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## **When Carry Fades**

Maturity-Driven Decline in Currency Carry Trade Returns

School of Accounting and Finance  
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**UNIVERSITY OF VAASA****School of Accounting and Finance**

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**ABSTRACT:**

This bachelor's thesis examines why carry trade strategies are not fundamentally profitable in long-term investment approaches, particularly when implemented as a buy-and-hold strategy. The analysis is confined explicitly to currency carry trades, which represent the most widely recognized form of carry strategy. In conventional carry trade implementations, investors borrow in a low-interest-rate currency and subsequently invest the proceeds in higher-yielding financial instruments. Within this framework, the carry component is derived from the interest rate differential between the two countries involved. According to the uncovered interest parity theory, exchange rate movements should offset any interest rate differentials, rendering carry trade investments unprofitable. However, extensive empirical research has consistently demonstrated that this theoretical prediction fails to hold in practice. This persistent deviation from theory has historically provided investors with substantial excess returns spanning multiple decades.

An investor's returns from carry trades emerge from three distinct components: exchange rate fluctuations, interest rate changes in both the funding and investment countries, and the returns generated by the selected financial instrument. Currency carry trades have received considerable scholarly attention over recent decades due to their complex risk profile and fundamental importance to international financial markets. These strategies exert a significant influence on financial market stability, particularly given that carry trade positions are typically accumulated during low-interest-rate environments and frequently financed through substantial leverage. Carry trade investments are inherently vulnerable to abrupt unwinding events, driven by their pronounced negative skewness in return distributions. Carry trade unwinding can precipitate substantial turbulence across international financial markets.

This thesis adopts a literature review methodology. The analysis focuses on the most prevalent fixed-income instruments. The thesis seeks to identify positive correlations between currency and fixed-income markets that investors might exploit to generate positive risk-adjusted returns. Consequently, the examination reflects an asset management perspective. The thesis provides compelling evidence against long-maturity carry trade investments. As investment maturity lengthens, uncovered interest parity holds proportionally. Conversely, short-term carry trade investments remain profitable, as deviations from the theory occur far more frequently over shorter time horizons.

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**KEYWORDS:** carry trade, currency carry trade, uncovered interest parity, foreign exchange, fixed income, yield curve, asset management

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**TIIVISTELMÄ:**

Tämän kandidaatintutkielman tarkoituksena on selvittää, miksi carry trade -strategia ei lähtökohtaisesti sovellu pitkän tähtäimen sijoitusstrategiaksi, etenkin osta ja pidä -strategiaksi. Tutkielman on rajattu käsittämään valuuttoihin perustuvaa carry trade -strategiaa. Tämä on tunnetuin carry traden muoto. Perinteisissä carry trade -strategioissa lainataan matalan korkotason valuuttaa, minkä jälkeen lainattu raha sijoitetaan korkeamman tuoton sijoitusinstrumentteihin. Strategiassa carry-komponentti on maiden välinen korkoero. Kattamattoman korkopariteetti -teorian mukaan valuuttakurssien tulisi tasoittaa mahdolliset korkoerot tehden carry trade -sijoituksista kannattamattomia. Lukuisat tutkimukset kuitenkin osoittavat, että teoria ei pidä käytännössä paikkaansa. Tämän talousteorian paikkansapitämättömyys on tarjonnut sijoittajille positiivisia ylituottoja vuosikymmenien ajan.

Sijoittajan tuotto muodostuu kolmesta eri komponentista: valuuttakurssien muutoksista, korkotason muutoksista sekä lähtö- että kohdemaassa ja valitun sijoitusinstrumentin tuotosta. Carry trade -strategiaa on tutkittu laajasti viime vuosikymmeninä sen monimutkaisen riskiprofiilin ja keskeisen merkityksen vuoksi kansainvälisillä rahoitusmarkkinoilla. Strategialla on merkittävä vaikutus rahoitusmarkkinoiden vakauteen, sillä carry trade -sijoituksia on lisätty matalan korkotason vallitessa, ja ne ovat usein rahoitettu suurilla velkavivuilla. Carry trade sijoitukset ovat alttiita äkillisille purkautumisille niiden voimakkaan negatiivisesti vinoutuneen tuottojakauman vuoksi. Carry traden purkautuminen voi aiheuttaa voimakasta epävarmuutta kansainvälisillä rahoitusmarkkinoilla.

Tutkielma on laadittu kirjallisuuskatsauksena. Mahdollisiksi sijoitusinstrumenteiksi on rajattu tyypillisimmät korkoinstrumentit. Tutkielma pyrkii löytämään positiivisia korrelaatioihin valuutta- ja korkomarkkinoiden välillä, joista sijoittaja voisi hyötyä. Täten tarkastelu edustaa erityisesti varainhoidon näkökulmaa. Tutkielma osoittaa voimakasta näyttöä pitkän maturiteetin carry trade -sijoituksia vastaan. Kun maturiteettia pidennetään, kattamaton korkopariteetti -teoria pitää voimakkaammin paikkaansa. Lyhyen aikavälin carry trade -sijoitukset kuitenkin ovat kannattavia, sillä teoria poikkeamia teoriasta esiintyy huomattavasti enemmän lyhyellä aikavälillä.

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**AVAINSANAT:** carry trade, currency carry trade, uncovered interest parity, foreign exchange, fixed income, yield curve, asset management

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## 1 Introduction

Currency carry trade is a well-known investment strategy that has shaped global financial markets for nearly half a century. In fact, carry trade represents one of the most consequential yet elusive phenomena in international finance. In its simplest form, the carry trade strategy seeks to capitalize on interest rate differentials by borrowing in low-yield currencies and investing in higher-yield currencies. Previously dominated by institutional investors, carry trading now appeals to retail traders and individual investors alike. This complexity makes it extremely difficult to analyze the carry trade's size and implementations, as estimates of the true size of carry trade vary widely across sources (Lewis & Keohane, 2024).

Nonetheless, the sheer scale of carry trade activity demonstrates its systemic importance. The yen carry trade, the most prominent example of a carry strategy where the Japanese yen serves as the funding currency, has drawn attention for its massive scale and its unusual structure, with the Bank of Japan exerting significant influence over global financial markets. In fact, financial institutions had entered the financial derivatives market, incorporating yen worth \$14.2 trillion by the end of 2023, a 27% increase in just two years (BIS, 2024). The carry trade has been a very popular strategy since certain central banks, most importantly, the Bank of Japan has kept interest rates low for prolonged periods and consequently many investors have assumed that interest rates would remain unchanged in the future as well (Anquilina et al., 2024).

The carry trade is rigorously affected by multiple drivers. According to Lewis and Keohane (2024) market participants are especially concerned about small movements in funding currency's exchange rates, for example, Japanese yen interest rates. Even a small interest rate hike can destabilize the carry trade environment and consequently trigger the unwinding of the yen carry trade (Anquilina et al., 2024). In August 2024, the Bank of Japan's unexpected interest rate hike triggered a rapid unwind, severely impacting leveraged strategies built on expectations of stable volatility and ultimately resulting in forced selling (Anquilina et al., 2024).

Carry trade returns are negatively skewed, meaning that they earn stable returns but are subject to large crashes (Brunnermeier et al., 2008). This negative skewness is often called “picking up nickels in front of a steamroller” (Anquilina et al., 2024). This structure highlights the looming risks associated with carry trade strategies. Moreover, carry trades depend on other investment decisions and market movements. One significant caveat is that carry trade strategies are highly susceptible to the dynamics of other investment styles. For instance, momentum strategies amplified the yen’s sharp appreciation, which exacerbated volatility and triggered forced selling during the August 2024 unwinding (Anquilina et al., 2024). In addition, carry trade investors tend to herd, which often leads to crowded trades. Those trades are especially vulnerable to crashes because possible unwindings are extremely hard to predict (Brunnermeier et al., 2008).

The integration of currency carry trades with bond investments has been relatively underexplored, as they are often categorized as distinct fields of study. However, bonds embody the exact interest rate differentials that drive carry trade profits. Therefore, they share similarities, which makes them reasonable to study together. Thus, the carry trade, combined with fixed-income investments, presents investors with both highly lucrative opportunities and the risk of substantial losses, thereby offering an interesting perspective for research.

Anquilina et al. (2024) report that the August 2024 unwind was not severe compared to historical events; the risks remain elevated as many of the unwound leveraged positions were quickly rebuilt. As a result, the risks remain noteworthy, as carry trading is likely to continue to grow in the coming years. As the number of retail investors has been increasing, and investors are increasingly looking for passive, long-term strategies, carry trades from a time-varying perspective is a very topical issue.

## 1.1 Purpose of the study

This thesis examines the currency carry trade combined with fixed-income investments from an asset management perspective. It explains the basic mechanics of both carry trades and fixed-income investments, then examines them as a combined strategy, extending the analysis to time-varying components, such as maturity. The aim is to investigate how the characteristics of currency carry trades and fixed-income assets affect the returns of the combined portfolio. More precisely, this thesis examines whether currency carry trade strategies combined with longer-maturity fixed-income assets deliver weaker risk-adjusted returns. The hypothesis is as follows:

H: Long-term currency carry trades deliver lower risk-adjusted returns (Sharpe ratios) than short-term strategies.

Long-term refers explicitly to holding assets for a period exceeding one year without any portfolio rearrangements. Similarly, short-term is defined as a holding period of 1 to 3 months, and medium-term as 3 to 12 months.

Three research questions explore the hypothesis further:

RQ1: What mechanisms explain the inferior risk-adjusted returns of long-term currency carry strategies compared to short-term alternatives?

RQ2: Does the maturity-driven performance differential hold consistently across different types of fixed-income investments and credit qualities?

RQ3: Does the maturity-driven performance differential persist across different macroeconomic regimes, volatility environments, and currency pairs?

Importantly, there are multiple types of carry strategies, which should not be confused with the currency carry trade. For instance, bond carry strategies typically involve shorting low-yielding bonds and going long in high-yielding ones. This thesis merely examines the currency carry trade, which remains the most well-known form of carry. The term "carry trade" is used explicitly to refer to the currency carry trade throughout the thesis. Fixed-income securities (mainly bonds) serve only as standard investment instruments without additional carry factors. Ultimately, this thesis seeks to identify the optimal structure of fixed-income carry trade portfolios, with particular emphasis on maturity profiles and the key drivers shaping portfolio characteristics across different maturities.

Currency carry trade strategies can be implemented in various different ways. According to Galati et al. (2007) there are two main ways to build carry trade strategies. The first method is the simplest one. It includes investing the borrowed funds to the target currency's spot markets. The second method is to use financial derivatives, such as futures contracts, options and swaps to construct the portfolio.

## **1.2 Thesis structure**

The thesis is organized into five chapters. Following the introduction, chapter Two examines the currency carry trade and related phenomena. Chapter Three discusses fixed-income investments in detail. Chapter Four presents the joint analysis of combined strategies. Chapter Five concludes.

## 2 Currency carry trade

A currency carry trade seeks to profit from interest rate differentials between two countries. Typically, it includes borrowing low-yielding currencies (short positions) and investing the proceeds in high-yielding currencies (long positions). Uncovered interest parity (UIP) suggests that expected exchange rate movements should offset interest rate differentials, resulting in zero excess returns. However, there is a vast body of empirical evidence to the contrary: high-yielding currencies often appreciate (depreciate) when UIP predicts they should depreciate (appreciate). This deviation from the theory has systematically created excess returns for decades. In the literature, this anomaly is widely known as the forward premium puzzle (Fama, 1984).

Carry trade has three return factors: (i) the interest rate differential (carry factor), (ii) spot exchange-rate changes, and (iii) the excess return on the underlying investment. Carry trade returns are negatively skewed, implying that investors predominantly earn constant, stable returns but are subject to suffering large losses (Brunnermeier et al., 2008). Importantly, there are substantial differences in countries and currency pairs. For example, Hsu et al. (2024) find that there are fewer profitable carry trade opportunities in developed countries, likely due to a high level of competition.

Notably, there are numerous different possibilities to construct carry trade strategies albeit the relatively simple definition. One common way to categorize carry trade strategies is to divide them as conditional and unconditional strategies. Conditional carry trade involves going long in currently high-yielding currencies while unconditional carry trade investors go long in high-average-yield currencies (Lustig et al., 2019,). The carry trade literature often considers relatively simple, equally weighted portfolios (Daniel et al., 2014). Importantly, there are countless ways to build carry trade portfolios: there can be substantial deviations from literature and real-life portfolios.

## 2.1 Exchange rate and interest rate determination

Carry trade investors face significant exposure to exchange rate risk. Favorable conditions occur when the funding currency depreciates while the investment currency appreciates. In contrast, unfavorable conditions arise when these movements reverse: the funding currency appreciates while the investment currency depreciates. This represents the worst-case scenario for carry trade returns. A deviation from uncovered interest parity (UIP) occurs precisely when exchange rate movements fail to offset the interest rate differential.

Exchange rates, like most prices, are determined by supply and demand. However, identifying the specific factors that influence supply and demand is challenging. Nonetheless, certain factors unambiguously impact the exchange rates, such as interest rates, general expectations, and risk perceptions. Rossi (2013) reports mixed evidence on whether exchange rates are predictable. In fact, she finds that exchange rate predictability appears only for some countries and short periods of time, rather than across multiple borders. Moreover, she notes that typical models do not exhibit short-horizon predictability, whereas they may better forecast at longer horizons (three to four years). Although carry trade investors are closely interested in forecasting exchange rates, their main objective is to forecast carry trade returns.

Crucially, currencies with relatively high interest rates are riskier for investors (Fama, 1984). Typically, higher interest rates are provided in developing countries and Emerging Market Economies (EMEs), as they are considered riskier than those in developed economies. In addition to interest rates, global risk appetite and spillovers from developments in the United States move EMEs' exchange rates (European Central Bank, 2019). Daniel et al. (2014) report that whether the strategy is exposed to the U.S. dollar makes an important difference in abnormal returns and risk factor loadings. They note that common equity risk factors can explain dollar-neutral trades, whereas they cannot explain trades involving the U.S. dollar.

## 2.2 Crash risk and risk premia

Several theoretical frameworks seek to explain the sources and magnitude of risks inherent in carry trades (Daniel et al., 2014). However, there is no consensus on which risk factors are the most important in explaining past excess returns. Despite this disagreement over specifics, many researchers agree that investors may not earn returns solely because of uncovered interest parity (UIP) failure, but also as compensation for bearing systematic risks (Lustig et al., 2011; Menkhoff et al., 2012).

Arguably, one of the most closely related risks is crash risk. Brunnermeier et al. (2008) argue that when interest rate differentials are high and carry trades appear attractive (high carry factor), the return distribution of carry trades tends to exhibit particularly negative skewness. This skewness indicates that carry trades generate stable, constant returns but are subject to substantial, severe crash risk. In addition, they note that adding more currencies to the portfolio is unlikely to reduce crash risk, suggesting that carry trade investors might be forced to tolerate negative skewness, that is, the high crash risk.

Menkhoff et al. (2012) support the view that returns are negatively skewed and conclude that carry trades perform poorly during periods of market turmoil. They note that in periods of elevated volatility, high-yielding currencies deliver weak returns while low-yielding currencies can earn positive returns and thus serve as a hedge.

Importantly, risk premiums are not constant; they exhibit time-varying components. The amount of risk associated with an asset fluctuates over different time periods. Menkhoff et al. (2012) conclude that bearing volatility risk over time offers one explanation of excess returns in carry trades. In other words, a significant portion of carry trade returns derives from time-varying risk premia (TVRP). However, the existence of time-varying risk premiums does not constitute evidence of pricing inefficiency (Anderson, 2011, p. 253). Moreover, time-varying risk is an overarching concept encompassing, for instance, monetary policy, economic conditions, volatility, and investor behavior.

Daniel et al. (2014) note that in traditional carry trades involving developed-market currencies, investors bear pure foreign exchange risk, not sovereign risk. Notably, emerging market currencies embed sovereign risk premiums and therefore have more complex risk profiles than traditional carry trades. As a result, traditional carry trades and trades involving EME currencies are fundamentally different and thus not directly comparable to the traditional ones.

Despite this distinction, both traditional and emerging market carry trades share a common feature: investors cannot fully diversify their exposure to systematic risks. Lustig et al. (2011) note that exchange rates reflect not only interest differentials but also compensation for home country risks and global carry trade risks. They suggest that carry trade investors are forced to load up on the global or common risk factor. Without exposure to these risks, the premium is zero, as they are not exposed to any country or currency-specific risks and the carry trade is unprofitable. Risk-based explanations suggest that trading on the forward premium is not risk-free and therefore carry trade investors are obliged to bear systematic risks (Menkhoff et al., 2012).

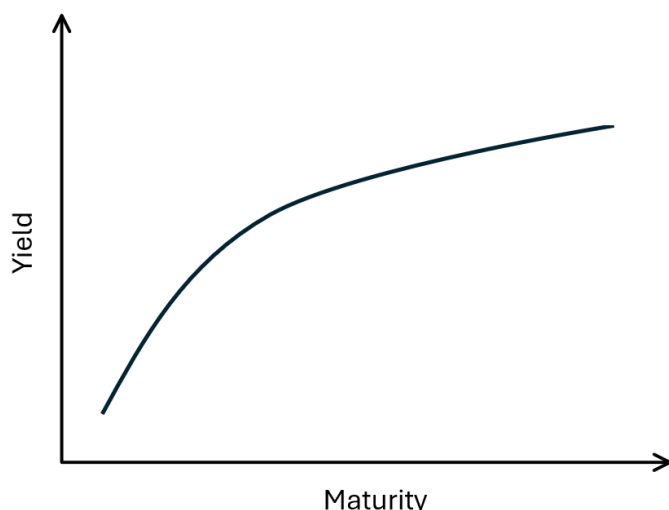
In conclusion, a vast body of literature supports the view that risk-based explanations account for excess returns. However, there is no consensus on which risk factors are most important. As carry trades can be structured in multiple ways, their underlying risk profiles vary substantially. Additionally, risk premiums are not constant but exhibit time-varying dynamics.

### **3 Fixed-income securities**

Fixed-income securities are particularly well-suited for carry trade analysis because they have well-defined maturity dates and clearly observable interest rates, unlike equities, which have indefinite maturities. This clarity is critical because interest rate differentials, the fundamental driver of carry trade returns, are more transparent and directly observable in fixed-income markets. Additionally, fixed-income securities and currency markets share the same macroeconomic drivers, including interest rate expectations and inflation dynamics, making them naturally interconnected for integrated analysis.

#### **3.1 Risks and return drivers**

The yield curve graphically depicts the yields of bonds with identical credit quality but varying maturities. Typically, the yield curve is upward-sloping, which indicates higher yields for longer maturities. This pattern compensates investors for increased risk and time exposure, as the longer maturities entail a greater possibility of changes in economic factors (the term premium). However, the shape can vary depending on market expectations for future interest rates, inflation, and economic growth. Traditionally, an inverted yield curve is considered a sign of an impending economic downturn or recession. Nevertheless, the predictive power of the yield curve remains a subject of extensive debate.



**Figure 1.** Normal yield curve.

One of the most significant risks in fixed-income investing is interest rate risk, commonly measured by duration. Duration measures a bond's price sensitivity to changes in interest rates. Duration captures the inverse relationship between interest rates and bond prices: bonds with longer duration experience larger price declines when interest rates rise. Consequently, bonds with higher coupon rates exhibit lower duration because investors receive cash payments earlier, reducing their exposure to interest rate risk. This relationship highlights the interconnections between interest rates and exchange rates. This relationship is particularly important for carry trade analysis because higher-yielding currencies often issue bonds with lower duration profiles, thereby affecting the overall risk structure of carry trade positions.

A key risk associated with fixed-income investments is default risk, defined as the possibility that a bond issuer may fail to meet its payment obligations, either on time or entirely (Maciulis et al., 2023, p. 2). Credit rating agencies rate these bonds based on their assessed risk levels. Typically, government bonds, particularly U.S. Treasury bonds, are regarded as among the safest. In contrast, high-yield corporate bonds (junk bonds) carry lower credit ratings and consequently greater risk, but they compensate for this increased risk by offering higher yields.

### 3.2 Types of fixed-income investments

This section provides a brief overview of the significant fixed-income investments. This analysis examines how the type of fixed-income instrument and variations in credit quality affect the performance of a combined strategy integrating currency carry trades with fixed-income investments. Although there are many types of securities, this thesis mainly focuses on the most common ones: sovereign debt securities and corporate debt securities. This part describes the main similarities and differences, and the latter parts interpret the results in conventional carry trade strategies.

Carry trade literature predominantly uses sovereign bonds as benchmarks because their data is readily available and relatively comparable. For example, Lustig et al. (2019) use G-10 sovereign bonds to mitigate external risk factors related to the model, such as credit risk. Importantly, sovereign bonds do not have a bankruptcy mechanism to consider (Gopinath, 2025). In addition, G-10 currencies account for close to 90% of total trading volume (Lu & Jacobsen, 2016). Although sovereign bonds are often used as benchmarks in carry trade research, credit quality varies substantially across fixed-income securities and must be considered when constructing actual portfolios (Maciulis et al., 2023). This suggests that academic benchmarking approaches may not fully capture the complexity of credit risk that carry trade investors encounter in practice.

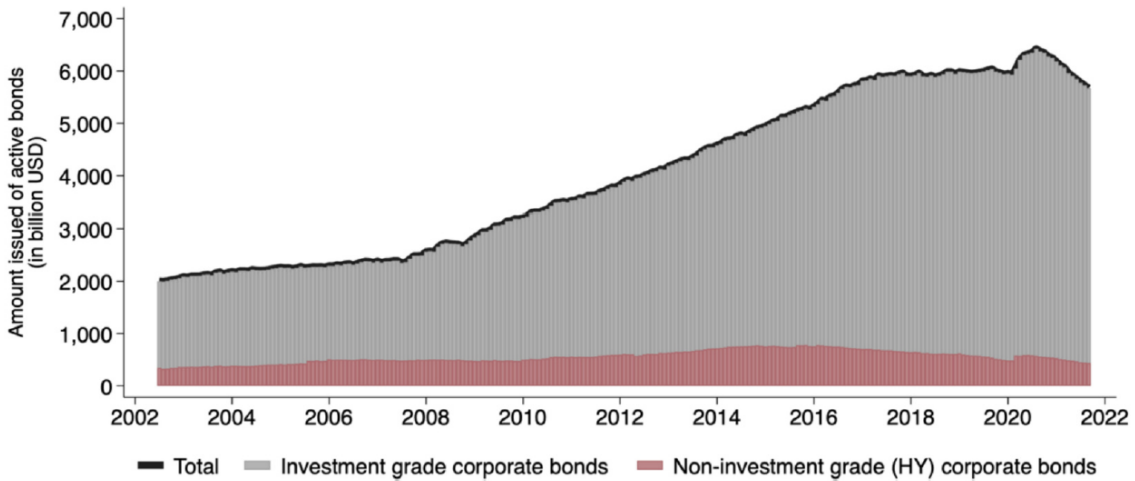
The general principle in finance is that diversification reduces risk without sacrificing returns. Nobel Prize-winning economist Harry Markowitz famously stated that diversification is the investor's only free lunch. However, this principle may not universally apply to all asset combinations. Maciulis et al. (2023) show that comparing most credit qualities provides only modest diversification benefits because they co-move closely. Nevertheless, they find that including short-term Treasuries provides substantial diversification benefits because they exhibit the strongest negative correlations with other credit instruments. Treasuries are driven primarily by interest rate risk, whereas other longer-maturity credit instruments are driven primarily by credit risk. This effect suggests that investors must combine assets across different maturity profiles, particularly short-term

and longer-term instruments, to achieve meaningful diversification benefits. For carry trade investors specifically, this finding implies that incorporating short-term Treasury instruments alongside higher-yielding, credit-sensitive securities can provide meaningful risk reduction without sacrificing returns, thereby improving the Sharpe ratio in their portfolios.

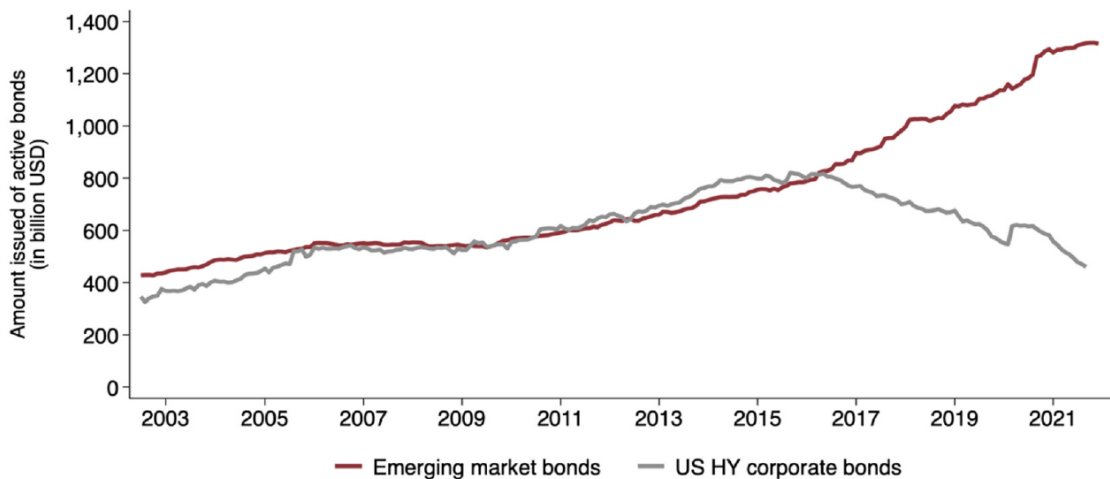
Maciulis et al. (2023) state that among investment-grade credit sectors, short-term credit has generated the best risk-adjusted returns, whereas long-term credit exhibits lower average returns and wider return distributions, making it less efficient for investors seeking credit risk compensation. This implies that investors may also include securities with maturities shorter than their intended investment horizon.

Similarly, Gopinath et al. (2025) report only minor differences in average investment outcomes between sovereign and corporate bonds, despite their distinct structural characteristics and the contrasting treatment they receive in the literature. On one hand, they report similar Sharpe ratios, suggesting that the choice of fixed-income security does not play a decisive role in overall strategy performance. On the other hand, they note differences in time profiles, which may be explained by differing responses to macroeconomic and financial shocks. This robustness across asset classes is further confirmed by Menkhoff et al. (2012), who demonstrate that volatility risk explanations extend to corporate bond markets. Overall, this suggests that security selection becomes increasingly important during periods of financial distress, whereas in normal market conditions it has a more limited effect.

The dynamics of high-yield bond markets have shifted significantly in recent years. The total U.S. corporate bond market has approximately tripled from 2002 to 2022 (Figure 2). High-yield emerging market bonds have grown while U.S. high-yield corporate bonds have declined since 2015 (Figure 3).



**Figure 2.** The US corporate bond market: amounts outstanding (Gopinath et al., 2025).



**Figure 3.** Comparing market size: corporate vs. EM high-yield bonds (Gopinath et al., 2025).

High-yield instruments and emerging markets sectors are more exposed to credit risk and therefore offer higher yields. Importantly, credit spreads should not be considered as expectations for the realized premium (Maciulis et al., 2023). While this shift opens new opportunities for investors, strategies that exclude the U.S. dollar introduce additional complexity to portfolio construction, discussed in later sections.

## **4 Joint analysis of carry trade and fixed-income investments**

From this point onward, this thesis conducts an integrated analysis of carry trades and fixed-income investments. It aims to examine the joint effects of these assets to characterize the performance of combined strategies. Thus, the impacts of the factors are considered collectively rather than in isolation. Notably, investors are not fundamentally interested in forecasting exchange rate and interest rate movements; their focus lies in forecasting the actual carry returns (Melvin et al., 2013).

Given that a significant proportion of carry trade investors are institutional entities or hedge funds, which are subject to limited public disclosure requirements, comprehensive data on their trading activity is often scarce. Thus, evaluating the typical holding period of a carry trade strategy is challenging, which partly explains why the overall size of carry trade remains uncertain and estimates vary widely.

### **4.1 Correlation between the FX and the bond markets**

The foreign exchange (FX) and the bond market generally exhibit correlations and interconnections. However, this relationship is complex and varies across countries and economic conditions. Their correlation is critical for carry trades, as positive co-movements can enhance returns, while negative co-movements can hinder the strategy. Particularly, strong deviations from the usual correlation, such as sudden opposite movements can create valuable opportunities for carry traders.

Typically, there are separate studies of the foreign exchange and bond markets, although they share many characteristics. Similarly, the carry trade literature has not extensively covered the bond market in recent years. This is predominantly because traditional carry trade strategies do not incorporate yield curves beyond short-term interest rates (Dreher et al., 2020, p. 758).

Daniel et al. (2014) acknowledge that bond market risk factors should theoretically have explanatory power for the carry trade due to the financial consistency required by the stochastic discount factor. However, they find that, empirically, these bond factors fail to price the carry trade, leaving the high returns. Moreover, Chernov and Creal (2023) argue that there exist shocks that impact foreign exchange rates but do not impact bonds. These conditions make the carry trade multifaceted.

When it comes to emerging market economies (EMEs), they are characterized by having relatively small institutional investor bases and being heavily dependent on foreign investors. Consequently, they exhibit different mechanisms compared to advanced economies (AEs). Notably, Hofmann et al. (2020) document a negative correlation between the value of the currency and bond yields denominated in that currency. Since bond prices move inversely to yields, this relationship induces co-movements within combined investment strategies. When foreign investors hold EME bonds and measure returns in dollars, they experience favorable returns during currency appreciation. However, this same mechanism means they face amplifying losses during downturns when currency depreciates and bond prices fall.

## **4.2 Market conditions and dynamics**

The market environment has undergone exponential changes in recent years, with one of the most significant transitions occurring during the global financial crisis in 2008. This period also ultimately changed both carry trading and bond investment strategies. Andrews et al. (2024) find that traditional carry trade profits have declined since the financial crisis. Following the global financial crisis, nearly all short-term interest rates fell close to zero. This development reduced the number of investment currencies, ultimately leading to weaker returns (Andrews et al., 2024).

Multiple studies report that the carry trade environment weakened after the global financial crisis. Hsu et al. (2024) report that there has not been consistent carry trade profitability after 2005. They conclude that even during the best years for carry trades, selecting the optimal currency pairs is extremely difficult. Similarly, Fan et al. (2022) find weaker performance in traditional carry trades, attributing this decline to the disappearance of downside risk exposure rather than under-diversification. However, the carry trading environment has become increasingly attractive as interest rates have increased in the 2020s.

An important hypothesis, the efficient market hypothesis (EMH), posits that under such conditions, the majority of active investors or high-performing funds are unable to consistently outperform the market (Hsu et al., 2024). The EMH is frequently discussed in the literature, although many studies question its strength in real market conditions. However, Hsu et al. (2024) provide compelling evidence that the EMH holds relatively well in currency markets and that the uncovered interest parity (UIP) holds. They conclude that most carry trade returns are attributable to luck.

The U.S. Dollar has been the prominent currency for decades. According to the European Central Bank (2019), the U.S. dollar is particularly strong during periods of high U.S. interest rates and overall positive economic momentum. Eventually, during those periods, capital tends to move to the United States, which in turn leads emerging market currencies to depreciate. They conclude that this is how U.S. shocks spread to emerging market economies. These dynamics can affect each market, even if they are not directly connected to the United States. This illustrates the dominance of the United States within an increasingly integrated global financial system.

Finally, De Gregorio and Jara (2024) discovered that the bond markets in emerging market economies have become more attractive as the primary funding source shifted from banks to bonds starting from 2010. This finding represents growing carry trade possibilities as investors might look for less competitive new markets to trade.

### 4.3 Liquidity and transaction costs

The foreign exchange market, the largest financial market in the world, offers one of the most liquid and resilient trading platforms. The foreign exchange market is often considered very liquid just because of its large size, however, it has limited transparency, thus it is not understood as well as equity and bond markets (Mancini et al., 2013). Notably, Brunnermeier et al. (2008) demonstrate that carry trade investors require the most liquidity precisely when market liquidity is at its weakest, that is, during market downturns.

Söderlind and Somogyi (2025) state that instead of the level of illiquidity of the currency pair, the carry trade excess returns are driven by cross-sectional exposure to illiquidity risk. In practice, this means that instead of the general level of illiquidity, the investors are generally affected by how much each currency's liquidity is deteriorating relative to the average. They find that typical investment currencies are subject to liquidity deterioration, whereas typical funding currencies are generally relatively stable over crises. Mancini et al. (2013) support this view by reporting that funding currencies offer insurance against liquidity risks during downturns.

Mancini et al. (2013) conclude that a decline in foreign exchange liquidity affects fund cost, increases rollover risk and impairs hedging strategies. They show that illiquidity can aggravate losses during market turmoil by more than 25%. These liquidity constraints are especially noteworthy in emerging market economies' currencies. The most liquid FX pairs tend to have lower liquidity sensitivities to market-wide liquidity (Mancini et al., 2013). This is yet another reason why strategies involving EME currencies change the fundamental features of carry trades.

Importantly, investors implementing carry trade strategies should also focus on the liquidity of the investment assets, in this case, the selected fixed-income securities. In stable conditions, fixed-income investments generally offer relatively stable liquidity. However, during market distress, even the most liquid assets, such as U.S. Treasuries, can experience liquidity deterioration.

The bond market is generally centralized, meaning that trades are done over-the-counter (OTC), which is substantially different from the stock market trading system. Benos et al. (2022) highlight that the current centralized bond trading possesses financial stability risks, for example, liquidity risks during market downturns. This, in turn, is important for carry trades, as they demand liquidity, especially during periods of high uncertainty (Brunnermeier et al., 2008). Even though safe-haven fixed-income investments may experience temporary improvements in liquidity, liquidity risks remain evident during periods of severe market turbulence (Benos et al., 2022).

Furthermore, bid-offer quotes and other conventional transaction metrics that are used in exchange-traded markets are not directly available in the corporate bond market as they have a fundamentally different structure (Friewald et al., 2012). This incurs more complex, demanding liquidity modelling. Moreover, they note that liquidity effects on yield spreads are significantly stronger for bonds with higher credit risk, with the liquidity premium being substantially larger for speculative grade bonds compared to investment grade bonds.

This complexity is analyzed further by Kempf et al. (2012), who state that the term structure of illiquidity premia varies over time: for short-term maturities, it is driven by asset market volatility, while for long-term maturities, it is dependent on the long-term economic outlook. This is another explanation of how long-term strategies differ structurally and, therefore, are not directly comparable to short-term strategies.

Notably, investors with different investment horizons should analyze both time-varying components and the overall level of liquidity across maturities. Interestingly, Adrian et al. (2017) show that different liquidity measures on US government bonds weaken alongside longer maturities. In turn, Kempf et al. (2012) argue that although liquidity is one of the most important attributes of bond markets, it still remains unclear how the illiquidity premium depends on the maturity of the bond. Moreover, they state that the premium

is hard to measure alongside the illiquidity premium, because the default premium and the risk-free rate also influence the bond yields.

Similarly, Friewald et al. (2012, p. 35) find that speculative-grade bonds exhibit lower liquidity and a more pronounced response to changes in liquidity. They conclude that credit risk is positively correlated with liquidity risk, indicating that higher credit risk is associated with weaker liquidity. This supports the view that safe-haven assets do have better liquidity.

Nonetheless, Söderlind and Somogyi (2025) note that understanding how foreign exchange risks affect pricing for other assets still needs further study, as it is insufficient. One of their key findings is that only systematic and currency-specific liquidity risks correlate with carry trades. They state that bearing those two risks partially explains the carry trade premium. In other words, the carry trade liquidity is not based on how individual currency liquidity correlates with general market illiquidity patterns.

Importantly, Lustig et al. (2019) rule out inflation, credit, and liquidity as the only explanations for the poor performance of long-term carry strategies in G10 currencies, instead attributing the effect to fundamental differences in how permanent economic shocks are priced across countries. Mancini et al. (2013) summarize that there exists contemporaneous co-movements among Foreign Exchange and bond market liquidity. In summary, cross-asset diversification may not offer the intended results, and thus, investors must be aware of liquidity concerns, especially during market downturns.

#### **4.4 Macroeconomic drivers and regime shifts**

The U.S. dollar is the dominant currency in the foreign exchange market. This asymmetry creates a dependency that affects investors and borrowers globally, regardless of whether they trade directly in U.S. dollars. Overall, during normal times, the global

financial cycle is strongly influenced by U.S. monetary policy and thus carry traders should closely focus on U.S. policy (Falconio, 2021).

Hofmann et al. (2020) support the significant role of the U.S. by reporting that investors focusing on emerging market economies (EMEs) are highly vulnerable to movements in the U.S. dollar, particularly those who evaluate returns in U.S. dollar terms. This high degree of dependence can lead to simultaneous investment decisions across all EMEs, as investors are incentivized to adjust their portfolios according to movements in the U.S. markets and dollar movements. In addition to dependency on the U.S., the emerging market currency trades incorporate substantive sovereign risk premiums and thus are more subject to regime shifts (Daniel et al., 2014).

Lu and Jacobsen (2016) report that currency traders primarily focus on macroeconomic information, although the information is first impounded into stock returns and then into exchange rates. They note that the information might be delayed for the exchange rates. Additionally, many models impeding yield curves ignore macroeconomic linkages (Diebold et al., 2006). Therefore, macroeconomic factors become increasingly noteworthy as maturity increases.

However, Falconio (2021) reports an important caveat: during crisis periods, and Zero Lower Bound (ZLB) returns are not affected by U.S. monetary policy. He notes that Fed monetary expansion was not able to affect international risk aversion in his sample. In turn, Bekaert et al. (2013) report that lax monetary policy decreases risk aversion. In fact, they note that the effect lasts more than two years.

Naturally, investors face greater exposure to shifts in monetary policy regimes as holding period increases. Chinn and Quayyum (2012) find that the long-term uncovered interest parity (UIP) significantly deteriorated in Japan and Switzerland following the advent of a prolonged zero lower bound (ZLB) after 1996. They find that short-term UIP remains weak across periods, while long-term UIP loses some of its earlier strength under ZLB

conditions. Moreover, this creates a regime-dependent instability, which is subject to crashes after ZLB conditions change (Brunnermeier et al., 2008).

Kempf et al. (2012) show that different parts of the bond term structure are driven by different economic factors. Short-term bond liquidity is primarily driven by short-term asset market volatility (stock market shocks), while long-term bond liquidity is driven by long-term economic outlook expectations. Thus, short-term bonds are not subject to long-term economic factors, while long-term bonds are.

In conclusion, investors are highly dependent on macroeconomic factors. The zero lower bound (ZLB) or zero interest rate environment can intensify crash risks, as investors create overleveraged portfolios due to the virtually free borrowing and abundant liquidity.

#### **4.5 Term structure dynamics and yield curve**

The yield curve can be implemented to forecast both the exchange rate and interest rate movements. Lustig et al. (2019) document that currency excess returns are concentrated at the short end of the maturity spectrum, while at longer maturities, increasing bond term premia offset currency risk premia, leading to zero excess returns. Dreher et al. (2020) further show that a relative yield-curve curvature factor predicts exchange rate risk premia at forecast horizons of up to 6 months, suggesting that different yield curve characteristics capture information about currency and bond returns across different maturity and horizon dimensions.

Lustig et al. (2019) argue that exchange rates are approximately stationary over long horizons, implying that traditional interest-rate-differential-based carry trades should converge toward zero excess returns in the long term. This theoretical constraint aligns with their empirical finding that yield-curve-slope-based strategies outperform traditional carry trades at longer maturities.

Chinn and Quayyum (2012) support the short-term strategies over long-term strategies by stating that, in general, uncovered interest parity (UIP) holds more robustly at long horizons than at short horizons. However, they demonstrate that even at a long horizon, the UIP still systematically fails. Importantly, Lustig et al. (2019) report that long-term bond risk premia could be zero without implying that UIP holds. This suggests that long-term carry trades may be unprofitable even when the UIP theory predicts profitability. Chinn and Quayyum (2012) also note that the failure of the long-horizon UIP has slightly deteriorated, although the failure of the short-horizon UIP is still considerably stronger. Thereby, short-term carry strategies continue to benefit more from the persistent failure of the UIP.

Besides interest rate-based strategies, there are many ways to construct strategies using information embedded in yield curves. Lustig et al. (2019) reveal a crucial reversal in carry trade mechanics regarding the term structure of bond returns. While traditional carry trade logic suggests investing in high-interest-rate currencies, empirical evidence from long-term bonds demonstrates that investors should instead short the currencies with lower-than-average yield curve slopes to harvest the local bond term premium. This inversion occurs because steeper yield curves simultaneously predict lower currency excess returns but higher local bond returns. This highlights that the strategy contradicts the fundamental carry trade logic when the maturity is extended. Moreover, it suggests that investors might want to look for investment countries outside of the highest interest rate countries.

Importantly, Dreher et al. (2020) suggest that during the zero-lower-bound period, the predictive power of yield curvature for forecasting currency risk diminishes. The signaling efficacy of the curvature factor is often restored under conditions of normalized monetary policy and stable conditions. Thereby, UIP holds better in high-inflation environments (Lustig et al., 2019).

Although Brunnermeier et al. (2008) suggest that adding more currencies is likely to reduce the risk, the more recent literature has reported that there could be some advantages of alternative construction strategies. For example, Dreher et al. (2020) build strategies based on the yield curve's curvature factor and find that excluding the typical currencies construct strategies less susceptible to crash risk.

#### **4.6 Return predictability**

In addition to the yield curve, other factors contribute to the predictability of carry trade returns. Lu and Jacobsen (2016, p. 64) report that lower stock prices and lower commodity prices reduce future carry trade profits. In contrast, Lustig et al. (2019) state that there is no consistent evidence of 10-year bond predictability for all currency pairs when using interest rate differentials as a predictor. In summary, they suggest that the returns are unpredictable for long-term investments. This suggests that the condition is likely persist across different currency pairs. Importantly, they note that U.S. Treasury bill returns are still forecastable, suggesting that the short-term carry trade is superior to long-term alternatives.

However, Nymand-Andersen (2018) finds that bonds with residual maturity below three months exhibit significantly higher yield volatility compared to bonds with longer maturities. He notes this is due to reduced information near maturity instead of duration effects. Therefore, the pricing signals are also corrupted by noise, and thus investors might prefer longer carry trade strategies than at the absolute shortest end in terms of predictability.

Also, different credit qualities have different predictability. Indeed, Maciulis et al. (2023) report that different fixed-income assets share different return volatility characteristics. They note that investment-grade instruments are mainly driven by interest rate risk, whereas riskier assets, such as high-yield and emerging market instruments, are driven by credit risk. This highlights that the return predictability can significantly differ across different countries and currency pairs.

Importantly, Maciulis et al. (2023) find that riskier bond categories, such as high-yield corporate bonds and emerging market sovereign bonds, have delivered higher excess returns, but they also have a higher range and therefore are harder to predict. For investment-grade instruments, they note that short-term credit instruments have delivered the best risk-adjusted returns.

Dahlquist and Pénasse (2022) demonstrate that as the forecasting horizon extends, the real exchange rate becomes increasingly important for predicting currency movements. They attribute this to the fact that the missing risk premium is more persistent. While interest rate differentials drive short-term currency dynamics, the real exchange rate dominates at longer horizons. This suggests that carry trade returns, which depend on interest rate differentials in the short term, may reflect different risk dynamics when the maturity is extended.

Melvin et al. (2013) argue that investors should focus on ordering return forecasts rather than ranking by absolute magnitude. They highlight that even if investors forecast the direction and magnitude of currency movements incorrectly, they can still earn positive returns as long as the rank ordering of currencies is correct.

In conclusion, return predictability differs significantly across different currencies and fixed-income assets. When investors include multiple currency pairs and various types of fixed-income assets, their portfolio becomes significantly more complex and more challenging to predict, as it involves a vast number of components to consider. Lustig et al. (2019) note that the carry trade risk premium is absent when the maturity increases, and consequently, it does not generate any excess returns. Crucially, Hsu et al. (2024) observe that even the best strategies cannot consistently generate profits, and therefore, investors must frequently reformulate their approaches. Additionally, they note that carry trades are not persistently predictable; rather, they earn by luck.

## 4.7 Performance under high-volatility regimes

The commonly used risk-aversion measure in financial markets, VIX, forecasts financial stress and market uncertainty (Bekaert et al., 2013). The VIX is calculated using option-implied prices to forecast future volatility in the S&P 500 index. Bekaert et al. (2013) note that implied volatility can be decomposed into two components: risk aversion and uncertainty. A Rising VIX serves as an indicator of fear and uncertainty, whereas lower VIX values denote more stable conditions. Moreover, VIX values are inversely correlated with S&P 500 returns, that is, the VIX tends to spike during equity market drawdowns and decline during rising markets.

Typical carry trading strategies are sensitive to interest rate movements. However, as noted by Clarida et al. (2009), during periods of financial crisis, currency trades become significantly sensitive to equity market factors, particularly stock market declines. Lustig et al. (2011) support this by stating that the global risk factor, which they find explains the carry excess returns, is closely related to changes in the volatility of equity markets around the world. In addition, they find that high-interest-rate currencies tend to depreciate and generate low returns when volatility is high. These currencies offer a currency risk premium to compensate for crash risk.

Similarly, Brunnermeier et al. (2008, p. 337) confirm the pattern by stating that an increase in VIX often incurs carry trade losses and reduced carry trade activity. Importantly, forced portfolio revisions are more likely when the volatility is high ( Kempf et al., 2012, p. 1387). This is because hedge funds and other highly leveraged participants make up a significant share of carry traders and are therefore vulnerable to margin calls or other forms of forced selling.

While Daniel et al. (2014) acknowledge deterioration in performance during periods of financial distress, they note that this alone is insufficient to explain the profitability of carry trades. They note that additional factors should contribute to the risk premium profiles of carry trades. In contrast, Lee and Wang (2019) find that currencies that are

sensitive to negative market jumps have higher expected returns. By market jumps, they mean extreme discontinuous changes in foreign exchange rates. Moreover, they highlight that a significant portion of returns is constituted as compensation for extreme depreciation in individual currencies.

Gopinath et al. (2025) report that high-yield U.S. corporate bonds move more closely with U.S.-specific variables, including the VIX, than sovereign bonds do. In conclusion, high-yield bonds are the most equity-like instruments in the fixed-income universe. This is supported by Friewald et al. (2012), who found that high-yield bonds, in particular, experience weakened liquidity and a flight-to-quality effect during periods of financial distress.

In conclusion, both the carry component and the underlying investment are highly vulnerable during periods of elevated volatility. When uncertainty intensifies and carry trades begin to unwind, these strategies tend to perform extremely poorly. Importantly, Brunnermeier et al (2008, p. 339) argue that a rise in the VIX contemporaneously lowers carry trade returns, yet is followed by elevated returns in the following quarters. Melvin et al. (2013) report that the higher the expected volatility is, the more challenging it is to build successful carry trade strategies.

#### **4.8 Investor behavior and herding**

Herding refers to the behavior where investors consciously or unconsciously imitate the actions of other investors. In practice, this means a group of investors tends to buy or sell the same assets at the same time, leading to parallel movements in the market. This behavior can cause bubbles and crashes (Brunnermeier et al., 2008).

Brunnermeier et al. (2008) note that when the interest rate differential is high, futures traders tend to bet on the appreciation of the high-interest-rate currency and take long positions. Interestingly, they show that after a crash, the future crash risk declines, as

speculators increase their demand for insurance, leading to higher hedging costs and smaller speculator positions.

Hofmann et al. (2020) find that in emerging market economies (EMEs), foreign investors tend to increase their bond holdings when the local currency is appreciating, which consequently drives bond prices higher. Conversely, the opposite effect occurs when the local currency is depreciating. This adjacent behavior reflects how foreign investors' portfolio optimization creates synchronized capital flows that magnify both booms and busts in EME bond markets.

Cai et al. (2019) find that institutional herding in the corporate bond market is markedly higher than in the equity market. Their research further reveals that this tendency is especially evident among speculative-grade bonds and illiquid bonds. Furthermore, they observe that insurance firms, the largest group of corporate bondholders, exhibit the strongest herding behavior. Additionally, they emphasize that, in general, sell herding is more prevalent than buy herding.

Carry trades have traditionally been associated with banks and hedge funds, although participation is not confined to these institutions. More conventional corporations and other firms may also engage in such strategies. De Gregorio and Jara (2024) remark that firms operating in emerging markets have increasingly shifted towards financial intermediation, including participation in carry trades, although firms use the favorable conditions to finance future investments rather than to exploit the carry trade.

As De Gregorio and Jara (2024) argue, the evidence on the extent of corporate carry trade activity and the underlying motives of firms remains mixed. While they find that most non-financial corporations do not appear to engage in carry trades as a primary objective, they also stress that some firms deviate from their core business activities by taking on substantial foreign-currency exposures and accumulating excessive leverage, which increases their vulnerability to exchange rate movements. Nevertheless, they

conclude that these vulnerabilities largely reflect firm-level balance sheet and governance problems rather than constituting a systemic threat to global financial stability. Notably, they researched emerging market economies, not all firms.

Bekaert et al. (2013) emphasize that bubbles can arise because managers, evaluated vis-à-vis their peers, often construct similar overleveraged portfolios that involve excessive risk-taking. Therefore, most investors will not tolerate a strategy with several years of consecutive losses (Hsu et al., 2024). Thus, carry trade investors should be especially concerned about firms whose core activities are carry trading. Especially forecasting how other crucial market players might behave can be valuable. Logically, it is more challenging to evaluate competitors as the time horizon increases.

#### **4.9 Alternative strategies**

Generally, carry trading strategies involve a prototypical selection of currencies with high liquidity. Typical funding currencies include the Japanese yen (JPY) and Swiss franc (CHF), while typical investment currencies include the Australian dollar (AUD) and United States dollar (USD). However, Bekaert and Panayotov (2020) developed an alternative strategy that does not involve the aforementioned currencies. Their findings indicate that this strategy, which consists of alternative currencies, can yield higher Sharpe ratios.

Lee and Wang (2019) suggest that the jump strategy, which focuses on currencies that experience extreme discontinuous changes, yields better returns than regular carry strategies while still maintaining comparable standard deviation. Moreover, they suggest that an investor using a jump strategy can unwind positions if they expect a negative jump in the market. So, the jump strategy mitigated adverse returns and kept the strategy lucrative in their sample.

One common fixed-income strategy involves selecting longer-maturity securities than the planned holding period. According to Galvani and Landon (2013), the strategy is called riding-the-yield-curve investment strategy. While this strategy can leverage the

advantages of longer maturity securities, for example, the higher term premium, Galvani and Landon note that risks increase proportionally. They conclude that the risks outweigh the increased returns and that short-term investors should hold only short-term debt instruments. However, they suggest that long-term investors should include both short-term and long-term instruments in their portfolios. This eventually complicates the shaping of long-term fixed-income enhanced carry trade strategies.

As markets evolve rapidly, new strategies are likely to emerge. For example, during the introduction of the euro, investors engaged in a convergence trade, betting that the euro would be created and that high interest rates would subsequently decline (Daniel et al., 2014, p. 9). This strategy depended primarily on whether the euro would indeed come into existence. This illustrates how such strategies can be heavily influenced by political decisions.

While there may be some alternative strategies, Hsu et al. (2024) propose that investors cannot improve basic carry trade strategies by being adaptive. Thus, they suggest that alternative strategies do not offer significant advantages compared to traditional strategies. Nevertheless, some alternative strategies can deviate substantially from the fundamental characteristics of carry trades, such that they represent distinct investment strategies rather than alternative carry trade strategies. Importantly, buy-and-hold strategies cannot be applied to carry trades because foreign exchange market transactions inherently require both long and short positions simultaneously (Melvin et al., 2013).

Galati et al. (2007) report that some retail investors try to exploit interest rate differentials. They note that strategies that aim to exploit higher foreign interest rates are not considered carry trade strategies as long as they are not leveraged. Similarly, some investors borrow from lower-yielding foreign countries in order to fund purchases in their home countries. These strategies are not considered carry trading strategies. Notably, Galati et al. (2007) suggest that these strategies are less likely to unwind in market turbulence.

## 5 Conclusion

This thesis demonstrates that currency carry strategies allocating borrowed funds into fixed-income securities vary structurally across different maturities. The profitability of short-horizon carry trades is well-documented: short-maturity carry trades generate significant excess returns, as the uncovered interest parity (UIP) systematically fails. For long-maturity carry trades, Lustig et al. (2019) show that these returns deteriorate as bond maturity increases. For long-term bonds, the interest rate differential is often offset by currency depreciation or term premia, implying that UIP holds more effectively in the long run and consequently long-term carry trade strategies yield near-zero excess returns.

Lustig et al. (2019) suggest that not only are traditional interest-rate-differential-based carry trades unprofitable for long-term bonds, but also yield-curve-slope-based strategies that offer an alternative approach that harvests the local bond term premium are unprofitable for long maturities. One explanation for zero excess returns in long-maturity strategies is that the efficient market hypothesis (EMH) holds more robustly in the long term, while short-term deviations still exist. The efficient market hypothesis is another explanation for why short-term strategies generally outperform long-term alternatives.

Evaluating investor performance is more complex than in equity strategies, primarily because of the lack of appropriate performance metrics and benchmarks (Melvin et al., 2013). According to them, this challenge arises from the absence of passive benchmarks, such as the S&P 500 index in equity markets. Additionally, carry trade investors do not tolerate note strategies with several years of consecutive losses (Hsu et al., 2024). Notably, all foreign exchange trades follow active management to some degree, and there are no completely passive strategies (Melvin et al., 2013).

Carry trade strategies involving emerging market currencies and high-credit-risk fixed-income assets present a fundamentally different risk profile compared to developed market strategies. Unlike G10 currencies, which have solid liquidity and sovereign bonds

with negligible credit risk, emerging market assets incorporate an additional and substantial credit risk premium. Consequently, the carry premium may be significantly outweighed by the credit risk component, causing the strategy's fundamental structure to deviate substantially from traditional carry trades. Notably, as credit risk increases proportionally with maturity, the deviation from traditional carry trade strategies widens, progressively eroding expected returns at longer investment horizons.

This thesis finds substantial evidence supporting Lustig et al. (2019) that the term structure of currency carry trade risk premia is downward sloping, indicating that most carry trades are not profitable in the long term. However, this thesis does not explicitly rule out the possibility of profitable long-term currency trade strategies, though many alternatives do not rely on the fundamental mechanisms of carry trades. For example, they might partially hedge the carry factor, meaning such strategies should not be considered pure carry trades.

While the findings of this thesis are relevant to a broad audience, they are primarily intended for active fixed income portfolio managers, FX and multi-asset traders, and researchers focused on the intersection of macroeconomics and finance. In addition, central bank economists and regulators may benefit from its insights on crowding and crash risk. Future work could extend this analysis through empirical studies by constructing and comparing benchmark portfolios. Moreover, this thesis highlights the need for further research to determine whether alternative long-term strategies exist that consistently deliver high Sharpe ratios.

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