# Currency-stock market dependence during different market conditions

**Due to the growth and globalisation of stock markets, it is reasonable to assume that they should be increasingly important in the determination of exchange rates. It is not obvious what this dependence would look like, however, since it depends on how foreign investors act. For example, do they actively seek out outperforming markets, or are they more concerned with being diversified to avoid large losses? Furthermore, such a dependence might be impacted by prevailing market conditions such as the level of financial uncertainty**.

## Scope and objectives

There are two ways in which we could assess how a stock market performs. First, we might do this in absolute terms: "the market performed well today, since it went up 2%". Second, we can look at it in relative terms: "the market went up 2%, but other markets went up 3%, so it actually underperformed".

Using twenty years of data, this thesis looked at both these two types of performance for the Swedish stock market and investigated its dependence with the Swedish Krona (SEK). By also considering the prevailing financial uncertainty at the time, the dynamic aspect of this dependence was assessed.

Because the strength of a currency cannot be determined in isolation but only in reference to other currencies, and the relative performance of a stock market needs a point of reference, the three markets of EU, USA, and Japan were used as references.

In each case, the 3-dimensional dependence structure between the exchange rates, the Swedish equity market, and financial uncertainty was modelled. From this structure, it was possible to assess the dependence between the first two given a value of the third.

## Results

For the absolute performance of the stock market, a positive dependence with the SEK was found. In other words, when the stock market went up, the SEK generally did as well, and vice versa. This positive dependence was stronger when financial uncertainty became larger. In calm periods, the two moved more independently.

Due to the globalisation of international stock markets, they are increasingly moving together; if the Swedish stock market has a bad week, so does probably the US market. In contrast, for a given exchange rate (e.g., SEK/USD), the strengthening of one currency implies the weakening of the other. Considering this, our results highlight an important characteristic of the SEK: in bad times when stock markets go down, it will weaken against the referenced currencies. In good times, however, it will strengthen against them.

For the relative performance of the stock market the dependence was instead negative, meaning that when the Swedish stock market outperformed the markets of US, EU, and Japan, the SEK actually weakened against their currencies. This creates a potential opportunity for foreign investors: they can buy into markets that have performed well, and do so cheaply since the local currency has lost value. Furthermore, in contrast to the absolute case, this dependence was not affected by shifts in financial uncertainty.

## Potential explanations

The weakening of the SEK during bad times could be due to a "flight-to-safety" effect in which investors want to hold currencies they perceive to be safe when uncertainty is high. If such an effect exists, the results suggest that the SEK is considered less safe than the referenced currencies, perhaps due to Sweden being a smaller economy.

The negative dependence in the relative case could be due to investors continuously rebalancing their portfolios. If a market performs significantly better than others, its relative weight in a diversified portfolio will become too high. Foreign investors wanting a limited exposure to each market will therefore need to sell part of their holdings, and as they convert back the proceeds to their home currencies, the local currency will drop in value.