The Uncovered Interest Parity Puzzle

A possible trend breaking?

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Abstract:

Uncovered interest parity (UIP) is one of the key assumptions in economic and finance when modelling exchange rates. However, previous empirical literature has offered little support for the theory, almost constantly rejecting it. A recent study, though, came up with results supporting it, suggesting the financial crisis of 07' could have played a vital role.

This thesis investigates UIP between the Swedish and American currencies for the years 1993 to 2024, divided into two periods, before and after the financial crisis. The results of the study are similar to the ones mentioned above, indicating a clear trend breaking after the financial crisis.

The results show that UIP has existed between the two currencies after the financial crisis, as opposed to the first period. Also, the findings of this thesis, together with those of other studies listed, offer support to the *possibility* of an overall change in UIP after the financial crisis.

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Introduction

Uncovered interest parity (UIP) is perhaps one of the most established macroeconomic and financial theories when modelling exchange rates. It states that there should be a one-to-one ratio between two countries differences in interest rates and exchange rates movements. The interest rate differential between the domestic and foreign countries should equal the change in the exchange rate (denoted as domestic currency in terms of foreign).

$$R - R^* = \frac{E^e - E}{E} \tag{1}$$

Based on this, a high-interest currency should depreciate until an equilibrium is reached. As it turns out, though, many studies over the past several years have found this relationship not to hold. The currency with the high interest rate has instead tended to appreciate, i.e. increase in value relative to the one with the lower interest rate. One of the most conventionally accepted theories for explaining exchange rate movements has indeed seemed to predict them totally wrong. This is, however, not a recent discovery. UIP has been under scrutiny for a long period of time and studies both now and then seem to arrive at similar conclusions.

If we assume the one-to-one ratio discussed in the previous paragraph, regressing exchange rate changes on interest rate differentials should result in a β value equal to one (1). This has however, like already stated, not been the case according to several studies over the years. Studies made in the 90's usually found β to equal around minus three (-3), indicating a clear appreciation of the high-interest currency. The pattern has since continued – dubbed the *UIP puzzle.* Referring to the equation above (1), this means that an investor that invested in the high-interest currency made more money than the one investing in the lower-interest. This is normally supposed to be offset by a move in the exchange rate, according to UIP. However, since the high-interest currency appreciated that was not the case. In fact, the investor that invested in the high-interest currency made money on both parts – the interest rate and the exchange rate.

UIP, however, makes many strong assumptions that is not always true in the real world, offering a possible explanation as to why it has previously failed. UIP assumes perfect capital mobility, no transaction costs, rational expectations from investors and no risk premiums, to name the most notable ones (Krugman 2014). It is fair to say that it is hard for all these assumptions to be upheld at once, all the time. Temporary crisis, such as the financial crisis or the corona pandemic, can throw the world into chaos. It is heard to see, then, how investors, with limited information about the near future, can make completely rational decisions. Sanctions or trade wars could arguably alter perfect capital mobility, while conflicts or political unrest could make investors demand risk premiums. There exists no lack of possible reasons as to why UIP has not been upheld in the past. However, the most recent one did in fact find empirical evidence supportive of UIP after the financial crisis of 07', using short-term interest rate data. Several currency-pairs were tested, however the Swedish krona was not one of them. Could this recent discovery finally offer some support for UIP after so many did no, and if so, what part did the financial crisis play?

This study aims to follow up on previous research and investigate whether UIP has between upheld between the Swedish (a currency often neglected in previous studies) and the American currency over the years. Similarly, short-term interest rate data will be used, and the study will be divided into two periods, 1993:1 to 2007:6 and 2007:7 to 2024:1, to investigate whether the financial crisis has marked a shift in UIP. The study will be limited in that way that it will only investigate *whether* UIP has been upheld during these periods and *whether* any differences in the results can be found, with regard to the financial crisis. The underlying reasons as to why UIP might have failed or not will not be investigated, as this is not feasible within the scope of a bachelor thesis. However, a few possible reasons will be discussed, although its primarily objective is to serve as suggestions to further research.

In the next sections the Literature review is given, followed by Theoretical framework and Data & Methodology. Results & Analysis, followed by the Conclusions section, ends the thesis.

Literature review

Several studies have been made on the topic in the past, where many of them find little empirical support for UIP. McCallum (1994) examined historical data and found that exchange rates did not move as predicted by UIP. He observed β values of around minus three (-3), as did Engel (1996), concluding that high-interest currencies tended to appreciate rather than depreciate, contrary to UIP. He offered several explanations as to why, many of whom are in direct violation of key UIP assumptions, such as perfect capital mobility, rational expectations and no transaction costs. Between the presence of risk premiums and interventions in the market by central banks, he put extra focus on the latter. Monetary policy makers, he argued, have a wish for a stable exchange rate, thus they intervene, undermining UIP.

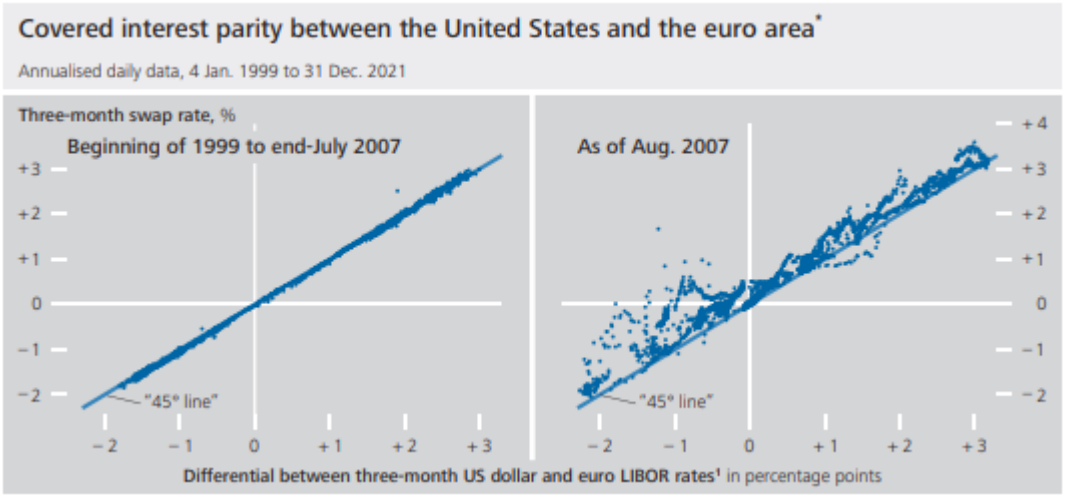
Alexius (1998) concluded that many of the findings that rejected UIP did so based on factors that was a direct consequence of their use of short-term interest rate data. She argued – just like McCallum – that short term interest rates are subject to short term monetary policy, aimed at affecting the exchange rate. By instead using long term interest data she came up with positive β values, much more adherent with UIP. She tested 13 currencies against the American dollar, of which ten were statistically significant. The Swedish krona was among the currencies not statistically significant, a key factor when choosing a currency for this thesis. One major problem that she stumbled upon while conducting the study was coupon payments. At first, she regressed without taking coupon payments into consideration, assuming all bonds are traded at par and the yield curve being flat. She realized those assumptions did not hold and tested different approaches for dealing with the problem. Between approximating the present value of the coupon payments and taking them into account by altering the duration data, the latter proved the preferred approach.

Another approach is that of the carry trader, explored by Andersson (2018), among others. He constructed a model with a carry trader and a fundamental trader, trading with the expectation that UIP holds. The results of the paper show that the UIP puzzle can partially be explained

by the existence of carry traders in the market. He showed that a positive interest rate differential will lead to the appreciation of the high interest currency, a move we now know is contradictory to what UIP predicts.

Several studies have also examined the underlying assumptions surrounding UIP. Fama (1984) wrote a paper on the topic of predicting future exchange rates (E^e) using forward rates markets, deeming the forward rates as biased and thus their predictive power weak. Sarno (2005) arrived at similar conclusions, undermining the forwards rates, concluding that they sometimes predicted the exchange rate movements in the complete opposite direction. This discovery was supportive of much of the empirical evidence seen, where the high-interest currency tended to appreciate rather than depreciate. Chinn (2007) concluded that changes in the exchange rate depend on more things than what can be explained by the interest rate differentials alone. Only trying to explain exchange rate movements using the interest rate differential, like UIP does, is thus not sufficient. As a result, UIP cannot hold.

A more recent paper from 2022 by Deutsche Bundesbank, however, found some quite interesting results. They studied both UIP and Covered Interest Parity (CIP) using short-term (three-month) interest rate data, from the year 1999 to 2021. The period studied covered many crises; the dotcom bubble of 01', the financial crisis of 07' and the corona pandemic of 20'. The results for CIP were at first very striking with a clear difference pre versus post the financial crisis.



One dot indicates a single trading day. Dots close to, or on, the 45-degree line indicate that CIP has held.

Picture source: Deutsche Bundesbank (2022)

It is clearly showed that CIP was consistently upheld pre the financial crisis but afterwards many deviations started to arise. According to the study this was the case not only between the Euro and the US dollar, but also for many other currency pairs. The findings seemed to contradict the assumption that – when markets behave rationally – risk-free profit opportunities (arbitrage) cannot arise. However, further analyses showed that many of the deviations from CIP after 07' were just that – rationale market behavior. During and after the financial crisis markets experienced change. Counterpart risk increased significantly and so did the risk premium demanded by investors, which could explain the observed deviations. Regulators also imposed new rules as of 2013, Basel III, that increased the cost of interest arbitrage. So, as the researchers concluded, what at first seemed like a clear trend breaking from rational markets and CIP after the financial crisis, was actually just rational behavior responding to a changing financial landscape.

As for UIP, the study found that trade strategies such as carry traders, explored by Andersson (2018) as previously mentioned, did not seem to play a significant role in explaining the UIP puzzle no more. Before the financial crisis, speculative investors tended to invest in the high-interest currency, resulting in an appreciation of the same. This relationship could, however, no longer be observed since the financial crisis. The interesting part though, is the findings from the second sample, covering the period during and after the financial crisis. They no

longer found any traces of substantial appreciation of the high-interest currency. In fact, it appreciated on roughly as many days as it depreciated, and all β values shifted from negative to positive, in line with UIP. It was – as the study put it – a striking discovery that finally seemed to support UIP after so many recent studies had not.

Theoretical framework

In this section the theoretical framework for this study will be laid out. The Uncovered Interest Parity theory will be explained in detail, with an extra focus and a critical discussion on the all-important future exchange rate.

THE UNCOVERED INTEREST PARITY CONDITION

$$R = R^* + \frac{E^e - E}{E} \tag{2}$$

Where R is the interest rate in the domestic country, R^* the interest rate in the foreign country, E the exchange rate denoted as domestic currency in terms of foreign currency and E^e the expected future exchange rate.

If the domestic country has an interest rate of five percent (5%) and the foreign country an interest rate of 3 percent (3%), the future exchange rate E^e should increase by approximately 2 percent (2%), i.e. the domestic currency should depreciate. In simpler terms, any differences in interest rates should be offset by a change in the exchange rate over the same period of time. Meaning, an investor that invests in the domestic currency should make as much money as one the invests in the foreign, according to theory. Any deviations from this can lead to arbitrage opportunities, where investors can profit from the interest rate differentials. If UIP holds, arbitrage would be impossible since the deviations would be traded out by investors (Krugman 2014).

One of the essential components of UIP, and the tricky part about it, is properly estimating the future exchange rate E^e. In literature, several approaches are mentioned as how to estimate it. One common approach is to use the forward exchange rate. According to UIP, the forward exchange rate should reflect the interest rate differential between two currencies. Another method used is surveys, e.g. Bank of Americas Global Fund Managers survey,

where investors try to get a hint about where the other participants in the market believe the economy will go, and subsequently exchange rates. Forward guidance by central banks or governments/international institutions are commonly used as input as well. Option pricing models, such as the Black-Scholes model, is another way to try to get insights about the expectations of future exchange rates (Krugman 2014).

There exists no perfect model for predicting the future and all current methods have pros and cons associated with them. There is also much debate around experts in the field about the predicative power of the different methods. The forward rate, to take one example, has already been criticized as a biased predictor by Fama (1984), among others. It is fair to say that properly estimating the future exchange rate on interest differentials alone is hard, thus constituting one potential major reason as to why UIP has failed in the past.

Data & Methodology

In this section the data requirements for the thesis will be laid out, as well as the databases used to retrieve the data. The reliability and validity of the data sources will be discussed, followed by an explanation about the methodology and statistical analysis used in the study.

To be able to investigate whether UIP has previously held, the study needs two types of data; historical exchange- and interest rates data, which come in time series format. The sample period for this study is from 1993:1 to 2024:1. The sample period is divided into two sub-periods, to investigate whether the financial crisis of 07' has had any impact on UIP behavior. The sub-periods are 1993:1 to 2007:6 and 2007:7 to 2024:1, yielding roughly an equal number of observations between them. The study uses monthly data which amounts to a total of 373 observations over the full sample period. The interest rate data used is the Swedish and American three-month rate. The future exchange rate E^e is given by observing the spot rate at time $t + 3$. All data has been collected from the official database of the Swedish Central Bank. Since its fair to say that a central bank is a credible source of information on monetary and financial data, no further discussion about the trustworthiness of the data source will follow.

TIME PERIOD

The chosen time period is due to the fact that this was the maximum interval for which all necessary data was available from the data source. It is also consistent with previous studies mentioned, who generally used a similar time frame of about twenty years or so.

CURRENCY PAIR

The Swedish/American currency pair was primarily chosen since most of the previous studies mentioned neglected the Swedish currency in their studies. Easy data accessibility was another contributing factor. Also, many of the bigger currency pairs have already been tested by previous research. For this reason, this thesis focuses on a single currency pair.

THE FURTURE EXCHANGE RATE

There are different ways of choosing the future exchange rate E^e, either using the observed spot rate at a future time or using some form of predictor, e.g. forward rate or surveys. Given the difficulties of predicting the future exchange rate, as discussed in the previous Theoretical framework section, this thesis will use the observed spot rate at time $t + 3$. This is the same approach as all the previous studies listed in this thesis.

THREE MONTH INTEREST RATES

Between investigating UIP on long versus short term interest rate data the latter was chosen, for two reasons; the first being the problems that Alexius (1998), among others, encountered when having to take coupon payments into consideration when using long term (ten year) interest rate data. Secondly, the results by Deutsche Banks (2022), that used short term, that indicated some change in UIP behavior. This study wanted to see if the same could be said when investigating the Swedish currency, and thus the short-term interest data approach. To be able to accurately compare results between the two studies, and others, three-month data was chosen, since this was time period used by virtually all of the previous studies that relied on short-term data.

ORDINARY LEAST SQUARES

The study will use Ordinary Least Squares (OLS) regression, a statistical method used for estimating the relationship between a dependent variable and one or more independent variables. This study will only examine one independent variable, the interest rate differential. OLS relies on several key assumptions for generating accurate outputs, some of which are a linear relationship between the dependent and independent variables and no presence of autocorrelation or heteroscedasticity (Greene 2018).

AUTOCORRELATION AND HETEROSCEDASTICITY

Time series data, that is used in the study, can experience autocorrelation and/or heteroscedasticity. Autocorrelation is the presence of a relationship between a time series value and a lagged version of itself and heteroscedasticity is the case when the variance of the

residuals is not constant. These contradict key assumptions of OLS regression. Positive autocorrelation is relatively frequent in time series data and needs to be adjusted for. One way to deal with both problems is the Newey-West standard errors, which is the same approach used by many of the other previous studies. These standard errors account for the potential presence of autocorrelation and heteroscedasticity and provides credible outputs (Greene 2018). Stata, the statistical analysis software used in the study, has a built-in function with Newey-West standard errors that is utilized.

REGRESSION MODEL

The study will use the same regression model as that of Alexius (1998), which is the standard way to test for UIP.

$$\frac{s_{t+\tau} - s_t}{s_t} = \alpha + \beta(r_t - r_t^*) + \varepsilon \quad (3)$$

Where $s_{t+\tau}$ and s_t is the nominal exchange rate (expressed as domestic currency in terms of foreign currency) at time $t + \tau$ and time t respectively, α the constant (in this case the risk premium that is assumed to be constant), β the coefficient that should be equal one for UIP to hold, r_t and r_t^* the domestic and foreign interest rates at time t respectively (expressed as percent) and ε the error term. τ equals 3 since three-months rates are used.

The standard UIP test is whether $[\alpha, \beta] = [0, 1]$. However, since allowing for the presence of a constant risk premium, only $\beta = 1$ is tested (Alexius 1998). The interest rates for the three-month bonds are expressed as yearly returns, hence the exchange rate change is multiplied by 400 to account for this, as well as converting it into percent.

HYPOTHESIS TEST

A hypothesis test is a statistical method used to make statements about a population based on sample data. It consists of two competing hypotheses, the null hypothesis H_0 and the alternative hypothesis H_a. The test assesses the evidence from the sample data to determine

whether there is sufficient evidence to reject the null hypothesis, in favor of the alternative hypothesis (Newbold et al. 2021).

$$t = \frac{\beta - \beta_0}{SE(\beta)} \tag{4}$$

Where t is the t-value of the hypothesis test, β the coefficient from the regression, β_0 the value it should take according to the null hypothesis and $SE(\beta)$ the standard error of the coefficient β.

This study will test the null hypothesis, H_0: $\beta = 1$, for the 0.1 (10%), 0.05 (5%) and 0.01 (1%) significance levels.

Results & Analysis

In this section the empirical findings of the study will be presented and analyzed, followed by a discussion about the overall findings of the thesis. The analysis will primarily use the results of the econometric model. The discussion about the overall conclusion about the thesis will combine the previously mentioned results together with conventional wisdom, as well as the findings from other previous studies mentioned in the thesis.

The results will be presented in three steps; the findings from the full sample period, the findings from the first sample period (pre the financial crisis) and the findings from the second sample period (post the financial crisis). It will be followed by a joint analysis covering all periods.

FULL SAMPLE PERIOD: 1993:1 – 2024:1

ITEM	RESULT
Constant α	1.326
Slope β	-1.087
p-value (H_0: $\beta = 1$)	0.004(***)
Number of observations	373
Degrees of freedom	371
Standard error slope	0.798

Regression with OLS using Newey-West standard errors to account for potential heteroscedasticity and autocorrelation. A p-value less than 0.1 is indicated by (*), less than 0.05 by (**) and less than 0.01 by (***). If shown next to the estimated model coefficients, the markings indicate the level of statistical significance. If shown next to the value for the null hypothesis, they indicate the level of confidence for rejecting it.

As we can see from the table above, the slope is negative, indicating that the higher interest currency tended to appreciate during this period rather than depreciate – opposite of what UIP predicts. It is important to note that neither two values estimated from the model is statistically significant, hence careful interpretation is required. The constant, which in our

econometric model is denoted as the risk premium, is positive indicating the presence of a risk premium.

The null hypothesis, that $\beta = 1$, is rejected at all significance levels and verifies that UIP has not been upheld during the full period.

FIRST PERIOD: 1993:1 – 2007:6

ITEM	RESULT
Constant α	0.039
Slope β	-1.735(*)
p-value (H_0: $\beta = 1$)	0.003(***)
Number of observations	174
Degrees of freedom	172
Standard error slope	0.989

Regression with OLS using Newey-West standard errors to account for potential heteroscedasticity and autocorrelation. A p-value less than 0.1 is indicated by (*), less than 0.05 by (**) and less than 0.01 by (***). If shown next to the estimated model coefficients, the markings indicate the level of statistical significance. If shown next to the value for the null hypothesis, they indicate the level of confidence for rejecting it.

When testing the first period (leading up to the financial crisis) the slope is once again negative, however this time significant at the 10% level. This indicates that the currency with the higher interest rate seemed to appreciate during this sample period as well. The constant (risk premium) is much smaller than for the full sample and almost non-existent. The null hypothesis is rejected again at all significance levels and verifies that UIP has not been upheld during this period either.

SECOND PERIOD: 2007:7 – 2024:1

ITEM	RESULT
Constant α	4.303
Slope β	1.493
p-value (H_0: $\beta = 1$)	0.404
Number of observations	199
Degrees of freedom	197
Standard error slope	2.026

Regression with OLS using Newey-West standard errors to account for potential heteroscedasticity and autocorrelation. A p-value less than 0.1 is indicated by (*), less than 0.05 by (**) and less than 0.01 by (***). If shown next to the estimated model coefficients, the markings indicate the level of statistical significance. If shown next to the value for the null hypothesis, they indicate the level of confidence for rejecting it.

When testing the second period, from the financial crisis until current year, we receive quite different results compared to the first period. However, important to note is that none of the values estimated is statistically significant so any interpretations must be made with caution. The slope in this sample is positive and exceeds one (which is the value that would have upheld UIP), which indicate that the currency with the higher interest rate seemed to depreciate rather than appreciate – in line with UIP – though with more than predicted.

The constant is quite a bit higher in this period, indicating a possibly higher risk premium, which given the volatility of the markets during the financial crisis seems logical. The null hypothesis is not rejected for any significance level, indicating that it cannot be stated with a sufficient level of confidence that $\beta \neq 1$. In UIP terms this means that even though the slope value is not equal to one (1), it cannot be stated with a sufficient level of confidence that UIP has *not* been upheld. In other terms, there has been UIP between the Swedish and American currencies during this sample period, to some degree at least.

JOINT ANALYSIS & DISCUSSION

TABLE FOR COMPARISON

ITEM	RESULT
Full period 1993:1 to 2024:1	
Constant α	1.326
Slope β	-1.087
p-value (H_0: $\beta = 1$)	0.004(***)
First period 1993:1 to 2007:6	
Constant α	0.039
Slope β	-1.735(*)
p-value (H_0: $\beta = 1$)	0.003(***)
Second period 2007:7 to 2024:1	
Constant α	4.303
Slope β	1.493
p-value (H_0: $\beta = 1$)	0.404

Regression with OLS using Newey-West standard errors to account for potential heteroscedasticity and autocorrelation. A p-value less than 0.1 is indicated by (*), less than 0.05 by (**) and less than 0.01 by (***). If shown next to the estimated model coefficients, the markings indicate the level of statistical significance. If shown next to the value for the null hypothesis, they indicate the level of confidence for rejecting it.

First, it is important to once again state that some of the results in this study is not statistically significant and needs to be interpreted with great caution. However, when backed up by similar results of other previous studies, they can still offer explanatory power and insight. For the full sample period the null hypothesis is rejected at all significance levels, indicating that UIP between the Swedish and American currencies has not been upheld. The high-interest currency tended to appreciate instead of depreciate during the overall sample period, as indicated by the negative slope value (-1.087). This finding is adherent with many of the previous studies. The interesting part of the analysis, though, comes as we break down the results into the two different periods leading up to and during/after the financial crisis.

The first period also saw a negative (and statistically significant) slope value (-1.735). This is not very surprising, as most of the other studies listed in this thesis have come up with similar results. The possible reasons to why it failed are, as previously mentioned, many. As stated in

the beginning of the thesis this study will only investigate *whether* UIP has been upheld and *whether* any differences in the results can be found with regard to the financial crisis. Although, as promised, a few possible reasons as to why it might have failed or not will briefly be discussed throughout the section. One of them is the facts that this study is subject to the same difficulties experienced by previous studies that uses short-term interest rate data. As stated by McCallum (1994), short-term interest rates are subject to short-term monetary policy. One can argue that during a volatile period in the markets, as under the dotcom bubble, such interventions may very well have occurred and undermined UIP. It would seem strange, though, why such interventions would have had an undermining effect during this period and not on the second. Arguably, interventions should have occurred during the second period as well – due to the financial crisis – only this time UIP was upheld. It could just be, though, that this period saw a lot of interventions overall by policy makers, that the second period did not, explaining why UIP failed. However, once again, this is just one of many *possible* reasons.

An interesting aspect of the results, though, is that although the slope value is negative, it is quite less so than the values observed by other studies during earlier testing periods. Studies in the 90's, as previously mentioned, found β values of around minus three (-3). This lower result for the slope, retrieved on more recent data, could perhaps, very carefully stated, suggest a slight long-term change in UIP behavior as it tends to move closer to one, or at least to more positive territory. It would indicate that the higher interest currency is slowly starting to move towards depreciation, or at least not appreciating as much no more.

Looking at the results from the second period, these seem to support that belief. UIP does indeed appear to have experienced some sort of trend breaking, which is obvious when looking at the data after the financial crisis. The slope has now shifted sign from negative to positive, indicating a reversal. The higher interest rate currency experienced depreciation during the second period compared to the first, in line with UIP. The null hypothesis is not rejected for this period – also in line with UIP. Though the results for the second period are not statistically significant, the findings of this period (and the thesis in general) should bear credibility in light that Deutsche Bundesbank (2022) found similar results – indicating a shift in UIP after the financial crisis. They found that all slope values shifted from negative to

positive, much more in line with UIP. Looking at the constant, it increased sharply compared to the first period, from almost zero (0) to a bit over four (4), indicating a much higher risk premium demanded than in the first period. Even though the constant is not significant in neither sample period, this result can also be verified, at least partially, by the findings of Deutsche Bundesbank (2022). They concluded that during and after the financial crisis, market risk increased and so did the risk premium, explaining the increased constant. These findings seem to confirm not only the presence of – but a time-varying – risk premium, contradicting one of the main assumptions of UIP. A very interesting aspect of this is that in both studies, this one and Deutsche Bundesbank (2022), the period in which UIP was upheld observed a higher risk premium. It would indeed seem as if a high risk premium supported UIP – one would believe it should be the other way around. A risk premium is listed as a main reason why UIP might fail, one could believe that this higher value should instead have been observed in the first period, that rejected UIP. Any doubts about the validity of the results, due to this rather contradicting phenomenon, should quickly be dismissed however, as both studies observed the same behavior. It does beg the question, though, if the only reason why UIP was upheld was due to the greater risk premium demanded due to the financial crisis.

Even though it becomes quite clear from the data that UIP has experienced some shift after the financial crisis, this "moderation" may very well have begun earlier, as touched upon earlier in this section. The results from the first period (1993:1 to 2007:7), with a β value of -1.735, is quite a bit less than the value of minus three (-3) found in earlier studies in the 90's. It would seem as if UIP *could* have experienced some long-term "moderation" towards depreciation for the high-interest currency, over the past two decades – with the financial crisis serving as a possible catalyst. It is hard to say exactly what could have induced this *possible* long-term shift. Perhaps all academic research and fuzz about the UIP puzzle in the latest decades has attracted the attention of investors and market participants, and the anomalies have slowly begun to be traded out, i.e. if a long-term shift has even occurred in the first place.

Conclusions

According to the data UIP was not upheld between the Swedish and American currencies during the full sample period and the first period. The null hypothesis was soundly rejected at all significance levels. However, for the second period it was not rejected, and the data showed depreciation of the high-interest currency, in line with UIP. This is quite a striking result, given so many other studies that seemed to consistently reject UIP for all periods. While the results for this period are not statistically significant, and must be interpreted with great care, the credibility of the results is validated by the findings of Deutsche Bundesbank (2022). They found that the high-interest rate currency appreciated and depreciated on roughly as many days post the financial crisis, a clear change from the previous all but appreciation, and now much more coherent with UIP. All slope values also shifted sign from negative to positive. This thesis, similarly, found a clear trend breaking from appreciation towards depreciation, pre versus post the financial crisis. Although, with a bit more than was predicted by UIP, but not enough to reject the null hypothesis.

The conclusion, on this part, is that UIP does indeed seem to have been upheld between the Swedish and American currencies, during the period after the financial crisis and leading up to present day, but not before or for the sample period as a whole.

To answer the other, more broader, question if there has been a change in UIP behavior as a whole after the financial crisis; First, it is important to emphasize that this thesis, investigating one currency pair with a relatively small currency, the Swedish krona, in a worldwide financial market, does not aim to make any bold claims or sweeping conclusions about UIP. But rather, to offer some piece of empirical evidence that – together with similar findings of other well renowned researchers – seem to support the *possibility* of at least some sort of change in UIP behavior since the financial crisis.

To finish off, with the conclusion of the second question; although it cannot be concluded from this thesis alone, or even with the support of other recent studies – that a shift has indeed occurred – it does, however, seem *plausible*.

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