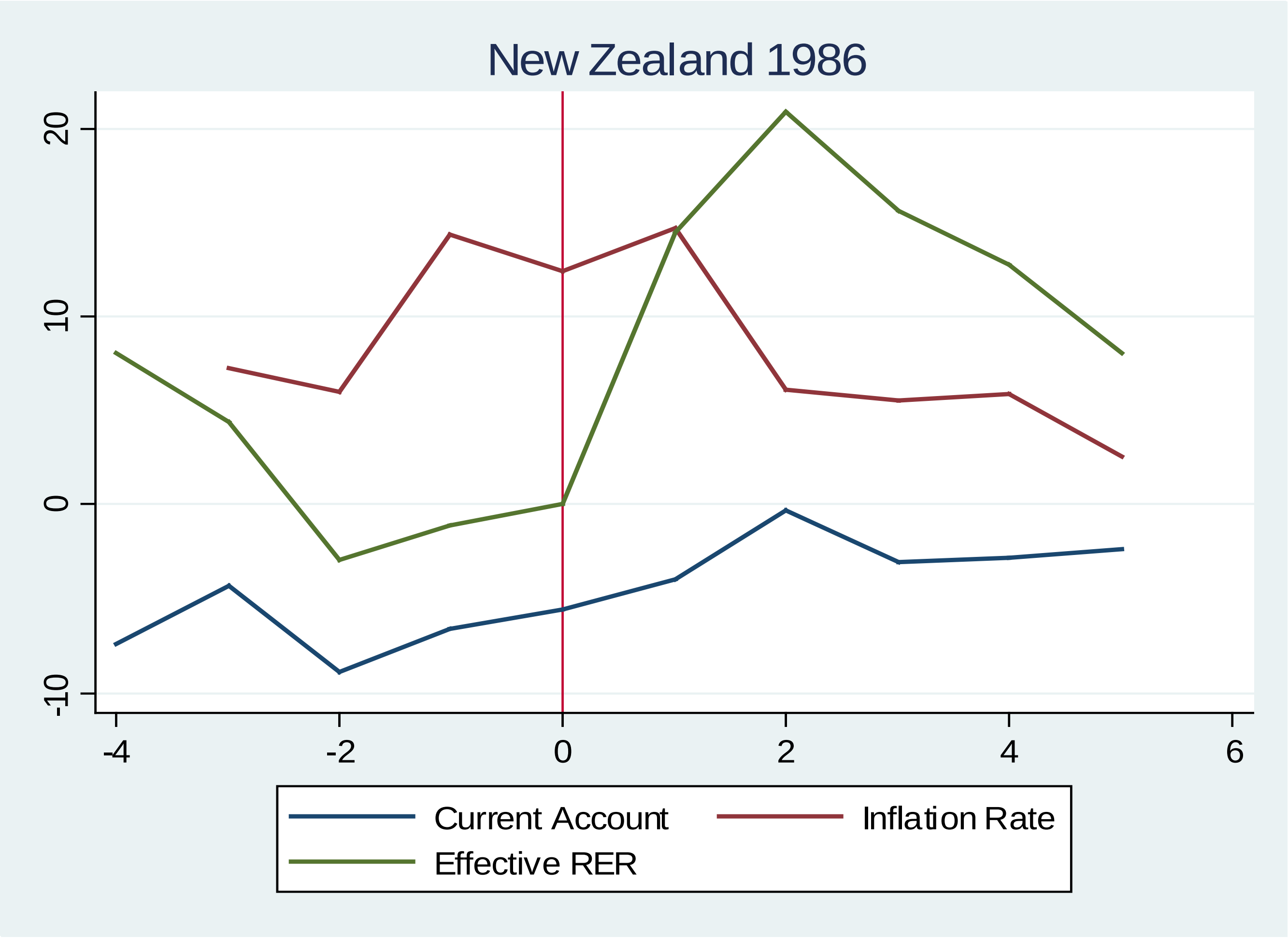
Consumption Tax Rate Effect on Trade Balance



2 red dots are significantly greater than 0.

2 blue dots are significantly less than 0.

Case Study


New Zealand 1986
20
10
0
-10
-4
-2
0
2
4
6
Current Account
Inflation Rate
Effective RER

Data Sources

Organization for Economic Cooperation and Development (OECD) *Annual National Accounts* and *Revenue Statistics* databases.

World Bank *World Development Indicators* database.

International Monetary Fund (IMF) *Balance of Payments* and *World Economic Outlook* databases.