The FTPL and History

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Next Steps for the FTPL | BFI 1 Apr 2016
Overview

- the broader a theory, the more interesting
- test it on more data
- macro’s hobgoblin: data is scarce
  - turn to history!
- history is nice because
  - environments become simpler (partly an optical illusion)
  - the theory might fail!

the boundary where a theory ceases/begins to apply makes you think harder about its components
Naive view of FTPL

- cat-fight between two equations over who gets to pick the equilibrium
- some “money” equation:
  - demand = supply (old-fashioned)
  - $i_t = f(x_t)$ (millennial)
- the government’s (budget/valuation) equation

$$\frac{B_{t-1}}{P_t} = E_t \sum_{t+k} \beta^k s_{t+k}$$

- important elements
  - $B_{t-1}$ nominal bonds, $P_t$ price level, $s_{t+k}$ future surpluses
  - are there two government authorities?
    - if so, one can talk about dominance
    - if not, the question becomes: which instrument is operative?
The elements become problematic

Money
  ▶ through much of history, some sort of commodity standard
  ▶ you might think basic price theory is enough, but it isn’t
  ▶ maybe all you need is a unit of account
    ▶ $i_t$ rule sets an exchange rate between units of account at $t$ and $t+1$
  ▶ what is a unit of account?
    ▶ no fiscal theory of the kg
  ▶ is not an economic object (in the Arrow-Debreu sense)
    ▶ partly a legal construct
      ▶ courts and statutes
      ▶ takes a long time for the two to converge
    ▶ seems to precede (coined) money
    ▶ always a link to some medium of exchange (there can be many)
    ▶ link can be tenuous at times (room for monetary policy)

Nominal bonds: what do they promise?
  ▶ some freedom to choose what will be repaid
  ▶ when does that freedom emerge?
Fun Facts

- money has been around far longer than government debt
Fun Facts: Money, ca650BC

trick question: what does it contain?
Fun Facts: Running primary surpluses, ca 650BC
Fun Facts

- governments have long played around with money
Fun Facts: The price vector in AD 301

Price of a chariot-horse: $\mathcal{D} \mathcal{C}=100,000$ denari!
Fun Facts: 17th c. Spain, value of copper coinage

Graph showing the value of silver maravedis in market and intrinsic for the period 1600 to 1660.
Now we have most elements:

- governments (spend, tax, borrow)
  - begin to be of some size (5-10% GDP)
  - have substantial debt
- money:
  - metallic standard
  - unit of account (recent development for debt contracts)
  - but there is room for monetary policy: change units of account/coin
  - fiat money too (since 15th c. at least in some form)
    - Amsterdam Wisselbank (wholesale payments) for 100+ years
- first large-scale experiments in “retail” fiat money
  - France 1720
  - Sweden, Denmark, Austria, Britain . . .
  - “state-contingent gold standard” of 19th c.
Monetary policy under a commodity standard: France
1715: France has a big debt problem

John Law
- set up a bank that issues redeemable paper money backed by private-sector loans
- create a joint-stock company whose revenues include \( \{s_{t+k}\} \)
- replace bonds \( B \) with shares \( S \) in the company

\[
\frac{S_{t-1}}{P_t} = E_t \sum_{t+k} \beta^k s_{t+k}
\]

- could have done a good job of short-circuiting the FTPL
- but he reconnected the two equations by converting \( S \) into \( M \) at fixed (and excessive) price
  - currency collapse
after Law, return to metallic standard

debt is un-monetized

government wants to lower prices
  carries out three, unannounced, proportional reductions in nominal money holdings
  FX adjusts, other prices don’t
  recession ensues
1724: foreign exchange market
1724: commodity markets

currency index

index: 1 = Jan 1724

Paris

Nantes
Assignats

- 1789: France has a big debt problem
- solution:
  - nationalize Church lands
  - redeem the debt with paper money ("assignats") backed by the lands
- works well until France decides to invade everybody
  - currency backing replaced with the guillotine
- works well until the backing is removed
  - currency ends in hyperinflation
  - France wins the war
  - gold inflows push Britain off gold
Biography of the assignat

- Terror
- Real value
- Gold value
- Millions of livres
- 1790, 1791, 1792, 1793, 1794, 1795, 1796