Macroeconomics A; EI060

Quiz

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1 Core message of crisis models

Question: What are the core insights of the three generations of crisis model?

Answer: The first generation stresses unsustainable policies. A central bank cannot both finance the budget deficit and keep the exchange rate constant. It can do so as long as it has foreign exchange reserves that allows it to accumulate bonds and keep the money supply constant. When reserves run out, the financing of the deficit is done by monetary creation and the peg breaks. The insight is that the break of the peg is rationally sudden.

The second generation stresses multiplicity of equilbria. Abandoning the peg supports growth, especially when markets expect a depreciation (not delivering on this expectation reduces output and is costly), but entails a fixed cost. If markets expect no depreciation, keeping the peg is not costly in terms of output, and the country validates the expectation. If markets expects a strong depreciation, keeping the peg is costly, and the country abandons it.

The third generation puts leveraged banks at the heart of the story. A bank with a foreign exchange rate exposure sees its net worth decrease when markets expect a depreciation, and can go bankrupt. The government can bail out banks, but this requires an increase in the money supply (if reserves are insufficient) leading to a depreciation. There can be several points at which expected and actual depreciations match, and this include maintaining the peg and cases of abandoning it.

2 Sudden dimension of crisis

Question: Why do reserves collapse when the peg is abandoned in the first generation model?

Answer: The key point is that the model is under perfect foresight. Uncovered parity then always holds, and there are never any jumps in the exchange rate (exchange rate jumps in monetary models happen when there are unexpected changes).

Just before the peg breaks, the exchange rate is in line with the initial money supply. Just after the break, the new floating exchange rate reflects the current money supply and the future money

creation. As the exchange rate cannot jump, the money supply just before the break must exceed the money supply just after (so the money supply just before is equal to the money supply just after plus the term reflecting the future money creation).

The jump down of the money supply on the liability side of the central bank balance sheet must be matched by a jump down on the asset side. Holdings of domestic bonds don't jump, and instead steadily increase. The only post that can decrease through a jump is the foreign reserves, and thus they collapse in the last day of the peg, in a perfectly predictable way.

3 Multiple equilibria

Question: The second generation of crisis models stress the possibility of multiple equilibria. Are multiple equilibria always present?

Answer: No, the possibility of multiple equilibria requires that fundamental falls in a given range.

If fundamentals are very good, the central bank would abandon the peg only if markets expect a very high depreciation. But that expected values is higher than the depreciation that the central bank sets if it indeed abandons the peg. Therefore, expectations and actual outcome don't match, and the only equilibrium is to keep the peg.

If fundamentals are very bad, the central bank would abandon the peg if markets expect even an appreciation. An expectation of unchanged exchange rate is above that threshold and leads to bank to abandon the peg. It is thus not an equilibrium (peg expectations are not in line with the actual depreciation), and the peg must end.

Multiple equilibria can only happen in fundamentals are in a middle zone. If markets expect the peg to survive, then the banks face a limited pressure and deems that abandoning the peg is not worth it, thereby validating the expectation. If markets expect a depreciation, this may be enough to pressure the bank to abandon the peg, as keeping it would be to costly in terms of output, thereby validating the expectation.

4 Effect of reserves

Question: When does reserve accumulation or sales affect the exchange rate, for a given interest rate rule?

Answer: The effectiveness of reserves changes (exchange rate interventions), aside from the effect of interest rate movements, requires that UIP does not hold.

If UIP hold, private investors view domestic and foreign assets as similar (aside from the fact that they pay in different currencies). If the central bank buys foreign assets and sells domestic ones, the private investors do the exact opposite and nothing changes.

If however private investors do not view the two assets as quite similar, shifting their portfolio away from foreign assets towards domestic one require them to get a better return on foreign assets (compared to what UIP implies), which happens through the exchange rate. This is the portfolio

balance channel. It it likely to be stronger in times a tension, when private investors are reluctant to act as arbitrageurs in the foreign exchange market.

5 Empirical studies of interventions

Question: What are two dimensions that make the empirical analysis of effectiveness of foreign exchange interventions challeging?

Answer: The first is that we do not know what the exchange rate would have done without the interventions. Central banks don't intervene at random, but do so when needed. Consider a country where the exchange rate does not move much in normal time. During a particular time, market push the exchange rate towards a depreciation. If the central bank did nothing, the depreciation would occur. The central bank however intervenes and keeps the exchange rate stable. The intervention is thus a success, but an analyst looking at the data on exchange rate would see a stable one both in days when intervention takes place and it days when it does not. He could thus wrongly infer that interventions are not effective.

To address this challenge, researchers have tried to use instrumental variables (including changing volatility of the exchange rate in an ARCH estimation...but this is complex), or a Taylor rule for exchange rate movements.

The second challenge is that we don't know what the central bank is aiming for. Often central banks aim at limiting volatility, and not at a specific level of the exchange rate. They may then be successful even when the exchange rate moves, as long as it does so in a relatively smooth way.