

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?



- ▶ money has been around far longer than government debt





trick question: what does it contain?

Fun Facts: Running primary surpluses, ca 650BC



- ▶ governments have long played around with money



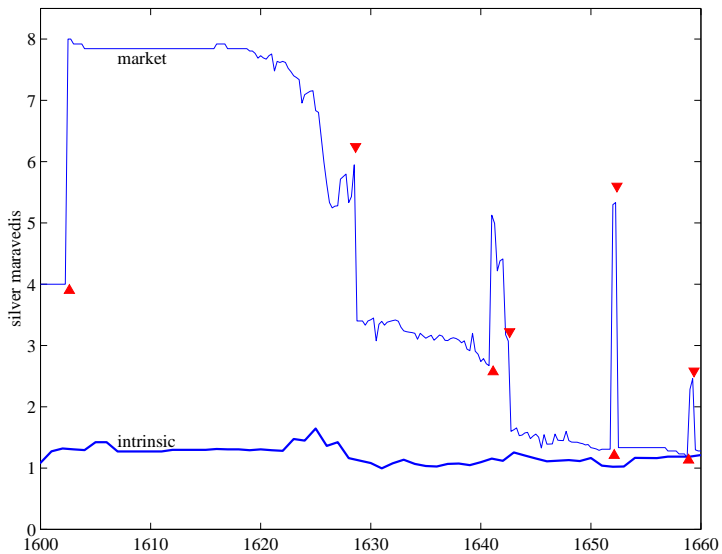
Fun Facts: The price vector in AD 301



Price of a chariot-horse: $\text{D } \overline{\text{C}} = 100,000$ denari!



Fun Facts: 17th c. Spain, value of copper coinage

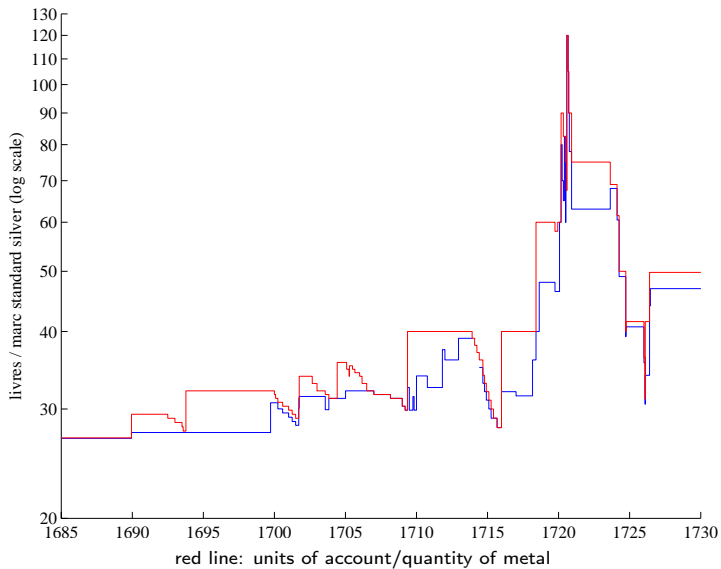


Now we have most elements:

- ▶ 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

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

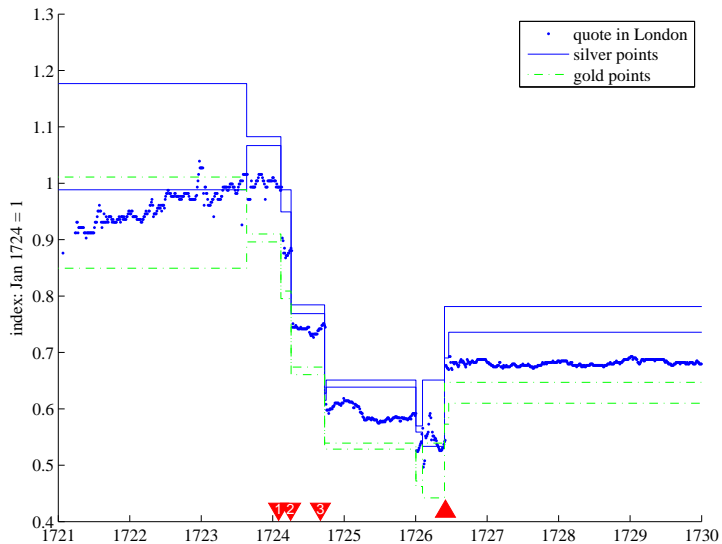
- ▶ could have done a good job of short-circuiting the FTPL
- ▶ but he reconnected the two equations by converting S into M at fixed (and excessive) price
 - ▶ currency collapse



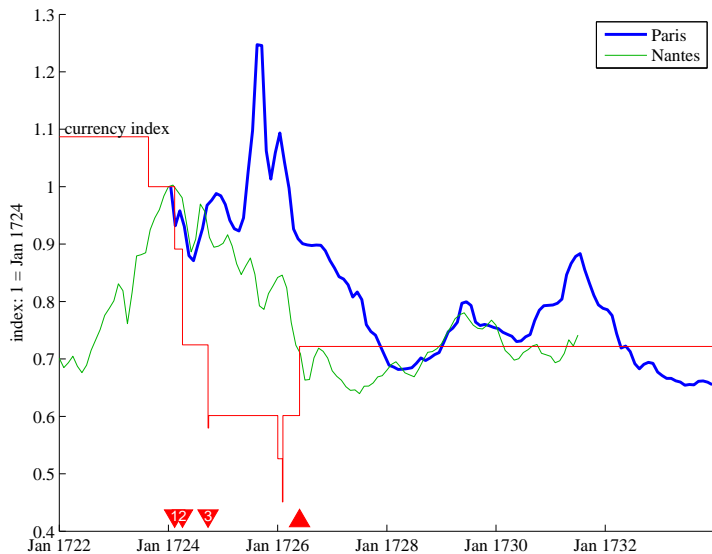
- ▶ after Law, return to metallic standard
- ▶ debt is un-monetized
- ▶ government wants to lower prices
 - ▶ carries out three, unannounced, proportional reductions in nominal money holdings
 - ▶ FX adjusts, other prices don't
 - ▶ recession ensues



1724: foreign exchange market



1724: commodity markets

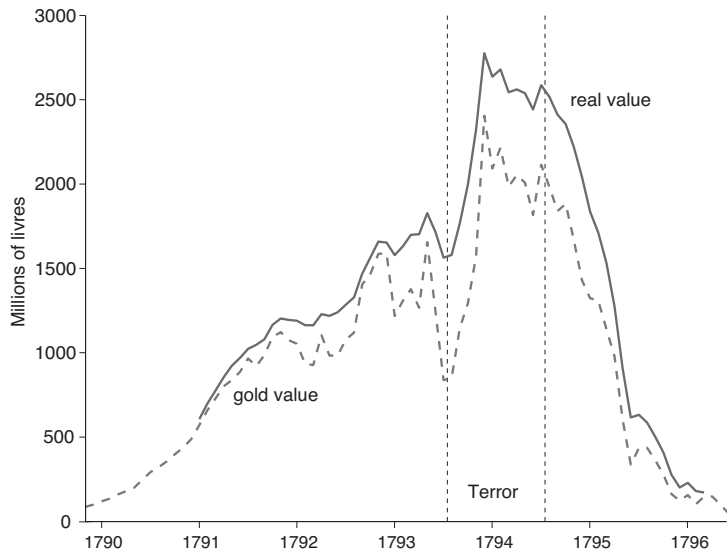


Assignats

- ▶ 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



News shock

