International Economics
February 2, 2020
Filippo Santi and Julian Hinz

Problem Set 8 - Exchange rate regimes and the Optimal Currency Area

Exercise 1: **Quick Questions: Exchange Rate Regimes**

- **A statement like "The Japanese yen rose from 134 to 117 against the euro" makes sense because...**

  a. These numbers are indexes, defined relative to a base of 100
  b. The yen is a reserve currency
  c. The EU gains when Japan loses
  d. These numbers measure yen per uuro, not euro per yen
  e. These numbers refer to time of day that the change took place

  Solution: D

  A rise means that the yen appreciated against the euro: less yen are to be traded to get 1 euro

- **If you were to buy Japanese yen using US dollars on the 90-day forward market, you would:**

  a. Pay dollars now but receive Yen in 90 days
  b. Receive Yen now but pay dollars in 90 days
  c. Pay dollars now and receive Yen now
  d. Pay dollars in 90 days and receive Yen in 90 days
  e. Be breaking the law of international finance

  Solution: D

  The forward market implies that you are committing to exchange a currency for another at a pre-specified date, at an exchange rate that is known at the moment the agreement is made.

- **Define Covered and Uncovered Interest Parity conditions (abbreviated respectively as CIP and UIP)**

Solution:

The **UIP** holds the difference in interest rates between two countries should equal the relative change in currency foreign exchange rates with respect to the expected prevailing exchange rate.
The **CIP** states that interest rate differential between two currencies in the money market should equal the differential between the forward and spot exchange rates.

Both are based on the idea of the Law of One Price - i.e the idea that, once interest and exchange rates are taken into account, identical goods (such as money should be) must have the same value in different countries.

- **Analizing the intersection between trade policy and exchange rate: select which of the following should not cause the Mexican Peso to depreciate. Focus on likely direct links.**

  a. US impose quotas on Mexican exports to the country
  b. An increase in remittances from Mexican migrants to the EU
  c. An rise in Mexican interest rates
  d. A drop in Mexican interest rates
  e. US removing tariffs on Mexican automotive exports to the US
  f. The drop out of the US from the USMCA Trade agreement...again!
  g. All of the above
  h. None of the above

  Solution:

  C and **E** are the ones that are less likely to cause the Mexican peso to depreciate against the US$. Rather, their effect is expected to increase it. Conversely, both **A**, **D** and **F** are instead likely to generate a fall in the value of the Peso against the $. **B** lies in between, as it might also increase the value of the Peso, depending on how the remittances are sent and employed.

- **Suppose Thailand assists to a sudden burst of inflation, driven by a sharp increase in the price of rice and other primary commodities following a bad harvest. As a consequence, Thai prices rise much faster than,say, prices in Australia. This is expected to lead to...**

  Solution:

  a drop in the Thai Baht (the Thai currency) value with respect to the Australian dollar, explanable for instance by an increase in the amount of Baht available (Supply and Demand theory); a drop in the value of Thai labelled assets (lower interest rates - Asset Theory); a spike in the relative prices in Thailand compared to Aussie prices (PPP theory).

Exercise 2: **Open Question: The impossible Trinity**

Figure 1 below put in relationship exchange rate management, free capital flows, and a fully autonomous monetary policy.

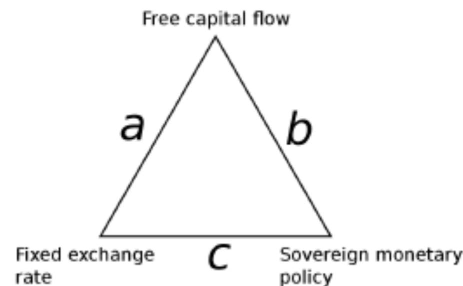

Figure 1: The Impossible Trinity

According to the either of mechanisms discussed in class, show why we cannot maintain a Peg and Free Capital Flows while preserving monetary sovereignity.

Solution:

The so called Trilemma (conceptualized by the economists Mundell and Fleming in the early ’60s) is based on the UIP.

A peg implies that the value of the domestic currency is kept anchored to another one. If capital is left free to move internationally, a government can no longer act on the interest rates (for instance by reducing them), because this course of action whould trigger a massive demand for foreign currency (as deposits labelled in foreign currency generate higher returns). This would in turn put excessive pressure on the exchange rate, as the government/Central Bank can only hope to rebalance by selling reserves, in order to preserve the stability of the foreign exchange rate.

Exercise 3: **Open Questions: Optimal Currency Area**

There are 6 (3+3) fundamental requirements that determine the "success" of curency area and it optimal size. Mention them, and discuss why they are fundamental for currency unions to hold.

- **Labor Mobility across regions / states in the CU.**

  Solution:

  If labor can freely move across regions, then idyosyncratic shocks affecting either national economies can be mitigated by migration, reducing the need for exchange rate manipulations and fiscal policy adjustments (that members of a CU give up).

- **Openness to Capital Mobility + Wage and Price Flexibility across the CU**

Solution:

CU is more effective among countries that trade substantially among each other, and where the ratio of tradable-to-non tradable goods and services is limited. Concerning price flexibility (wages are just the price for hiring labor), they are required to allow the market to allocate money and production where it is most needed to preserve the intra CU equilibrium.

- **Product diversification across regions / states in the CU**

  Solution:

  The more regions in a CU share similar production patterns, the more symmetric the shocks faced are going to be. This is crucial for fiscal and economic policies to be shared in times of need.

- **A Risk Sharing mechanism enabling fiscal transfers across regions**

  Solution:

  When members of a CU experience and idiosyncratic shock (countries in CU are never fully homogeneous, and the larger the union, the higher the probability of country-specific shocks to emerge), CU need a solidarity mechanism to be put in place to redistribute wealth (although this is rarely accepted by "healthy" countries).

- **Homogeneous Preferences**

  Solution:

  Homogeneous preferences are all that is required under the political point of view to define common policies and organize a common response against shocks. Sharing similar (aggregate) preferences facilitates bargain and allows countercyclical policies to be deployed more rapidly.

- **Solidarity (aka "Commonality of Destiny")**

  Solution:

  Nothing really to be said about.

Exercise 4: **The theme underlying all the six points reviewed in the previous question can be brought back to another basic concept: that of *Business Cycle*. How do you think the concept of business cycle enters the frame of a CU?**

Solution:

The business cycle is a concept the refers to the fluctuations of an economy. Such fluctuations can be divided in 4 phases, summarised in Figure 2 below.

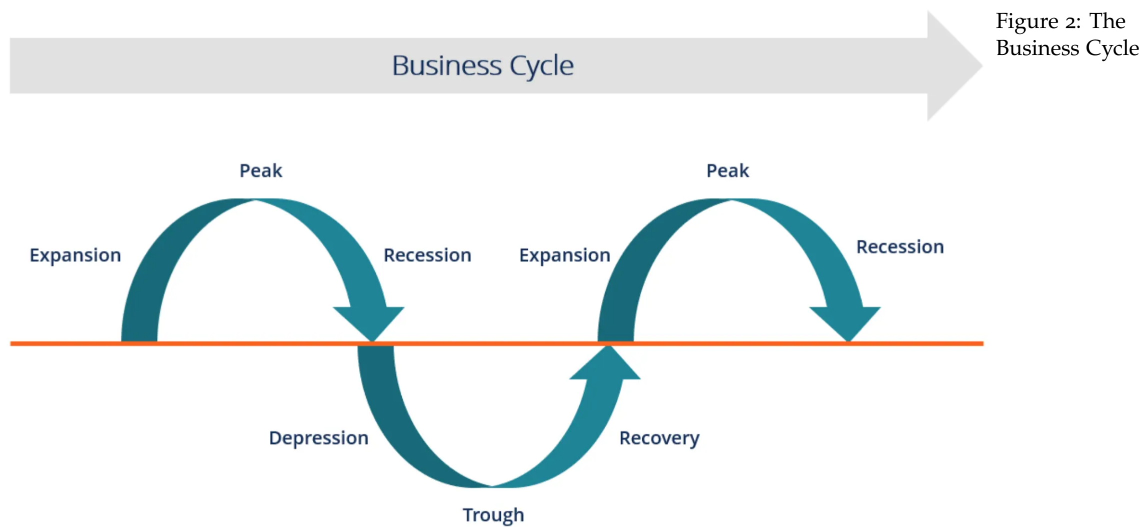

Figure 2: The Business Cycle

The four phases are physiological, as they cyclically repeat over time. The recession might be milder than the expansions that came before and that will come after: this generates growth. Viceversa, when the downturn of the cycle more than offset the surrounding expansion phases, countries experience recession.

Fiscal and Monetary policy can contrast the phases of the cycle. For instance, they can avoid an economy from overheating when in expansion phase, e.g. by rising the interest rates to reduce the amount of money that circulate. This policies should be implemented to stock resources to be freed once the economy surpasses the peak, in order to mitigate the effect of the recession phase (for instamce, cutting the cost of money to make cheaper to consume and disincetivize savings).

When countries in a CU syncronize their Business cycles, it is easier for the common monetary authority to adopt countercyclical measures without risking to raise protests.

How do you think this enters the debate between "virtuous" and "lazy" countries in the Euro Area?