

Analysing the performance of the Australian Economy since the \$A was floated

VCE Lecture
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Overview

- Research and study in economics
- Essential concepts for thinking about exchange rates
- Theory: the modern Mundell-Flemming model
- Application: analysis of the floating of the Australian dollar
- Discussion

Three propositions about economics

- Economics is an engine of analysis rather than a body of substantive results.
 - Implications:
 - Rote learning of economic facts is of little practical use;
 - Simplification and abstraction are essential components of economic analysis. This makes,...
 - Mathematics, statistics and quantification important tools; But, remember that,...
 - Economics is closer to biology than to Newtonian physics or the laws of Euclidian geometry.
 - View your analysis as an approximation to a much more complicated reality.
- The best way to learn economics is via analysis of real world issues.
- The study of economic history is an important source of economic understanding.

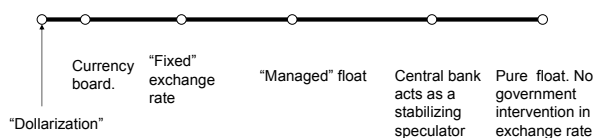
Nominal and Real exchange rates

- Nominal exchange rate: number of units foreign currency per unit of domestic currency.
 - e.g 75 US cents per Australian dollar.
- Real exchange rate: price of foreign goods relative to domestic goods expressed in the same currency.
 - Hamburger costs \$US 3.75 in US and \$A4.00 in Australia.
 - Real exchange rate is $\$4 / (\$3.75 / 0.75) = 4/5 = 0.80$.
 - When real exchange rate rises domestic goods become more expensive relative to foreign goods. For example if 93.75 US cents buys one Australian dollar. Then real exchange rate is 1.0.

Why the nominal exchange rate matters

- If prices are sticky (ie slow to adjust to shocks) then changes in nominal exchange rate move the real exchange rate and thus affect demand and supply.
 - Nominal exchange rate matters in the short run but not in the long run when prices are flexible.
- What's the evidence on price stickiness
 - The bulk of variations in real exchange rates is attributable to variation in nominal exchange rates.
 - In TD-MI survey about one half of prices have not changed in the past six months.

Essential Concepts: The exchange rate policy continuum



Theory

The modern Mundell-Flemming model

- Central concepts.
 - IS curve. Pairs of exchange rates and incomes (GDP) at which planned income equals planned expenditure
 - LM curve. Pairs of exchange rates and incomes at which money demand and money supply are equal (also demand for bonds equals supply of bonds).
 - Focus on short run equilibrium in goods and financial markets.
- Assume prices fixed in Australia and rest of world so changes in nominal exchange rate have real effects.
 - Short run analysis

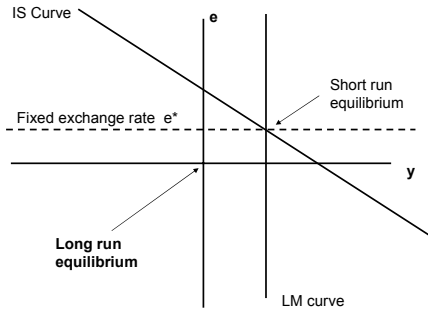
Formalizing the theory

- $y = \alpha e + \sigma_u u$ (IS Curve. Goods market equilibrium)^u
- $m = y + \sigma_v v$ (LM Curve. Financial market equilibrium)^v
- Where the following variables are the percentage deviation of output from long run equilibrium
 - y Output
 - m Money supply
 - e Exchange rate
- The following are shocks with mean zero and variance one
 - u is a real shock to goods market equilibrium;
 - v is a nominal/financial shock
- $\alpha, \sigma_u, \sigma_v$ are parameters.
- Policy interest is on variance of output $\text{Var}(y)$.

Shocking stories

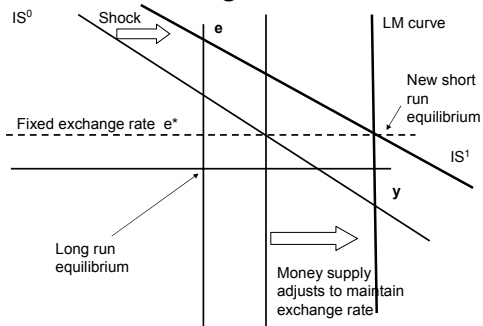
- The real shocks (u) comprise. Unanticipated shifts in investment, consumption, government expenditure, exports or imports.
- Nominal shocks (v) comprise:
 - unanticipated shifts in money demand arising because of financial innovation, changes in laws, financial failures and changes in consumer preferences.
 - Unanticipated shifts in monetary aggregates. (ie mistakes by the central bank)

Representing the theory using a diagram (fixed exchange rate)

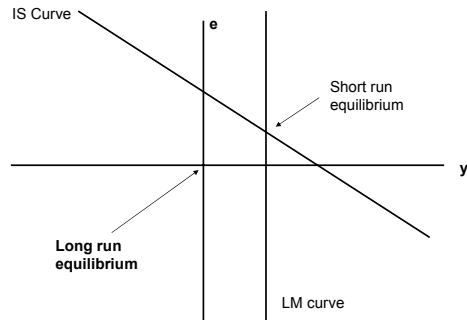


Memo: Axis are in blue and represent long run equilibria

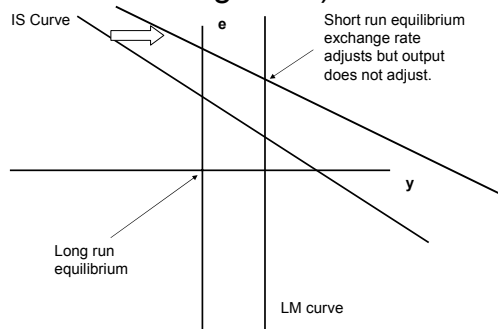
Effect of real shock with a fixed exchange rate



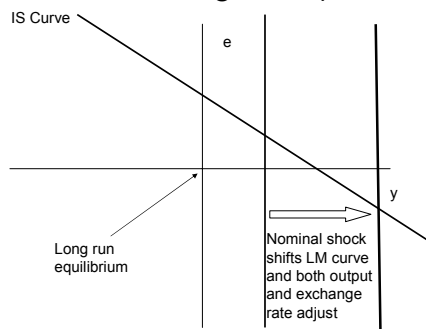
Representing the theory using a diagram (flexible exchange rate)



Effect of a real shock (flexible exchange rate)



Effect of a nominal shock (flexible exchange rate)



Impact of choice of exchange rate regime on volatility of the economy

- Under a fixed exchange rate
 - e is fixed so $\text{Var}(e) = 0$ and $\text{Var}(y) = \sigma_u^2$
 - Because the exchange rate is fixed the central bank cannot set monetary policy to counteract the effect of real shocks.
- Under a flexible exchange rate
 - money is at equilibrium value. ie $m=0$. So $\text{Var}(y) = \sigma_v^2$ and $\text{Var}(e) = \{\sigma_u^2 + \sigma_v^2 + \rho\sigma_v\sigma_u\}/a^2$
 - With flexible exchange rates, the central bank can set monetary policy to counteract the effect of real shocks. But this means that the exchange rate is more volatile.

Implications of the theory

- If nominal shocks are a larger source of variation than real shocks ($\sigma_v > \sigma_u$) then a fixed exchange rate will result in less volatile GDP.
 - Note government can influence variance of nominal shocks by:
 - Improved prudential regulation of finance sector;
 - Fostering an independent and well staffed central bank.
- If real shocks are a larger source of variation than nominal shocks ($\sigma_v < \sigma_u$) then a flexible exchange rate will result in less volatile GDP.

Application

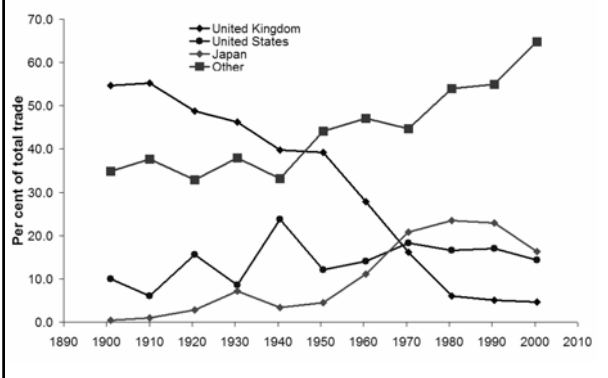
A brief history of the \$A exchange rate

- From 1931 to 1971 fixed against £UK;
 - Rest of world on fixed exchange rate system under Bretton woods agreement.
 - \$A trade-weighted exchange rate varied because of changes in Australia's trade pattern.
- From 1972 to 1976, \$A "fixed" against \$US.
 - \$A trade-weighted exchange rate now is varying for two reasons
 - Changes in Australia's trade pattern
 - \$US floating against other currencies
- From 1976 to December 1983, \$A fixed each day against a basket of currencies.
- December 1983 \$A Floated

Choice of currency(ies) to fix against

- In essence want to fix against a currency that has the following features:
 - Stable financial sector subject to less volatile nominal shocks than the Australian financial sector;
 - Central bank that makes fewer mistakes than does the Australian central bank
 - Experiences real shocks that are highly positively correlated with the real shocks experienced by the Australian economy.
 - This ensures that the foreign central bank will adjust its monetary policy in a way that counteracts the real shocks experienced by the Australian economy.
 - Has an economic structure that resembles that of Australia. Specifically,
 - Similar degree of price stickiness;
 - Similar labour market institutions (leading to a similar degree of wage stickiness)

Australian Trade Shares By Country



Volatility of GDP (standard deviation)

Before the Float

1959-1971	1972-1976	1977-1983
2.7	2.7	2.4

After the Float

1984-1986	1987-1990	1990-2000	2001-2004
2.2	1.6	1.7	1.0

Discussion

- Volatility was reduced immediately after the float. Explanations:
 - Nominal shocks had smaller volatility than real shocks;
 - Fixing against the US and then a Trade weighted basket was most likely not optimal.
- Volatility has declined over time. Explanations:
 - Better prudential regulation reduced volatility of financial sector (nominal shocks)
 - Reserve Bank improved its monetary policy.
- Conclusion: Theory provides a useful tool for interpreting the evidence on how the floating of the exchange rate, in December 1983, influenced Australian economic performance.
