

Andreas Krause



Currency crises

- We will now investigate conditions under which currency crises emerge.
- Currency crises mainly affect developing countries and are characterised by the sudden devaluation of the currency without apparent cause justifying such a larger change.
- The economic consequences of currency crises can be significant, especially if they trigger or are triggered by a banking crisis.
- We will here focus our attention on the effect on the exchange rate itself, not its wider economic implications.

Stable exchange rates

- ▶ Exchange rates are rarely fixed by a country, but often policy makers seek to maintain a stable exchange rate
- ▶ This is to avoid importing inflation and reduce the risk in any cross-border transactions
- ▶ Often observe a slow but steady change of the exchange rate, but occasionally large and sudden changes are observed
- ▶ These large and sudden changes are often associated with macroeconomic upheavals and are known as currency crises

- Many countries are seeking to maintain a stable exchange rate with their main trading partners.
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 - While it used to be common for developing countries to explicitly fix their currency to another currency, most commonly the US Dollar, by the central bank agreeing to exchange the two currencies at a set exchange rate, this practice has become unusual.
 - Instead policy makers seek to pursue economic policies, especially monetary policies that ensure that the exchange rate does not fluctuate too widely. In addition they might be intervening in the foreign exchange market directly by buying and selling the foreign currency, to stabilise the exchange rate.
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 - Such policies are justified by the aim of reducing the risk from importing inflation as imported goods become more expensive if the currency depreciates.
 - It is also said that this reduces uncertainties in international trade and the stability of the exchange rate makes foreign investments more attractive due to the reduced risk from exchange rate fluctuations affecting returns to foreign investors.
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 - What we often see is that currencies fluctuate in a narrow band, which often drifts over time.
 - On occasions we see a sudden sharp devaluation of a currency; it is these sharp devaluations, that we are interested in.
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 - Such sudden devaluations have significant macroeconomic consequences and although we do not consider them here in detail, they show the importance of understanding such events.
 - If the devaluation of the currency is not justified by a sudden change in macroeconomic factors, we refer to a 'currency crisis'.
- We will discuss two different types of currency crises that have quite different origins.

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 - ▶ This is to avoid importing inflation and other problems associated with a floating exchange rate
 - ▶ Often observe a slow but steady change of the exchange rate with occasional large and sudden changes or shocks
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Types of currency crises

- ▶ Currency crises are most traced back to macroeconomic imbalances that make countries vulnerable
- ▶ The final events leading to a currency crisis is often referred to as a speculative attack on the currency
- ▶ At other times, policy makers come under pressure from the markets to re-value their currency as the current exchange rate is no longer sustainable
- ▶ We will discuss both types of currency crises

- We can in principle distinguish two types of currency crises, one where there is a macroeconomic vulnerability that leads to an exaggerated adjustment of the exchange rate and the other where there is no such vulnerability, but a currency crisis emerges due to the expectations of market participants.
 - ▶ In many cases macro economic conditions in a country affected by a currency crisis were such that any small change in this conditions would trigger processes that would result in significant adjustments in the economy, including the exchange rate. Such countries are therefore vulnerable to seemingly small events having a significant impact on them.
 - ▶ Once investors become aware of events that are likely to trigger a currency crisis, they might well 'jump ahead' and anticipate the currency crisis emerging, accelerating the devaluation of the currency. This is then referred to as a speculative attack; but these are often only the result of already present vulnerabilities and the process is only accelerated.
 - ▶ However, at other times no such vulnerabilities exist and it is only the behaviour of investors forcing policy makers to devalue their currency. This can occur if market expectations on the sustainability of an exchange rate change and in reaction to this, the policy maker faces too high costs in maintaining the existing exchange rate.
 - ▶ The following models will consider both types of currency crises.
- We have to distinguish models of currency crises with those of models for a wider economic crises where changes to the exchange rate have a basis in macroeconomic conditions. We are here only interested in models where the macroeconomic conditions do not justify the observed devaluation of the currency.

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Speculative attacks

- ▶ While currency crises often have their origin in macroeconomic imbalances, a currency crisis can be triggered by changing expectations about the policy maker's decision
- ▶ Once a country is vulnerable, expectations might change from expecting the policy maker to maintain the exchange rate to changing it
- ▶ If expectations change, the equilibrium can change and cause a currency crisis
- ▶ We will look at how expectations can become self-fulfilling if a country is sufficiently vulnerable due to its macroeconomic performance

- We will first look at a model of what is sometimes referred to as 'speculative attacks' on a currency.
- ▶ The idea of this model is that a currency crisis is not triggered by weakening macroeconomic conditions, but merely by the expectations of market participants that a currency crisis will occur.
- ▶ Once a country has reached a state where the macroeconomic conditions are such that the current exchange rate can be maintained, but an alternative is also sustainable, a currency crisis can be triggered by changing opinions on the likelihood of a currency crisis.
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 - We will see that once expectations change, a different equilibrium is reached,
 - and this change of equilibrium causes the currency crisis as the exchange rate changes significantly.
- ▶ We will explore how such a change in expectations can cause such a currency crisis and what conditions are required for such a possibility.
- we will now present a simple macroeconomic model that prominently includes the exchange rate as a key component.

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- we will now present a simple macroeconomic model that prominently includes the exchange rate as a key component.

Speculative attacks

- ▶ While currency crises often have their origin in macroeconomic imbalances, a currency crisis can be triggered by changing expectations about the policy maker's decision
- ▶ Once a country is vulnerable, expectations might change from expecting the policy maker to maintain the exchange rate to changing it
- ▶ If expectations change, the **equilibrium can change** and cause a currency crisis
- ▶ We will look at how expectations can become self-fulfilling if a country is sufficiently vulnerable due to its macroeconomic performance

Speculative attacks

- We will first look at a model of what is sometimes referred to as 'speculative attacks' on a currency.
- ▶ The idea of this model is that a currency crisis is not triggered by weakening macroeconomic conditions, but merely by the expectations of market participants that a currency crisis will occur.
- ▶ Once a country has reached a state where the macroeconomic conditions are such that the current exchange rate can be maintained, but an alternative is also sustainable, a currency crisis can be triggered by changing opinions on the likelihood of a currency crisis.
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 - We will see that once expectations change, a different equilibrium is reached,
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Self-fulfilling currency crises

- We will focus our investigation on the exchange rate and will ignore other implications of the model, such as the impact on the total welfare in the economy.

The importance of expectations

- ▶ Multiple equilibria can emerge if a country's economy is weakened and once expectations about the stability of the currency change, it is optimal to adjust its exchange rate
- ▶ As the currency crisis only emerges if it is expected to emerge, it is a self-fulfilling currency crisis
 - ? If the policy maker re-affirms that the exchange rate will be kept stable, will that ensure a currency crisis is averted?
 - ! While a policy maker can give such assurances, it is whether the market believes them as the costs of changing the exchange rate is lower, if the market believes the policy maker to give in to pressure, a currency crisis will happen

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Weak macroeconomic fundamentals

- ▶ While expectations are important, exchange rates are determined by macroeconomic conditions and they in turn affect macroeconomic conditions
- ▶ A devalued currency will affect investments negatively as less resources are available if foreign debt has to be serviced
- ▶ These lower investments will affect the economy and in a downward spiral can cause a currency crisis
- ▶ We will determine which factors make a country vulnerable to such currency crises

- Currency crises can not only be triggered by the change of expectations, but we will now see that they can also occur in response to a small change in macroeconomic conditions.
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 - Lower investment will affect the economy, such as production and consumption,
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- ▶ We will determine which factors make a country vulnerable to such currency crises

- Currency crises can not only be triggered by the change of expectations, but we will now see that they can also occur in response to a small change in macroeconomic conditions.
 - ▶
 - market expectations are certainly important to maintain trust and a stable exchange rate, but exchange rates are used to ensure markets are in equilibrium and hence macroeconomic conditions will affect the exchange rate.
 - But it is also that the exchange rate will affect macroeconomic conditions; for example the exchange rate will determine the costs of imports and the revenue obtained from exports.
 - ▶ A weaker currency will require larger payments on foreign debt as well, reducing the resources available for investment.
 - ▶
 - Lower investment will affect the economy, such as production and consumption,
 - and if lower consumptions, for example, leads to less investment, the economy might enter a downward spiral. Through the influence of macroeconomic conditions on exchange rates, this might cause a currency crisis.
 - ▶ We will here look at a model that will established which factors make a country vulnerable to such an event. We will see how a small change in one variable can have a significant impact on the exchange rate.
- The impact of the small change on the exchange rate is not proportional to the change in the macroeconomic conditions, thus we identify this event as a currency crisis.



Andreas Krause

Debt-triggered currency crises

→ We will now develop a microeconomic model that includes the exchange rate and as before, we will neglect as far as possible the effect on other variables.

Vulnerability to currency crises

- ▶ Countries relying on foreign debt, a current account surplus, and being highly leveraged are vulnerable to devaluations
- ▶ These devaluations are required to return the economy to an equilibrium and the devaluation must be in proportion to the size of the shock
- ? A currency devalues significantly; is this inevitably a sign for a currency crises?
- ! Currency crises are based on weak macroeconomic fundamentals that cause the currency crises, but a devaluation was in no relation to the size of the shock. A sharp devaluation could also be the result of much worsening macroeconomic fundamentals and be fully justified by the size of the shock.

Vulnerability to currency crises

- We have seen that some countries may be susceptible to currency crises and a small change in macroeconomic condition can trigger a change of the equilibrium, causing a disproportionate change in the exchange rate.
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 - We have seen that vulnerable countries are those that rely on large foreign debt,
 - low imports and high exports, thus a large current account surplus,
 - and who rely on financing investments from foreign sources.
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 - A small change in the current account or in capital flows in the model set in motion a dynamic adjustment process to return the economy to an equilibrium; this equilibrium was a different equilibrium to the one obtained before and included a large devaluation of the currency.
 - This devaluation is too large to be justified by the size of the macroeconomic shock the country has received.
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- Thus some countries might be in a situation where they are vulnerable to a currency crisis for due to the existence of multiple equilibrium exchange rates and any shock might trigger a movement to another equilibrium.

Vulnerability to currency crises

- ▶ Countries relying on **foreign debt**, a current account surplus, and being highly leveraged are vulnerable to devaluations
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Summary of key results

- ▶ Countries are vulnerable to currency crises from weak macroeconomic fundamentals
- ▶ Such weak macroeconomic fundamentals can cause self-fulfilling expectations of a change of the exchange rate to move the country to equilibrium
- ▶ The origin of currency crises are weak macroeconomic fundamentals, although the timing of the currency crisis might not show a significant change in them
- ▶ They are caused by changing expectations of an adjustment by the economy to a new equilibrium after a (minor) shock

- We can now summarize some key points about currency crises.
- ▶ Generally, countries become susceptible to currency crises due them exhibiting weak macroeconomic conditions.
 - ▶
 - Weak macroeconomic conditions can then open the door for self-fulfilling expectations to trigger a currency crisis
 - or small shock might trigger an adjustment process that results in a change of equilibrium, that causes a currency crisis.
 - ▶
 - The key origin in all cases are the weak macroeconomic conditions, but the mechanisms that triggers the currency crisis differ.
 - We might not see a significant change in the fundamentals of the economy, or even none at all.
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 - The large adjustments we observe in the exchange rate are the result of expectations changing
 - or the economy adjusting to a different equilibrium.
- Currency crises are very visible events with a large change in the exchange rate, but we have seen that the events triggering such a currency crisis do not need to be significant in itself; this makes identifying the cause of a specific currency crisis difficult.

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Summary of key results

- ▶ Countries are vulnerable to currency crises from weak macroeconomic fundamentals
- ▶ Such weak macroeconomic fundamentals can cause self-fulfilling expectations or a change of the exchange rate to **return the country to equilibrium**
- ▶ The origin of currency crises are weak macroeconomic fundamentals, although they are not sufficient
- ▶ They are caused by changing expectations, which are usually self-reinforcing
- ▶ Self-fulfilling expectations can be broken

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 - or small shock might trigger an adjustment process that results in a change of equilibrium, that causes a currency crisis.
 - ▶
 - The key origin in all cases are the weak macroeconomic conditions, but the mechanisms that triggers the currency crisis differ.
 - We might not see a significant change in the fundamentals of the economy, or even none at all.
 - ▶
 - The large adjustments we observe in the exchange rate are the result of expectations changing
 - or the economy adjusting to a different equilibrium.
- Currency crises are very visible events with a large change in the exchange rate, but we have seen that the events triggering such a currency crisis do not need to be significant in itself; this makes identifying the cause of a specific currency crisis difficult.



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