Is Economics Abandoning History?
Pisa, Saturday 7 March 2015

Economic theories in times of crises:
the international monetary economics case

Stefano Lucarelli
Money as an institution

- money is the first economic institution
  no money, no trade; different monies, different economic relations

- today we have no international monetary system
  1944: Bretton Woods system… 1971: post-Bretton Woods non-system

- we have global imbalances instead
  with bilateral settlements and unsettlements

- money is established ‘only through thinking about it’
  importance of elaborating “insight and ideas”
GROWING DEFICITS AND INSTABILITY OF THE VALUE OF THE DOLLAR

US current account and real exchange rate

Current account (% of GDP) Real exchange rate
Bretton Woods System (from 1944 until 1971)

- Part of the reorganization process following the II World War.
- Imposing fixed, but adjustable, exchange rates, on the basis of a gold-dollar system.
- Price of gold fixed at $35 per ounce, convertibility limited to foreign monetary authorities.
- The other n-1 countries fixed the price of their currencies in terms of dollars and thus implicitly in terms of gold. Exchange rate could fluctuate within a band of 1% above or below the par value.
- Possibility of changing the par value in case of fundamental disequilibria.
Bretton Woods System

Collapse of the System (1971)

Dollar not convertible for gold, reduction in American gold exchange reserves and reduction in coverage of liquid dollar liabilities of the USA with gold.
**Bretton Woods System’devised: two different views**

**MAINSTREAM**
Increasingly expansionary fiscal policy of the 1960s (Vietnam war + Great Society experiment) => accumulation of idle dollar balances => pressure on the money supply of the rest of the world => inflation

The collapse of BW is related to the unwillingness of foreign countries to import US inflation.

**POST-KEYNESIAN**
Full employment tends to increase the bargaining power of the working class => Pressures for higher nominal wages => (for a given rate of interest and a fixed nominal exchange rate) higher prices.

The abandonment of BW is not connected to the loss of credibility in the face of higher inflation but to the role of financial liberalization from the 60s.
In 1965 alone, French President Charles De Gaulle sent the French navy across the Atlantic to pick up $150-million worth of gold.
Neoclassical Approach

Labour Market

Goods Market

Money Market

\( Y = f(K, N) \)

\( Y = \frac{Mv}{p} \)
Neoclassical Approach: Say’s Law

The Scottish economist James Mill restates Say’s Law in 1808, writing that: “production of commodities creates, and is the one and universal cause which creates a market for the commodities produced.”
Fisher Equation of exchange

(1) \[ MV = PT \]

Equation (1) affirms that the total value of exchanges (\( PT \) – in a given period of time –) is equal to the money available for the exchanges themselves (\( MV; \) where \( V \) is the transactions velocity of money).
Neoclassical Approach: quantity theory of money

A theory of money is a quantity theory if we introduce behavioral hypothesis on $P$, $T$, $M$ and $V$, so that in the long run, we have:

\[ \begin{align*}
  PT &= MV \\
  P &= P(M)
\end{align*} \]
Consequences on the exchange rates determination

\[ e = \frac{P}{P^*} = \frac{M}{M^*} \cdot \frac{Y^*}{Y} \cdot \frac{v}{v^*} \]

Money and the Exchange Rate in the Long Run

- A permanent increase (decrease) in a country’s money supply causes a proportional long-run depreciation (appreciation) of its currency against foreign currencies
Purchasing Power Parity

- The trade balance drives the exchange rate and there is a systemic tendency for balanced trade to emerge as the equilibrium.

- Portfolio capital flows play no role.

- PPP assumes that trade flows dominate the foreign exchange market when in fact they do not: portfolio capital does!
Exchange rates between currencies have been highly unstable since the collapse of Bretton Woods System

The instability of rates since 1973 has thus been a severe disappointment. Some of the changes in exchange rates can be attributed to differences in national inflation rates. But yearly changes in exchange rates have been much larger than can be explained by differences in inflation rates or in other variables such as different growth rates in various countries' money supplies. (Krugman 2002)
Month-to-Month Variability of the Dollar/DM Exchange Rate and of the U.S./German Price-Level Ratio, 1974-2001

The much greater month-to-month variability of the exchange rate suggests that price levels are relatively sticky in the short run.

Source: OECD, Main Economic Indicators.
Keynesian Approach

\[ L = L_1(Y) + L_2(i) \]
According to Keynes, demand for liquidity is determined by 3 motives:

1. the transactions motive: people prefer to have liquidity to assure basic transactions, for their income is not constantly available. The amount of liquidity demanded is determined by the level of income: the higher the income, the more money demanded for carrying out increased spending.

2. the precautionary motive: people prefer to have liquidity in the case of social unexpected problems that need unusual costs. The amount of money demanded for this purpose increases as income increases.

3. speculative motive: people retain liquidity to speculate that bond prices will fall. When the interest rate decreases people demand more money to hold until the interest rate increases, which would drive down the price of an existing bond to keep its yield in line with the interest rate. Thus, the lower the interest rate, the more money demanded (and vice versa).
Consequences on the exchange rates determination

- $\Delta e \neq \Delta P/P^* = \Delta[(M/M^*) (Y^*/Y) (v/v^*)]$

- $Y$ cannot be considered as full employment income, so it may vary;

- The rate of interest may influence both $v$ (that is not constant) and $Y$ (through $I$); $Y = C(Y) + I(i, E) + G + [NX(Y)]$

- The role of expectations is crucial to determine the rate of interest ($i$), $Y$ (through $I$) and capital flows ($KA$).

- The $KA$ component in the BP is relevant to explain the exchanges rates volatility
Uncovered interest rate parity

\[(1 + r_S) = E(\$/FX) \frac{(1 + r_{FX})}{(\$/FX)} \]

where \(E(.)\) represents an expected value

(which theory of expectations?)

• The rate of return one could earn on an interest-bearing asset in the USA must be equal to the same amount translated into foreign currency (i.e. multiplied by \(FX/\$\)), earned (i.e. multiplied by \(1+r_{FX}\)), and then repatriated (i.e. multiplied by \(E(\$/FX)\))
Uncovered interest rate parity

• \((1 + r_s) = E(\$/FX) \frac{(1 + r_{FX})}{(\$/FX)}\)

• Were the left-hand side larger than the right, this would mean that agents expected the rate of return to be higher in the USA than elsewhere. This would attract capital into the USA.

• \(e = \$/FX = E(\$/FX) \frac{(1 + r_{FX})}{(1 + r_s)}\)

\[\approx E(\$/FX)/(1 + r_s - r_{FX})\]

• \(r_s\) down; \(r_{FX}\) up \(\Rightarrow\) dollar appreciation (i.e. rise in \(FX/\$\)). This process continues until the identity holds again.
The Dornbusch model is a hybrid: in the short run it obtains Keynesian results; in the long run it obtains the “Monetary Model” results.

Meese and Rogoff 1983 study the predictive power of different model. They find that a random walk is the best predictive “model”.

A random walk is a mathematical formalization of a trajectory that consists of taking successive random steps. It is a fundamental model for the recorded stochastic activity.
Random walk

a “drunk man walking”, that does not consider neither economic theories nor the movement of fundamentals, provides exchange rates volatility better than theoretical models!
Coming back to Keynes again

The fall of the apple ...
I also want to emphasise strongly the point about economics being a moral science. I mentioned before that it deals with introspection and with values. I might have added that it deals with motives, expectations, psychological uncertainties. …

It is as though the fall of the apple to the ground depended on the apple's motives, on whether it is worth while falling to the ground, and whether the ground wanted the apple to fall, and on mistaken calculations on the part of the apple as to how far it was from the centre of the earth.

J.M. Keynes, Letter to R. Harrod, July 1938.